In the Matter of

CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING

Investigation No. 337-TA-266

USITC PUBLICATION 2171

MARCH 1989

United States International Trade Commission
Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

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Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of	)	
CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING	)	Investigation No. 337-TA-266

NOTICE OF ISSUANCE OF
EXCLUSION ORDER

AGENCY: U.S. International Trade Commission.

ACTION: The Commission has determined to issue a general exclusion order in the above-captioned investigation.

AUTHORITY: The authority for the Commission's action is contained in section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) and in sections 210.53-.58 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.53-.58).

SUMMARY: Having determined that the issues of remedy, the public interest, and bonding are properly before the Commission, and having examined the written submissions filed on remedy, the public interest, and bonding, as well as those portions of the record relating to those issues, the Commission has determined to issue a general exclusion order prohibiting entry into the United States, except under license, of (1) reclosable plastic bags and tubing manufactured according to a process which, if practiced in the United States, would infringe claims 1, 3, 4, or 5 of U.S. Letters Patent 3,945,872, and (2) reclosable plastic bags and tubing which infringe U.S. Trademark Registration No. 946,120.

The Commission has further determined that the public interest factors enumerated in section 337(d) (19 U.S.C. § 1337(d)) do not preclude issuance of the aforementioned general exclusion order and that the bond during the Presidential review period should be in the amount of 460 percent of the entered value of the articles concerned.

FOR FURTHER INFORMATION CONTACT: Paul R. Bardos, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone 202-252-1102.

SUPPLEMENTARY INFORMATION: On March 25, 1987, Minigrip, Inc. filed a complaint and a motion for temporary relief under section 337, alleging a violation of section 337 in the unlawful importation and sale of certain reclosable plastic bags and tubing manufactured abroad according to a process which, if practiced in the United States, would infringe claims 1-5 of U.S. Letters Patent 3,945,872 and bearing a color line mark infringing U.S. Trademark Registration No. 946,120, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

The Commission instituted an investigation and named 20 firms as respondents. Two firms were later added as respondents. On November 30, 1987, the Commission issued a temporary exclusion order. Subsequently, eight respondents were terminated from the investigation on the basis of a settlement agreement, and 12 respondents were held in default. On January 29, 1988, the presiding administrative law judge issued an initial determination (ID) finding a violation of section 337. On March 16, 1988, the Commission issued a notice of nonreview of the ID. The parties and interested members of the public were requested to file briefs on remedy, the public interest, and bonding. Notice of the Commission's decision not to review the ID was published in the Federal Register, 53 F.R. 9495 (March 23, 1988). Complainant, the Commission investigative attorney, and two nonparties submitted briefs. No other submissions were received.

Copies of the Commission's Order, the Commission Opinion in support therof, and all other nonconfidential documents filed in connection with this investigation are available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, telephone 202-252-1000. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1805.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: April 29, 1988

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of	)	
CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING	)	Investigation No. 337-TA-266

ORDER

The Commission, having determined that the issues of remedy, the public interest, and bonding are properly before it, and having examined the written submissions filed thereon, as well as the relevant portions of the record, and having determined that the public interest factors enumerated in section 337(d), 19 U.S.C. § 1337(d), do not preclude issuance of a general exclusion order, it is hereby

ORDERED:

1. Reclosable plastic bags and tubing manufactured abroad according to a process which, if practiced in the United States, would infringe claims 1, 3, 4, or 5 of U.S. Letters Patent 3,945,872 are excluded from entry into the United States for the remaining life of the patent, except under bond as provided in paragraph 3 below and except as may be licensed by the patent owner;

2. Reclosable plastic bags and tubing which infringe U.S. Trademark Registration No. 946,120 are excluded from entry into the United States, except under bond as provided in paragraph 3 below and except as may be licensed by the trademark owner;

3. The articles covered by this Order are entitled to entry into the United States under bond in the amount of 460 percent of the entered value of such articles, from the day after this Order is received by the President, pursuant to subsection (g) of section 337 of the Tariff Act of 1930, until such time as the President notifies the Commission that he approves or disapproves this action, but no later than 60 days after the date of receipt of this Order by the President;

4. Notice of this Order shall be published in the Federal Register and this Order and the Commission Opinion in support thereof shall be served upon each party of record to this investigation and upon the Department of Health and Human Services, the U.S. Department of Justice, the Federal Trade Commission, and the Secretary of the Treasury.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: April 29, 1988

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

In the Matter of	)	
CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING	)	Inv. No. 337-TA-266

COMMISSION OPINION

On January 29, 1988, the presiding administrative law judge (ALJ) issued an initial determination (ID) finding a violation of section 337 (19 U.S.C. § 1337) of the Tariff Act of 1930. On March 16, 1988, the Commission issued a notice of nonreview of the ID. This opinion discusses the Commission's determinations regarding the issues of remedy, the public interest, and bonding.

Procedural History

On March 25, 1987, Minigrip, Inc. filed a complaint and a motion for temporary relief under section 337, alleging violation of section 337 in the unlawful importation and sale of certain reclosable plastic bags and tubing manufactured abroad according to a process which, if practiced in the United States, would infringe claims 1-5 of U.S. Letters Patent 3,945,872 (the '872 patent) and bearing a color line mark infringing U.S. Trademark Registration No. 946,120 (the colorline trademark), the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States.

On April 21, 1987, the Commission instituted an investigation based on Minigrip's complaint. A notice of investigation was published in the Federal Register, 52 F.R. 15568 (April 29, 1987). Twenty firms were named as respondents in that notice: Meditech International Co. (Meditech); Polycraft

Corp. (Polycraft); Euroweld Distributing (Euroweld); Chung Kong Industrial Co., Ltd. (Chung Kong); Gideons Plastic Industrial Co., Inc. (Gideons); Ideal Plastic Industrial Co., Ltd. (Ideal); Lien Bin Plastics Co., Ltd. (Lien Bin); Ta Sen Plastic Industrial Co., Ltd. (Ta Sen); Teck Keung Manufacturing, Ltd. (Teck Keung); Insertion Advertising Corp. (Insertion); Ka Shing Corp. (Ka Shing); Tracon Industries Corp. (Tracon); Nina Plastic Bags, Inc. (Nina); Lim Tai Chin Pahathet Co., Ltd. (Lim Tai Chin); Siam Import-Export Ltd. (Siam); Rol-Pak Sdn Bhd (Rol-Pak); Chang Won Chemical Co., Ltd. (Chang Won); Hogn Ter Product Co., Ltd. (Hogn Ter); C.A.G. Enterprise Pte. Ltd. (C.A.G.); and Kwang Il. Subsequently, Keron Industrial Co., Ltd. (Keron) and Daewang International Corp. (Daewang) were added as respondents. On November 30, 1987, the Commission issued a temporary exclusion order. Subsequently, respondents Meditech, Euroweld, Polycraft, Chung Kong, Gideons, Lien Bin, Keron, and Daewang were terminated from the investigation on the basis of a settlement agreement, and all but two (Chang Won and Kwang Il) of the remaining respondents were held in default.

The presiding ALJ held an evidentiary hearing on December 4, 1987, at which complainant, respondents, and the Commission investigative attorney were afforded an opportunity to be heard. On January 29, 1988, the ALJ issued an ID finding a violation of section 337. 1/ 2/ On March 16, 1988, the

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1/ Respondents C.A.G., Siam, and Hogn Ter were found to infringe claims 1, 3, 4, and 5 of the '872 patent. Respondents Chang Won, Kwang Il, Lim Tai, and Rol-Pak, and nonrespondent Harbona were found to infringe claims 1 and 5 of the '872 patent. Respondents Ideal, Ta Sen, and Teck Keung were found to infringe claim 1 of the '872 patent. Respondents Insertion, Ka Shing, Nina, and Tracon were found not to infringe any of the claims at issue of the '872 patent.

2/ Respondents C.A.G., Siam, Hogn Ter, Chang Won, Kwang Il, Lim Tai, Rol-Pak, Ideal, Ta Sen, Ka Shing, Nina, and nonrespondent Harbona were found to infringe the colorline trademark. Respondents Insertion, Teck Keung, and Tracon were found not to infringe the colorline trademark.

Commission issued a notice of nonreview of the ID.

Notice of the Commission's decision not to review the ID was published in the Federal Register, 53 F.R. 9495 (March 23, 1988). In that notice, the parties and interested members of the public were requested to file briefs on the issues of remedy, the public interest, and bonding. Complainant, the Commission investigative attorney, and two nonparties submitted briefs. No other submissions were received.

Discussion

I. Remedy

We have determined to issue a general exclusion order prohibiting the importation, except under license, of (i) all reclosable plastic bags and tubing manufactured abroad according to a process which would infringe claims 1, 3, 4, or 5 of the '872 patent if practiced in the United States; and (ii) all reclosable plastic bags and tubing which infringe the colorline trademark.

The Commission set out standards for issuing general exclusion orders in Certain Airless Paint Spray Pumps and Components Thereof (Spray Pumps), Inv. No. 337-TA-90, USITC Pub. No. 1199, at 17-19. Under Spray Pumps, a general exclusion order is appropriate when there is proof of (1) a widespread pattern of unauthorized use of the patented 3/ invention, and (2) "certain business conditions from which one might reasonably infer that foreign manufacturers other than respondents to the investigation may attempt to enter the U.S. market with infringing articles."

3/ The Spray Pumps criteria are couched in terms of investigations involving patents, but they apply with equal validity to investigations involving trademarks.

In this investigation, we have found that several respondents and a nonrespondent infringe the '872 patent and/or the colorline trademark, and that several firms have already imported and sold infringing bags despite the exclusion order issued at the conclusion of ITC Inv. No. 337-TA-110. The first element of Spray Pumps appears to be satisfied.

Complainant's sales and efforts to expand its capacity attest to the existence of an established demand for the product. As noted above, we have found that imports from respondents and a nonparty which infringe the '872 patent and/or the colorline trademark have already been marketed in the United States. We have further found that significant foreign production capacity for producing infringing bags already exists, part of which was found to be controlled by a nonparty. Two other nonparties have filed remedy comments. Thus the second element of Spray Pumps appears to be established and business conditions appear appropriate for the issuance of a general exclusion order.

We note that a test is now available for use in determining whether a given reclosable plastic bag is produced by a process which infringes the '872 patent. This test is based on the principles of birefringence. Briefly, a Heat-Seal-O-Scope enables an observer to see whether bright blue bands of color appear when polarized light is passed through the reclosable plastic bag being tested, indicating that it is birefringent and therefore infringing. Complainant says that it can provide the U.S. Customs Service with sufficient Heat-Seal-O-Scopes for Customs' use.

Complainant also seeks the issuance of cease and desist orders. We have determined not to issue such orders, since the existing temporary exclusion order and the exclusion order issued at the conclusion of ITC Inv. No.

337-TA-110 should have limited the amount of importation and inventory buildup by importers. The main sources of infringing bags are overseas producers rather than domestic importers' inventories. An exclusion order is a more appropriate and effective form of relief as to foreign manufacturers.

II. Public Interest

The Commission may issue an exclusion order only after "considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers." 19 U.S.C. 1337(d). We are aware of no public interest factors that would preclude issuance of the aforementioned general exclusion order.

III. Bonding

In determining the amount of the bond, the Commission looks to the amount sufficient to "offset any competitive advantages resulting from the unfair method of competition or unfair act enjoyed by persons benefitting from the importation." S. Rep. No. 1298, 93d Cong., 2d Sess. 198 (1974). We have determined to impose a bond of 460 percent of the entered value of the articles in question.

Our determination of the amount of the bond, 460 percent of entered value, is based on calculation of an average of the amounts by which infringing imports undersell complainant's product, as calculated by the Commission investigative attorney. We note that the U.S. Customs Service has requested that bonds be calculated as a percentage of entered value.

Complainant argued for a bond of 755 percent of entered value, which would match the largest margin of underselling among the respondents. We have

determined not to adopt complainant's position because a bond of 460 percent of entered value will generally offset the advantage of persons benefitting from importation. Although, unlike the higher bond recommended by complainant, it will not offset the underpricing of the most extreme underseller, it will also not require other, less extreme undersellers to post bonds greater than their underpricing warrants.

CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING INV. No. 337-TA-266

Certificate Of Service

I, Kenneth R. Mason, hereby certify that the attached NOTICE OF ISSUANCE OF EXCLUSION ORDER, was served upon Cheri M. Taylor, Esq., and Jeffrey L. Gertler, Esq., and upon the following parties via first class mail, and air mail where necessary, on May 2, 1988.

Kenneth R. Mason, Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Complainant--

Minigrip, Inc.
Route No. 303
Orangeburg, New York 10962

Counsel for Complainant--

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Gerald Levy, Esq.
Ronald R. Santucci, Esq.
KANE, DALSIMER, SULLIVAN, KURUCZ, LEVY, EISELE & RICHARD
420 Lexington Avenue
New York, New York 10170

Respondents--

C.A.G. Enterprise Pte. Ltd.
60 1B Hillview House
Jalan Remaja Singapore 2366

Chang Won Chemical Co., Ltd.
Rm. #301 Korean Express Bldg.
36-7, Hannam-Dong, Yongsan-Ku
Seoul, R.O. Korea

Chung Kong Industrial Co., Ltd.
Wah Shun Ind. Bldg.
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Yau Tong Bay
Kowloon, Hong Kong

Euroweld Distributing
P.O. Box 5102
Hazlet, New Jersey 07730

Insertion Advertising Corp.
132 West 24th Street
New York, New York 10011

Ka Shing Corp.
150 S. 4th Avenue
Mount Vernon, New York 10551

Kwang Il
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36-7, Hannam-Dong, Yongsan-Ku
Seoul, R.O. Korea

Lim Tai Chin Pahathet Co. Ltd.
63-65 Mahaputaram Rd. (Wat Takheim)
Bangkok, Thailand

Nina Plastic Bags, Inc.
1936 Premier Row
Orlando Central Park
Orlando, Florida 32809-6282

Rol-Pak Sdn Bhd
Chin Thye Sdn Bhd
5th Floor, Plaza Petaling
65-67 Jalan Petaling
50000 Kuala Lumpur, Malaysia

CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING Inv. No. 337-TA-266

CERTIFICATE OF SERVICE--Continued

Respondents--Continued

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On Behalf of Gideons Plastic Industrial Co., Ltd.; Hogn Ter Product Co., Ltd.; Ideal Plastic Industrial Co., Ltd.; Lien Bin Plastic Co., Ltd.; Meditech International Co.; Polycraft Corporation; and Ta Sen Plastic Industrial Co., Ltd.--

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CERTIFICATE OF SERVICE - Cont'd

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Embassy of Malaysia
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Washington, D.C. 20008
ATTN: Counselor (Economic)

Embassy of Thailand
2300 Kalorama Rd., N.W.
Washington, D.C. 20008
ATTN: Commercial Counselor

Embassy of Singapore
1824 R Street, N.W.
Washington, D.C. 20009
ATTN: Counselor (Financial)

United Kingdom of Great Britain
& Northern Ireland
3100 Mass. Ave., N.W.
Washington, D.C. 20008
ATTN: Counselor (Hong Kong Affairs) Commercial

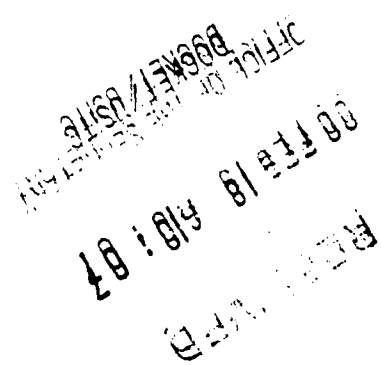
PUBLIC VERSION
UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	
CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING	Investigation No. 337-TA-266

Initial Determination

Paul J. Luckern, Administrative Law Judge

Pursuant to the Notice of Investigation in this matter (52 Fed. Reg. 15568, April 29, 1987), this is the administrative law judge's initial determination, under Commission Rule 210.53 (19 C.F.R. 210.53). The administrative law judge hereby determines, after a review of the record developed, that there is a violation of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. §1337) (section 337), in the alleged unauthorized importation into and sale in the United States of certain reclosable plastic bags and tubing with the tendency to destroy or substantially injure industries, efficiently and economically operated in the United States.



APPEARANCES

FOR COMPLAINANT MINIGRIP, INC.:

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Gerald Levy, Esq.
Ronald R. Santucci, Esq.
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New York, NY 10170

FOR STAFF

Cheri M. Taylor, Esq., and Jeffrey L. Gertler, Esq.

January 29, 1988

TABLE OF CONTENTS

ABBREVIATIONS

CPF	Complainant's Proposed Finding
C Post	Complainant's Post Hearing Brief
C Post R	Complainant's Reply Brief
C Post SR	Complainant's Post Surreply Brief
CPX	Complainant's Physical Exhibit
CX	Complainant's Exhibit
Ex.	Exhibit
FF	Findings of Fact
PreH Tr.	Prehearing Transcript
RX	Certain Settling Respondents' Exhibits (from TEO Hearing)
S Pre H	Staff's Prehearing Brief
SPF	Staff's Proposed Finding
S Post	Staff's Post Hearing Brief
S Post R	Staff's Reply Brief
SPX	Staff's Physical Exhibit
SX	Staff's Exhibit
TEO hearing	Temporary Exclusion Order hearing held on July 6 to 10, 1987
TEO initial determination	Initial Determination which issued on complainant's motion for a temporary exclusion order
Tr	Transcript of TEO Hearing
TR	Transcript of 12/4/87 Hearing

PROCEDURAL HISTORY

On March 25, 1987, complainant Minigrip, Inc. (Minigrip) filed a complaint with the Commission under section 337. The complaint, as supplemented on April 9, 1987, alleged unfair methods of competition and unfair acts in the importation into, and sale in, the United States of certain reclosable plastic bags and tubing (1) manufactured abroad by a process which, if practiced in the United States, would infringe claims 1-5 of the U.S. Letters Patent 3,945,872 (the '872 patent), and (2) bearing a color line mark which infringes U.S. Trademark Registration No. 946,120 (the '120 trademark). It further alleged that the effect or tendency of the unfair methods of competition and unfair acts is to destroy or substantially injure an industry, efficiently and economically operated, in the United States. The complainant requested that the Commission institute an investigation, conduct temporary relief proceedings and issue a temporary exclusion order prohibiting importation of the articles in question into the United States.[1/] After a

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1/ In January, 1977, the Commission issued an exclusion order based upon a complaint of Minigrip in Investigation No. 337-TA-22 excluding from entry into the United States reclosable plastic bags covered by claims of U.S. Patent No. Re 28,969. That exclusion order expired on August 3, 1982 with the expiration of said patent. In September, 1982, the Commission issued an exclusion order based upon a complaint of Minigrip in Investigation No. 337-TA-110 excluding from entry into the United States reclosable plastic bags made in accordance with methods covered by the claims of U.S. Patent Nos. Re 26, 991 (the Luca patent), Re 28,959 and Re 29,208. At the time Minigrip brought its action for that exclusion order, Minigrip did not own the '872 patent (FF 29) and hence while licensed thereunder, it did not have the right to institute any action under the '872 patent. The 337-TA-110 exclusion order expired on December 1, 1987, with the expiration of Re 28,959. Re 26,991 and Re 29,208 had already expired.

full investigation, the complainant requested that the Commission issue a permanent exclusion order and a permanent cease and desist order.

An investigation was instituted on April 22, 1987. The notice of investigation was published on April 29, 1987 (52 Fed. Reg. 15568). The scope of the investigation, as to subject matter, is defined in the complaint as supplemented.

The notice of investigation named the following respondents:

C.A.G. Enterprise Pte. Ltd. of Singapore (C.A.G.)

Chang Won Chemical Co., Ltd. of Korea (Chang Won)

Chung Kong Industrial Co., Ltd. of Hong Kong (Chung Kong)

Euroweld Distributing of New Jersey (Euroweld)

Gideons Plastic Industrial Co., Ltd. of Taiwan (Gideons)

Hogn Ter Product Co., Ltd. of Taiwan (Hogn Ter)

Ideal Plastic Industrial Co., Ltd. of Taiwan (Ideal)

Insertion Advertising Corp. of New York (Insertion)

Ka Shing Corp. of New York (Ka Shing)

Kwang Il of Korea (Kwang Il)

Lim Tai Chin Pahathet Co. Ltd. of Thailand (Lim Tai)

Lien Bien Plastics Co., Ltd. of Taiwan (Lien Bin)

Meditech International Co. of Colorado (Meditech)

Nina Plastic Bags, Inc. of Florida (Nina Plastic)

Polycraft Corporation of California (Polycraft)

Rol-Pak Sdn Bnd of Malaysia (Rol-Pak)

Siam Import-Export Ltd. of Thialand (Siam Import)

Ta Sen Plastic Industrial Co., Ltd. of Taiwan (Ta Sen)

Teck Keung Manufacturing Ltd. of Hong Kong (Teck Keung)

Tracon Industries Corp. of New York (Tracon)

On August 31, 1987, the administrative law judge issued a TEO initial determination granting in part complainant's motion for temporary relief under subsections (e) and (f) of section 337. On October 5, 1987 the Commission issued a notice not to review the initial determination and scheduled the filing of written submissions on remedy, the public interest and bonding. 2/

On November 30, 1987, the Commission issued a notice of issuance of a temporary exclusion order prohibiting entry into the United States, except under bond or license, of (1) reclosable plastic bags and tubing manufactured according to a process which, if practiced in the United States, there is reason to believe would infringe claim 1 of the '872 patent, and (2) reclosable plastic bags and tubing with respect to which there is reason to believe they infringe the '120 trademark.

On October 8, 1987 an initial determination issued (Order No. 28) granting complainant's motion to amend the complaint and notice of investigation to add Keron Industrial Co., Ltd. (Keron) and Daewang International Corp. (Daewang) as party respondents. On October 29, 1987 the Commission issued a notice not to review that initial determination.

Pursuant to Commission rule 210.25(b), on November 19, 1987 an initial determination issued (Order No. 44) finding respondents Hogn Ter, Insertion,

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2/ In the October 5, 1987 notice the Commission did not adopt portions of the administrative law judge's reasoning with regard to the issues of: (1) trademark validity, (2) domestic industry, and (3) effect or tendency to substantially injure the domestic industry.

Ka Shing, Nina Plastic, Siam Import, Ta Sen, Teck Keung[3/] and Tracon in default, on December 9, 1987 an initial determination (Order No. 56) issued finding respondents C.A.G., Lim Tai and Rol-Pak in default,[4/] and

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3/ Footnote 1 of Order No. 44 made reference to an October 30, 1987 letter from Teck Keung to the Secretary. In a letter dated December 11, 1987, to the Secretary Teck Keung stated in part:

> We refer to our letter dated Oct. 30 and wish to advise we still do not receive your reply.
>
> We keep on receiving documents regarding investigation No. 337-TA-266 with many thanks.
>
> In according to the "REPLY STATEMENT OF RESPONDENTS CONCERNING REMEDY, PUBLIC INTEREST AND BONDING" we are not infringing patent '872. And in according to the "COMMISSION MEMORANDUM OPINION" we are not infringing the colorline trade mark '120.
>
> We would appreciate it if you will confirm that we are correct.

A letter dated January 19, 1988 from Teck Keung signed by David Hui, Managing Director, to the administrative law judge stated in part:

> In accordance with the document "REPLY STATEMENT OF RESPONDENTS CONCERNING REMEDY, PUBLIC INTEREST AND BONDING" we are not infringing the '872 patent. And according to the document "COMMISSION MEMORANDUM OPINION", we are not infringing the colourline trade mark '120. We presume that we now can ship our plastic reclosable bags and tubings to U.S.A. due to the EXCLUSION ORDER expired on Dec. 1, 87. We should appreciate it if you would grant us this permission.
>
> Kindly note base on our capacity, at the most we can only supply 30,000 kgs. of bags per month to U.S.A.
>
> Please be advised we are experiencing labour problems in Hong Kong. Highly likely, we will move our factory to either China or Thailand.

4/ As stated in Order Nos. 46 (which ordered certain respondents to show cause why they should not be found in default) and 56, a review of the records at the Secretary's Office showed that the complaint and notice of investigation as well as other mailings to named respondents Kwang Il and Chang Won have been returned to the Secretary's office. In Order No. 56, the administrative law judge noted that until it is shown that respondents Chang Won and Kwang Il at least had some awareness of the allegations against them,

(Footnote continued to page 5)

on December 24, 1987 an initial determination (Order No. 59) issued finding respondent Ideal in default.[5/] Accordingly it was found that said respondents have waived their right to appear at any hearing, to be served with documents in the investigation and to contest the allegations at issue in the investigation. On December 21, 1987, January 14, 1987 and January 25, 1988 the Commission issued notices not to review the initial determinations which issued respectively on November 19, December 9 and December 24.

On November 25, 1987 an initial determination (Order No. 49) issued granting a joint motion of complainant and the eight respondents Meditech, Polycraft, Chung Kong, Euroweld, Daewang, Keron, Gideons, and Lien Bin (settling respondents) and terminating the investigation as to said respondents. The joint motion was based on a settlement agreement by virtue of which complainant discharged said respondents from any claim regarding any prior infringement of either the '872 patent or the '120 trademark. The agreement stated that it was not evidence or an admission of a violation of section 337. On December 29, 1987 the Commission issued a notice not to review said initial determination.

On January 29, 1988, Order No. 61 issued which imposed discovery sanctions on certain respondents.

(Footnote continued from page 4)
the administrative law judge would not find them in default, pursuant to Commission rule 210.25(a).

5/ On December 28, 1987 a letter from Ideal was received which requested an extension of time to submit video tape and documents "as our final contest all allegations at issue". On January 4, 1988, the administrative law judge issued a notice to all parties which informed the parties that because the initial determination finding Ideal in default had issued, the requested extension was denied.

A hearing on complainant's request for permanent relief was held on December 4, 1987. Only complainant and the staff made substantive appearances.[6/] Posthearing submissions have been filed by complainant and the staff. On January 11, 1988 complainant served a motion for leave to file a surreply brief to the reply brief of the staff's posthearing submissions. That motion was granted on January 13 (Order No. 60). The matter is now ready for initial determination.

This initial determination is based on the evidentiary record compiled at the hearing held on December 4 and the exhibits admitted into evidence for that hearing.[7/] The administrative law judge has taken into account his observation of witnesses who testified live at the hearing. Proposed findings submitted by the parties participating at the hearing, but not herewith

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6/ Counsel for the settling respondents represented at the hearing that the settling respondents were present only in an observer capacity. (PreH Tr. at 23). The settling respondents did not file any prehearing or posthearing submissions. The settling respondents however in a letter to the administrative law judge dated December 28, 1987 "in an amicus curia capacity" expressed concern that the staff in its posthearing submissions seems to be asserting that the settling respondents have admitted infringement of the '120 trademark.

7/ In Order No. 54 which issued December 2, 1987 and at the prehearing conference (PreH Tr. at 31, 32, 51), the administrative law judge granted joint Motion No. 266-41 of complainant and the staff whereby (1) all exhibits in evidence, and all testimony admitted into evidence, at the TEO hearing were made of record for the final hearing, (2) all additional exhibits for the final hearing were submitted in accordance with Order No. 1 and sequentially numbered starting with the party's next exhibit number following the last exhibit number for the TEO hearing, (3) witness statements of the witnesses at the final hearing merely supplemented any prior witness statements with the exception of complainant's Keegan who resubmitted his witness statement, and (4) the testimony of complainant's Nocek was taken on submission and comprised CX-179, the transcript of his deposition RX-90 and RX-91 and his live direct and cross examination at the TEO hearing.

adopted either in the form submitted or in substance, are rejected either as not supported by the evidence or as involving immaterial matters.[8/] The findings of fact include references intended to serve as guides to the testimony and exhibits supporting the findings of fact. The references however do not necessarily represent complete summaries of the evidence supporting each finding.

JURISDICTION

The Commission has in rem and subject matter jurisdiction (FF 1, 3).

With respect to in personam jurisdiction upon a showing of service of process, there is jurisdiction over domestic respondents. International Shoe Co. v. Washington, 326 U.S. 310 (1945).[9/] The administrative law judge

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8/ There is in evidence, with no objections from complainant (PreH Tr. at 48), SX-27 (Version A (Public) of a Lloyd Hessenaur letter affidavit from Dow Chemical Company (Dow)), SX-27(a) (Version B (conf.) of the Dow Hessenaur affidavit) and SX-27(b)-ITC (ITC Version C of the Dow Hessenaur affidavit). As stated in a staff letter dated November 23, 1987, Dow requested that certain information, insofar as it involves sales and volume amounts, not be made available to representatives of complainant, including complainant's outside counsel, except for complainant's financial expert Keegan. In the letter it was represented that complainant's counsel has no objection. Accordingly there are the three versions of the Dow Hessenaur letter affidavit, viz. SX-27, SX-27(a), SX-27(b)-ITC. Outside counsel has no access to SX-27(b)-ITC. The staff further represented that Dow feels that a ball park figure of Dow's sales of ZIPLOC bags per year, viz. around the 100 million dollar range, is public knowledge (TR at 9). To permit access of this initial determination to outside counsel, Dow information that outside counsel does not have access to is only referenced by citation to the Dow exhibit.

9/ The administrative law judge has found certain respondents in default. However in personam jurisdiction is not a prerequisite for finding a party in

(Footnote continued to page 8)

finds that there is in personam jurisdiction over domestic respondents Insertion, Ka Shing, Nina Plastic and Tracon because there is proof of receipt of service of the complainant and notice of investigation were made on those respondents (FF 3).

With respect to foreign respondents, under the International Shoe Co. case, supra, there has to be service of process shown. As to those foreign manufacturers who sell articles for export to the United States, even through there is receipt of process, personal jurisdiction is generally unavailable where the foreign manufacturers sells the articles to another independent foreign company which then actually makes the sale for exportation to the United States. Minimum contacts are generally not present even where it is reasonably foreseeable to the foreign manufacturer that its independent purchaser will export the article to the United States, because a party's own contacts with the forum must be the basis for personal jurisdiction. See, Asahi Metal Industry Co. v. Superior Court, 1007 S.Ct. 1026 (Feb. 1987) (minimum contacts not present in cross claim against a Japanese manufacturer of allegedly defective tire valves in products liability action arising out of

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(Footnote continued from page 7)
default. See July 11, 1979 Opinion of Commissioners Alberger, Moore, Bedell and Stern p. 5 in Certain Novelty Glasses Investigation No. 337-TA-55 in which no respondent participated in the investigation and yet the Commission did not disturb the administrative law judge's findings that said respondents were in default and also reaffirmed its position that the "effect of granting a default motion is merely to authorize the ALJ 'to create certain procedural disabilities for the defaulting party and to entertain, without opposition, proposed findings and conclusions based upon substantial, reliable, and probative evidence, which would support a recommended determination'". In personam jurisdiction is a prerequisite for the issuance of any cease and desist order which complainant has requested. Certain Large Video Matrix Display Systems Investigation No. 337-TA-75, USITC Pub. No. 1158, (Comm. Op. 1981) at 40.

California tire use, where the foreign valve manufacturer sold its products as components to a Taiwanese tire manufacturer who in turn exported the tires to the United States); World-Wide Volkswagon Corp. v. Woodson, 444 U.S. 286 (1980) (insufficient contacts for products liability action in Oklahoma against nonresident New York retailer and its wholesaler distributor where car purchased in New York by plaintiff who unilaterally, though foreseeably, brought car to Oklahoma). Minimum contacts are available against the direct exporter, and its principals, of articles to the United States for actions specially arising out of their exportation to the United States. The administrative law judge believes that infringement of intellectual property is analogous to actions for tortious injury directly caused by actions outside the forum, in that the infringement in the forum immediately results from the exportation. See, Horne v. Adolph Coors Co., 684 F.2d 255 (3rd Cir. 1982); Oswalt v. Scripto Inc., 616 F.2d 191 (5th Cir. 1980); Keeton v. Hustler Magazine Inc., 465 U.S. 770 (1984); Calder v. Jones, 465 U.S. 783 (1984). The Supreme Court has distinguished between the level and continuity of contacts sufficient to provide general jurisdiction over a party (where the action does not arise out of the party's activities directed at the forum) and the purposeful and direct minimum contact needed to justify special personal jurisdiction over actions arising out of the party's forum directed activities. Helicopteros Nacionales de Colombia v. Hall, 466 U.S. 408, 416 (1984); Burger King Corp. v. Rudzewicz, 471 U.S. 462 (1985). There is precedent supporting personal jurisdiction arising out of a single act directed at the forum where the cause of action arises out of that act. Wright & Miller, Federal Practice and Procedure section 1067.

The record establishes that there has been proof of receipt of process by foreign respondent Siam Import but not by foreign respondents Chang Won, Kwang Il, C.A.G., Rol-Pak, Ta Sen, Hogn Ter and Lim Tai (FF N 3). In addition Siam Import has been directly involved in exportation to the United States through its agent C.A.G. (FF N 216). There also has been efforts by Teck Keung to secure entry of its imported shipment after the shipment had been subjected to a Customs redelivery notice (FF N 133).

Personal jurisdiction is further procedurally established against foreign respondent Ideal, and as a separate and alternative ground, against Teck Keung. Thus Ideal filed a response to the complaint and notice of investigation but made no assertion of the affirmative defense of lack of personal jurisdiction. Under Commission rule 210.21(b) and analogous FRCP 12(b)(2) that defense is waived and personal jurisdiction has been established consistent with due process requirements by constructive consent. See, Hammond Packing Co. v. Arkansas, 456 U.S. 694 (1909); Insurance Corp. Compagnie des Bauxites, 456 U.S. 694 (1982).[10/] Similarly, Teck

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10/ The Bauxites decision of the Supreme Court approves as consistent with due process adverse inferences of personal jurisdiction as a sanction for a respondent's failure to answer discovery solely directed to the issue of contacts with the forum. Such discovery requests were not made in this investigation. Since personal jurisdiction is not an element of required proof for establishing a violation under section 337, Sealed Air Corp. v. U.S. International Trade Commission, 645 F.2d 976, 209 U.S.P.Q. 469 (C.C.P.A. 1981), such adverse inferences of personal jurisdiction which are actually constructive waivers and can be based wholly on failures to answer properly ordered discovery dedicated to this issue. Such discovery requests directed to this issue of personal jurisdiction in a section 337 action are

(Footnote continued to page 11)

Keung has, in writing, commented on the infringement allegations against it without objecting to personal jurisdiction or denying exportation (See Procedural History"), thereby admitting jurisdiction under applicable procedural rules.

Based on the foregoing, personal jurisdiction is found with respect to foreign respondents Siam Import, Teck Keung and Ideal. Personal jurisdiction is not found as to foreign respondents C.A.G., Chang Won, Kwang Il, Hogn Ter, Rol-Pak, Ta Sen and Lim Tai.

OPINION ON VIOLATION

While the notice of investigation defined the investigation's scope as it was instituted on April 22, 1987, the Commission's issuance of a temporary exclusion order in this investigation, the Commission's decisions not to review the initial determination terminating the investigation as to eight respondents and not to review initial determinations finding certain respondents in default have affected the scope. As complainant has represented, because complainant has been operating under the benefit of an exclusion order and that injury in the past has been de minimis, complainant's case is based on a tendency to injure and a finding that there has been past

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(Footnote continued from page 10)
discussed in Saxon and Newhouse, "Section 337 Jurisdiction and the Foregotten Remedy," 9 Campbell Law Review 45, 57-58 (1986). In accord with the recent Asahi opinion, those discovery requests should also focus on the issue of the direct role of the respondent and its agents in exportation of the articles at issue.

injury is not requested (PreH Tr. at 7). The staff agreed (PreH Tr. at 8). Also complainant and the staff are not asking that a finding be made that the settling respondents have committed an unfair act although it is requested that the settling respondents be considered on the economic issues. For example reference has been made to pricing practices of the settling respondents.[11/] (PreH Tr. at 16 to 19).

In addition certain of the respondents, i.e. C.A.G., Hogn Ter, Ideal, Insertion, Ka Shing, Lim Tai, Nina Plastic, Rol-Pak, Siam Import, Ta Sen, Teck Keung and Tracon, are in default. Accordingly, pursuant to Commission rule 210.25(c), the Commission shall issue relief against said respondents if the record developed by the administrative law judge establishes a prima facie case of, or a reason to believe there is, a violation of section 337.

I. Unfair Act

A. The '872 Patent

The investigation's scope, with respect to the '872 patent, concerns whether certain reclosable plastic bags and tubing that are manufactured abroad, would infringe process claims 1-5 of the '872 patent if the manufacturing process was practiced in the United States.

11/ See footnote 2 of the S Post at 42. The staff however has alleged that certain settling respondents have infringed the '120 trademark. See S Post at 23.

I. Validity and Enforceability

Complainant argues that the '872 patent is valid; that it was duly issued by the United States Patent and Trademark Office (Patent Office) after it had determined that the claimed invention was patentable; that on April 25, 1986, complainant filed a re-examination petition to bring certain prior art that it had become aware of to the attention of the Patent Office; that the re-examination proceeding concluded with the Patent Office reconfirming the patentability of the claims of the '872 patent and without any amendment to claims 1-5; that at the TEO hearing, the validity of the '872 patent was unsuccessfully challenged by certain of the settling respondents which serves further to reinforce the validity of the '872 patent; and that at the present time there is no active challenge as to the validity and enforceability of the '872 patent by any of the respondents and hence the '872 patent is presumed to be valid and enforceable pursuant to 35 U.S.C. 282 (C Post at 16, 17). It is also argued that the process taught by the '872 patent has been respected, since the issuance of the '872 patent eleven years ago, by the industry and there have been no known domestic infringers and that the '872 patent has been licensed to a major U. S. company and substantial royalties have been paid. It is argued that this respect by the industry supports the validity of the '872 patent (C Post at 17, 18).

The staff argues that, under the teachings of Lannom Manufacturing Co., Inc. v. U.S. International Trade Commission, 799 F. 2d 1572, 231 U.S.P.Q. 32, (Fed. Cir. 1986), the 35 U.S.C. 282 statutory presumption prevails where no party is challenging the validity of a patent in issue. The staff further argues that the Luca patent, involved in the Commission's September 1982 exclusion order and which was submitted to the Patent Office during the Patent

Office re-examination, is the closest prior art to the '872 patent because it relates to improvements in plastic extrusion methods using a blown film plastic extruder and auxilary cooling means at the locations of the rib and groove profiles to produce a tube having interlocking rib and groove profiles which tube is used to make one piece plastic bags. The staff distinguishes the invention of auxilary cooling in the Luca patent because it fails to teach the combination of directing the flow of coolant and adjusting the pressure of coolant against the heated profile to control both the cooling and shaping of the profile as taught by the '872 patent. On the issue of enforceability the staff argues that the evidence does not establish inequitable conduct because complainant's arguments regarding the patentability of claim 5 over the Luca patent during re-examination were not misleading despite the arguments of settled respondents at the TEO hearing (S Post at 4 to 7).

As the Federal Circuit in Lannom, 799 F. 2d at 1579, 231 U.S.P.Q. at 37, 38 stated, it is beyond cavil that a district court does not have the authority to invalidate a patent at its own initiative if validity is not challenged by a party, and Congress did not authorize the Commission in a section 337 investigation to redetermine patent validity when no defense of invalidity has been raised. In Lannom, while respondent Diamond Sports had initially pled a defense of invalidity, Diamond Sports entered into a settlement agreement with Lannom and withdrew from the investigation before the hearing. In Lannom the complainant, before the Court, argued the statutory requirement of 35 U.S.C. 282 that the defense of invalidity "shall be pleaded." After Diamond Sports withdrew the defense of invalidity was not raised in Lannom.

In this investigation while certain of the settling respondents had initially pled and/or argued defenses of invalidity and enforceability, those respondents have entered into a settlement agreement with complainant and said respondents, like Diamond Sports in Lannom, are no longer in the investigation. In addition, in the settlement agreement complainant discharged said respondents from any claim regarding any prior infringement of the '872 patent. The respondents still in the investigation did not appear at the hearing or submit prehearing or posthearing submissions and accordingly have not contested the validity and/or enforceability of the '872 patent at the hearing.[12/] Consequently in view of the 35 U.S.C. 282 statutory presumption and the failure of the respondents now in the investigation to raise a defense of invalidity, the administrative law judge finds that it has not been established that the '872 patent is invalid or unenforceable.[13/] See Certain Feathered Fur Coats Inv. No. 337-TA-260 (unreviewed ID, Order No. 15, June 10, 1987 (summary determination of patent validity granted against defaulted respondents).

12/ Respondent Ideal as well as settling respondents Lien Bin and Keron, through counsel, on May 26, 1987 did file a joint response to the complaint and notice of investigation. On May 29, 1987 counsel for respondent Ideal withdrew as its representative. In the response filed on May 26, respondent Ideal in "boiler plate" allegations challenged the validity and enforceability of the '872 patent. Ideal has not supplemented those allegations. As noted in the procedural history on December 24, 1987 Ideal was held in default and found to have waived its right to contest the allegations at issue in this investigation.

13/ In the TEO initial determination the administrative law judge held that certain settling respondents, who are not now in the investigation, had not shown that the '872 patent is invalid or unenforceable. The administrative law judge finds nothing in the record that would alter that holding. Hence, if the Commission should find the Lannom case inapplicable, the findings of the TEO initial determination as to validity and enforceability of the '872 patent have been included in this initial determination.

2. Infringement

As it is taught in the '872 patent, the claimed invention relates to improvements in forming the profiles of reclosable plastic bags so that the shape of the profiles can be more completely controlled at relatively high extrusion speeds and precise profile shapes obtained to interlock accurately and strongly with mating profiles (FF 33). In the formation of profiled sheets, with the improvements of extrusion techniques and profile and film designs, it is possible to form a very thin film of only a few mils thickness and to make the profile very small and yet obtain interlocking profiles which will join to each other with a strength that approaches or surpasses the strength of the film. To obtain of an efficient highly effective interlocking profile depends upon an accurate control of the profile shape which is hard to maintain at high extrusion speeds. The claimed invention of the '872 patent involves the discovery that an important factor in maintaining the shape of the profile is in controlling its cooling (FF 33).

According to the '872 patent a flat thin strip of film may be delivered traveling along a path and a freshly extruded profile positioned on the film to be bonded thereto by the heated plastic of the profile adhering to and solidifying with the film. The plastic of the profile being freshly extruded is relatively hot and must be cooled so that it will solidify for the subsequent interlocking of the profile film on a roll in a continuous operation. For this purpose a coolant jet mechanism is provided for directing a flow of coolant, preferably air, against the heated profile to remove heat therefrom. It has been discovered that this jet can control the shape of the

resultant profile on the film in that the profile, after being adhered to the film, is in the somewhat plastic formative stage. Hence the coolant jet can influence the shape of the profile by controlling the location where the coolant jet is directed and the direction at which the jet engages the profile as well as the pressure or velocity at which the jet engages the profile (FF 34).

The '872 patent teaches that a profile may have a jet supplied with a flow of coolant through a line controlled by a pressure control valve directed against the profile. By adjusting said valve the rate of flow of the coolant through the jet may be altered which will have an effect on the resultant shape of the profile. The pressure control arrangement may be employed alone (FF 38).

The '872 patent contains eight claims. Claims 1 to 5 in issue read:

> 1. In the method of making plastic film with shaped profiles on the surface comprising the steps of: extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile; and directing a flow of coolant onto the extruded profile of warm plastic and adjusting the direction of flow of coolant relative to the direction of movement of the profile for controlling the cooling rate and shape of the profile.
>
> 2. In the method of making a plastic film with shaped profiles on the surface in accordance with claim 1, wherein said direction is adjusted through an arc of 180 degrees.
>
> 3. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1, wherein the flow of coolant is adjusted in an arc extending in the direction of travel of the profile length.
>
> 4. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1, wherein the flow of coolant is adjusted in an arc

extending transversely of the direction of movement of the profile length.

5. In the method of making plastic film with shaped profiles on the surface comprising the steps of: extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;
and directing a flow of coolant against the heated profile and adjusting the pressure of coolant flow for controlling the cooling rate and shape of the profile.

(FF 31).

Complainant has the burden of proving prima facie that each of defaulting respondents C.A.G., Hogn Ter, Ideal, Insertion, Ka Shing, Lim Tai, Nina Plastic, Rol-Pak, Siam Import, Ta Sen, Teck Keung and Tracon infringe, and that non-defaulted respondents Chang Won and Kwang Il (who have not been active in the investigation) infringe one or more of the claims in issue. Envirotech Corp. v. Al George, Inc., 730 F. 2d 753, 221 U.S.P.Q. 473, 477 (Fed. Cir. 1984); Roberts Dairy Co. v. United States, 530 F. 2d 1342, 1357, 182 U.S.P.Q. 218, 255 (Ct. Cl. 1976); see Chisum Patents section 18.06, Vol. 4 (1982).

Complainant argues that each of the the manufacturer respondents Chang Won, Hogn Ter, Kwang Il, Lim-Tai, Rol-Pak, Siam Import, C.A.G., Ideal, Ta Sen, and Teck Keung infringes at least claims 1 and/or 5 and at least manufacturer respondents Chang Won, Hogn Ter, Kwang Il, Lim Tai, Rol-Pak and Siam Import infringe additional claims 2 to 4 (C Post at 18, 20)[14/] As to the remaining

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14/ Complainant refers to "Col. Ltd.". Complainant has not stated who "Col. Ltd." refers to. Complainant has referred to respondent C.A.G. as a
(Footnote continued to page 19)

domestic importer respondents Insertion, Ka Shing, Nina Plastics and Tracon, it is argued that since no discovery was provided by them, adverse inferences should be drawn to the effect that bags to be imported by those respondents are manufactured "pursuant to a process that infringes the '872 patent" (C Post at 21).[15/]

The staff argues that a birefringence test performed by complainant's expert Sieminski provides additional support, when coupled with complainant Nocek's information, for complainant's assertion of infringement of claim 1 by respondents C.A.G., Chang Won, Hogn Ter, Kwang Il, Rol-Pak and Siam Export and that given Ta Sen and Teck Keung's default and Ideal's failure to show cause why it should also not be found in default, Sieminski's positive birefringence test on each of those respondents' sample bags is sufficient to establish infringement of claim 1 by Ta Sen, Teck Keung and Ideal (S Post at 12, 13). The staff also argues that a Sieminski's positive "secondary" test on a Lim Tai bag, in combination with complainant Nocek's observations of extruders with adjustable air jets at the Lim Tai factory, are sufficient to establish infringement of claim 1 with regard to respondent Lim Tai. With respect to

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(Footnote continued from page 18)
manufacturer respondent (C Post at 20, 21). The administrative law judge can find no evidence that C.A.G. is a manufacturer respondent. Moreover complainant's proposed finding 116 states that C.A.G is an agent for Siam Import.

15/ Complainant's counsel has noted that in reviewing the TEO that came down from the Commission and also the TEO initial determination, only claim 1 was mentioned, that claims 1 and 5 are independent claims, and that he would like to emphasize that it is claim 1 and/or claim 5 that complainant is concerned with (PreH Tr. at 13).

respondent Ka Shing, the staff believes that the negative birefringence and "secondary" tests on the Ka Shing sample establish non-infringement by Ka Shing. The staff also argues that evidence submitted by Nocek supports infringement by nonparty Harbona (S Post at 10).

With respect to respondents Insertion, Nina Plastic and Tracon, the staff is not aware of any evidence of '872 patent infringement regarding those respondents (S Post at 15, 16, S Post R at 2, 3).[16/]

While the staff asserts that the Commission has recognized that infringement of a process patent can be established by evidentiary sanctions alone where infringement cannot be shown by inspection of the accused products, citing Certain Plastic Fasteners and Processes for the Manufacture Thereof, Inv. No. 337-TA-248, ID at 73 (1987) which cited Sealed Air Corp. v. U.S. International Trade Commission, supra, it argues that under Commission rule 210.25, it is incumbent upon complainant to establish a prima facie case and that in this investigation complainant has asserted that there is a test by which complainant can prove infringement from inspection of the accused products and yet with regard to Insertion, Nina Plastic and Tracon there are no samples in the record and no other evidence relating to the manufacturing process or the source of supply from which those respondents import bags from which infringement can be inferred (S Post at 15, 16).

16/ In the TEO initial determination at 29, it was found that complainant had established that there is a reason to believe that claim 1 of the '872 patent will be infringed, in the interim period, by respondents Chang Won, Hogn Ter, Kwang Il, Lim Tai, Rol-Pak, Siam Import and C.A.G. and also nonparty Harbona but that complainant had not so established a reason to believe as to respondents Ideal, Ta Sen, Teck Kong, Insertion, Ka Shing, Nina Plastic and Tracon.

On the infringement issue there is unrefuted testimony that during the period of August 25, 1986 to September 9, 1986, complainant's Nocek travelled throughout the Far East and surveyed the situation concerning the manufacture of reclosable plastic bags in Hong Kong, Taiwan, South Korea, Thailand, Malaysia and Singapore; that in his trip Nocek toured actual manufacturing facilities, took pictures of equipment being used, obtained samples of the product manufactured, was provided with some quoted prices for export to the United States and met with some equipment manufacturers and suppliers and was advised of their customers; that as to the foreign reclosable plastic bag manufacturers where Nocek was permitted to inspect the manufacturing lines, Nocek saw plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and using the flow of coolant by adjusting its pressure and/or direction to control the cooling rate and shape of the profiles; and that without exception, each of said manufacturers used a flow of coolant directed at the profiles to cool and shape the profiles (FF N 115).

In addition to Nocek's testimony for establishing infringement, complainant, as does the staff, relies on tests conducted by complainant's expert Mitchell A, Sieminski which complainant contends are determinative of whether a reclosable plastic bag has been manufactured under a claimed process in issue. Sieminski is a consultant with a specialty in examining materials in polarized light and interpreting the results therefrom (FF 176a). At the hearing he was qualified as an expert in the microscopy of polymers and birefringence (FF 176b).

Sieminski's test are based on the principles of birefringence. Birefringence relates to the property of a material to resolve light as it

travels through a substance into two component parts, each part of which travels in preferred directions in the material at different velocities with the component parts being both polarized in planes at right angles to one another. Because the component rays travel at different velocities, one ray is retarded behind the other. In polymeric materials the extent of retardation can be dependent on the orientation of the molecular components (i.e. on the parallel arrangement of the polymer molecules) and the thickness of the material through which the two component rays travel (FF 176c). Polymeric polyethylene, of which reclosable plastic bags are manufactured, will become birefringent when the cooling of the molten polymer is controlled (FF 176d, 176e). Birefringent polyethylene examined between polars in a 45-degree angle position will exhibit color effects due to its birefringent nature (FF 176g).

In an ideal situation, a single long-chain polymer molecule in a coiled state exhibits a random orientation as the molecule might appear in a molten state. In normal cooling (no localized cooling) there is a slight degree of extended orientation of a molecule affected. With an air jet (localized cooling) some of the molecules are in a coiled state but there is a greater degree of extended orientation due to drawing out of the polymer molecules when in a viscous melt (FF 176i). In producing reclosable plastic bags when an air jet is imposed on an area close to a profile there is produced a band of retardation colors close to the profile when the bags are examined in a polarized light at a 45 degree angle. The birefringence close to the profile is said to be increased because the localized cooling caused by the air jet reduces the viscosity of the polymer in that region and the subsequent drawing of the polymer results in a preferential alignment of the molecular structure

in that region which alignment is frozen as the polymeric material solidifies (176j, 1761). The increased extended orientation of the material observed between polars is said to show higher retardation colors and a somewhat greater thickness in the region of the application of the air jet as against values of retardation and thickness measured in the web (non-profile area) of the material (FF 176j, 1761). A higher retardation color has been seen as a blue band (FF 176t, 176u, 176bb, 176cc). In confirmation of the conclusion drawn for the higher retardation colors, the actual birefringence close to the profile may be calculated relative to other sections of a reclosable plastic bag using numerical values of retardation and of thickness in the two regions. The value of retardation divided by thickness calculated for the two regions is a measure of the relative birefringence for those regions as Sieminski testified. A higher birefringent value in the profile area than in the area away from the profile is an indication of localized cooling of the plastic melt in the profile area during the extrusion process resulting from the application of air jets (FF 176bb, 176cc). There is not a direct correlation between thickness and retardation values. Thus when an air jet is used close to a profile, one may get a value in the order of 240 nanometers in retardation. In an area away from the profile where no air jet is used, the retardation value may be 70. Hence there is a difference in order of about three and one half times. Yet the difference in thickness can be only a matter of one to two times (FF 176ii).

In Sieminski's presence, complainant conducted a number of different experiments on making tubes with and without the use of an air jet (a relatively narrow band of air impinging on the sample (FF 176p) and positioning the air jet at different points. The resultant tubes were

examined between polars, and thickness measurements across the tubes were made (FF 176f). Sieminski also conducted tests on certain of respondents' reclosable plastic bags and of other materials.

It has been noted that application for the '872 patent was filed in 1973 and issued in 1976 (FF 26). Tests for infringement based on the principles of birefringence are not disclosed in the '872 patent. While there is some testimony indicating that the tests are standard in the microscopy field (FF 176dd), these is no evidence that Sieminski's birefringent tests were recognized in 1973 when the '872 patent application was filed. Although not discussed by either complainant or the staff, there are cases to the effect that tests for determining infringement should be recognized by one skilled in the art at the date the application for the patent in issue was filed. See, Raybestos-Manhattan, Inc. v. Texon, Inc. 268 F. 2nd 839, 122 USPQ 302, 303 (1st Cir. 1959), Swift Chemical Co. v. Usamex Fertilizers, Inc., 207 USPQ 47, 56 (E.D. La. 1980), Surface Technology, Inc. v. ITC, 801 F. 2d 1336, 231 USPQ 192, 197 (Fed. Cir. 1986). There is however a physical phenomena occurring in the cooling process in issue (FF176i, 176j). In determining the existence or non-existence of physical phenomena, courts have under appropriate circumstances derived aid from any relevant technique, even one not developed until after the invention at issue. See, Helene Curtis Industries, Inc. v. Sales Affiliates, Inc. 233 F. 2d 148, 109 USPQ 159, 164 (2nd Cir. 1956). See also, Cosden Oil & Chemical Co. v. American Hoechst Corp. 543 F. Supp. 522, 214 USPQ 244, 250, 251 (D. Del. 1982), where the court held that: "[i]f the scope [of the claims of a patent] is determined in the context of the existing art, I perceive no advantage and considerable mischief in freezing measurement technology and disregarding new learning which can establish, almost beyond

preadventure, the precise characteristics of the accused substance. I do not believe the law so requires" (Footnotes omitted) 17/ The administrative law judge agrees with that court's rationale. There is no indication in the record that the use of the tests involving birefringence results in any widening of the infringement allegation. Rather it is found that the tests merely provide evidence of the use of the '872 process.

On the infringement issue the following is found as to specific respondents and nonrespondent Harbona.

Respondents C.A.G. and Siam Import

Complainant argues that C.A.G. and Siam Import infringes each of claims 1 to 5. The staff argues that they infringe only claim 1.

C.A.G. came to Nocek's attention because C.A.G. submitted an unsolicited quotation for ZIPLOC bags to one of complainant's customers, viz. KCl, Inc. C.A.G. is an agent for Siam Import (FF N 116) whose extrusion line Nocek observed and which operates as described in the preceding paragraph (FF N 115). Nocek on September 4, 1986 met with Mr. Chan Ma, who is Director of Production of Siam Import and toured the factory in Bangkok, Thailand. The factory was very modern and included new extruders for manufacturing tubing for reclosable plastic bags, each of which used adjustable air jets to control

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17/ In Cosden on the issue of infringement the judge concluded that a diene polybutadiene used by Cosden had a vinyl content of "not more than about 10%" and a cis content of "at least 25%" and that the Taktene used by Cosden had a cis content of about "95%" and a vinyl content of "not more than about 10%". It was argued that the tests of Wiles and Levy which the judge relied upon should be disregarded because their respective methods of measurement were allegedly not practiced when the invention in issue was conceived in 1958. In addition to rejecting the argument that new learning cannot be relied upon, the judge did not believe that the Wiles' technique differed materially from the varying techniques reflected in the literature in the late 50's and early 60's. Id.

the profile cooling and shape (FF N 131). Nocek saw plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and the flow of coolant was used by adjusting the flow's pressure and/or direction (FF N 115). Nocek took photographs and an air jet can be detected from the photographs above an extruder (FF N 131).

In addition to the observations of Nocek on September 4, 1986, Nocek obtained a sample of a reclosable bag manufactured by Siam Import (FF N 131). This bag was tested for infringement by complainant's expert Sieminski and produced positive results (FF 176ww).

Thus, based on Nocek's visit and Sieminski's tests, as called for by claim 1, it is found that manufacturer Siam Import and its agent C.A.G. (FF N 116) directs a flow of coolant onto the profiles of warm plastic and adjusts the direction of coolant relative to the direction of movement of the profiles for controlling rate and shape of the profiles.

Referring to claim 5 the staff argues that Nocek's report on his visit did not show that the air jets utilized by Siam Import for cooling the profiles are also used to adjust the pressure of the coolant for controlling the cooling rate and shape of the profile as called for by claim 5. In addition it is argued that complainant has asserted its birefringence test provides a method to prove the use or non-use of localized cooling along the profile region called for by claim 1 but not to prove whether an adjustment of pressure of coolant flow was used during the extrusion and forming process as required by claim 5 (S Post R at 3). Complainant argues that Nocek has testified that the foreign manufacturing processes he observed uses the flow

of coolant from the air jets by adjusting the flow's pressure and/or direction to control the shape of the profile and that Nocek's trip report refers to "adjustable air jets" and that, in addition to an adjustability indicated on a sketch, states that a valve was part of the air jet arrangement. It is also argued that Nocek makes reference to Siam Import's adjustable air jet and to photo exhibits which clearly show Siam Import's air jets adjustable in the horizontal and vertical directions (C Post SR at 2, 4).

Referring to FF N 115, 116, and N 131, the administrative law judge finds that, as called for in claim 5, Siam Import and its agent C.A.G. uses the flow of coolant by adjusting its pressure to control the shape of the profile.

Complainant argues that manufacturer respondent Siam Import and its agent C.A.G. infringe claims 2 to 4 of the '872 patent (C Post at 18). Claims 2 to 4 are each dependent on independent claim 1 (FF 31). However irrespective of a finding of infringement as to claims 1 and 5 complainant has the burden to establish a prima facie case that Siam Import and its agent C.A.G. infringe each of claims 2 to 4. See In the Matter of Certain Plastic Fasteners and Processes for the Manufacture Thereof Inv. No. 337-TA-248, Views of the Commission at 20, December 24, 1987.[18/]

Claim 2 specifies that the flow of coolant "is adjusted through an arc of 180 degrees." Claim 3 specifies that the flow of coolant "is adjusted in an arc extending in the direction of travel of the profile length." Claim 4

18/ For example the record establishes that complainant's Nocek observed manufacturing processes of certain of the respondents. Adverse inferences will not be made on limitations of the dependent claims if there is no indication that Nocek observed the limitations. Presumably if Nocek saw the limitations he would have so testified.

specifies that the flow of coolant "is adjusted in an arc extending transversely of the direction of movement of the profile length" (FF 31). In support of claims 2 to 4, Fig. 4 of the '872 patent shows that jets are mounted on a movable adjustment piece so that their angle can be altered in a direction transversely of the direction of travel of the profile. By shifting the jets in an arcuate path through 180 degrees relative to the profile, more or less heat will be removed from one side of the profile than the other in the initial cooling which will change the shape of the resultant profile. During operation, the position of the jets can be changed to obtain the optimum shape in the profile. Thus this shape may be changed to correct, for example, unequal size jaws on the female profile. Additionally, if at different speeds of extrusion, the plastic tends to flow so that the head or jaw of the male or female profile is smaller on one side than on the other side, then compensation can be made by adjusting the motion of the air jets (FF 37).

Nocek has testified that he saw "plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and using the flow of coolant by adjusting its pressure and/or direction to control the cooling rate and shape of the profiles" (FF N 115). Photographs do show an air jet (FF N 131). A sketch does show that the coolant flow can be adjusted in an arc in the direction of travel of the profile length (claim 3) and in an arc extending transversely of the direction of movement of the profile length (claim 4) (FF N 131). Thus as called for by claims 3 and 4 it is found that Siam Import and its agent C.A.G. adjust the coolant flow in an arc extending

in the direction of travel of the profile length and extending transversely of the direction of movement of the profile length. The administrative law judge finds nothing in the record to support a finding that Siam Import and its agent C.A.G. adjust the coolant flow through an arc of "180 degrees" called for by claim 2 (FF 31).

Summarizing the administrative law judge finds that complainant has established a prima facie case of infringement by Siam Import and its agent C.A.G. as to each of claims 1 and 3 to 5 but not as to claim 2.

Respondent Chang Won

Complainant argues that Chang Won infringes each of claims 1 to 5. The staff argues that Chang Won infringes only claim 1.

Nocek testified that on September 1, 1986 he met with Mr. S. C. Hong, Chang Won's Manager who escorted Nocek to the manufacturing plant which is located near Seoul, Korea. Nocek examined the extrusion line and was permitted to take photographs. An air jet adjacent to what appears to be cooling rings can be detected in the photographs (FF 120). As with Siam Import, Nocek testified that he saw plastic film in the form of tubing being directed on the extruded profiles while they were still in the warm plastic formative stage, that the flow of coolant was used by adjusting its pressure and/or direction to control the cooling rate and shape of the profiles and that Chang Wan used a flow of coolant directed at the profiles to cool and shape the profiles (FF N 115).

In addition to Nocek's visit, complainant obtained a sample of a bag produced by Chang Won's process and the bag tested positive according to Sieminski's test (FF 176u).

Based on Nocek's visit and Sieminski's tests, it is found, as found with Siam Import, that Chang Won manufactures plastic film with shaped profiles on the surface as called for by claims 1 and 5. While complainant argues that the flow adjustment of the respondents Nocek observed "is or is capable of being in an arc" (C Post SR at 5), the administrative law judge finds no evidence, as to Chang Won, to support the limitations of each of claims 2 to 4.

Summarizing, the administrative law judge finds that complainant has established a prima facie case of infringement by Chang Won as to claims 1 and 5 but not as to claims 2, 3 and 4.

Respondent Hogn Ter

Complainant argues that Hogn Ter infringes each of claims 1 to 5. The staff argue that Hogn Ter infringes only claim 1.

Nocek testified that on August 27, 1986 he met with Mr. Chi-Jen Yeh, the General Manager of Hogn Ter in Taipei, Taiwan. He was allowed to tour the Hogn Ter plant but not to take photographs. The plant included at least fifteen extruders with ten operating at the time. The extrusion lines included air jets that direct air onto the profiles. Nocek prepared a sketch immediately after his visit to Hogn Ter which shows the air jet arrangement used by Hogn Ter (FF N 122).

In addition to Nocek's visit, complainant obtained a sample of a bag produced by Hogn Ter's process and the bag tested positive according to Sieminski's test (FF 176u).

Based on Nocek's visit and Sieminski's tests, it is found, as found with Chang Won, that Hogn Ter manufactures plastic film with shaped profiles on the surface as called for by claims 1 and 5.

With respect to claims 2, 3 and 4, the sketch Nocek made does show that the flow of the coolant can be adjusted in an arc extending in the direction of travel of the profile length and also that the flow can be adjusted in an arc extending transversely of the direction of movement of the profile length. Also Nocek testified that the air nozzle can move in either the vertical or the horizontal direction (FF N 122). The sketch however is not found to show that the coolant flow can be adjusted through an arc of 180 degrees nor is there any evidence to that effect (FF 31, N 122).

Summarizing, the administrative law judge finds that complainant has established a prima facie case of infringement by Hogn Ter as to each of claims 1, 3 to 5 but not as to claim 2.

Respondents Ideal, Ta Sen and Teck Keung

Complainant argues that Ideal, Ta Sen and Teck Keung infringe at least claims 1 and/or 5. The staff argues that they infringe only claim 1.

Complainant argues that Sieminski tested sample reclosable plastic bags of Ideal, Ta Sen and Teck Keung, after the TEO hearing and found that they were manufactured in accordance with the '872 patent (C Post at 19).[19/]

Based on tests run by Sieminski on samples obtained from Ideal, Ta Sen and Teck Keung (FF N 124, 176gg, 176vv), the administrative law judge finds

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19/ In the TEO initial determination, the administrative law judge found that complainant had not established a reason to believe that Ideal, Ta Sen and Teck Keung infringe any claim of the '872 patent. Nocek did not visit those respondents and the administrative law judge found no evidence that bag manufacturers which Nocek did not visit actually purchased air jets from manufacturers of extrusion equipment which Nocek visited (TEO initial determination at 15, 16).

that complainant has established prima facie that each of those respondents infringes claim 1. However, the administrative law judge finds that the record does not establish prima facie that Ideal, Ta Sen or Teck Keung infringes claim 5. Complainant has not established that the positive results of Sieminski's tests can only result when the pressure of the coolant flow is adjusted. To the contrary, claim 1 of the '872 patent is not limited to pressure adjustment.

Summarizing, the administrative law judge finds that complainant has established a prima facie case of infringement by Ideal, Ta Sen and Teck Keung of claim 1 but not of claims 2 to 5.

Respondents Insertion, Ka Shing, Nina Plastic and Tracon

Complainant argues that since no discovery was provided (including samples that could be tested by the birefringence test) which would enable complainant to determine if domestic respondents Insertion, Ka Shing, Nina Plastics and Tracon were importing infringing bags, adverse inferences should be drawn that bags imported or to be imported by those respondents were or will be manufactured pursuant to "a process that infringes the '872 patent". The staff argues non infringement as to Ka Shing and no evidence of infringement as to Insertion, Nina Plastic and Tracon.

As to Ka Shing, complainant is asking that adverse inferences be made that Ka Shing infringes the '872 patent even though there is testimony by complainant's expert Sieminski that from testing, despite complainant's contention, Ka Shing does not infringe the '872 patent (FF 176jj, 176kk, 176ll, 176mm). There is nothing in the record that contradicts the

Sieminski's tests performed on the Ka Shing sample. Under such circumstances the requested adverse inference will not be made.[20/] The administrative law judge finds that complainant has not sustained its burden in establishing prima facie that Ka Shing infringes the '872 patent.

Referring to Insertion, Nina Plastic and Tracon, as this administrative law judge stated in Certain Nut Jewelry and Parts Thereof, Inv. No. 337-TA-229, (Order No. 66), there is precedent for the drawing of adverse inferences against respondents for failure to comply with an order compelling discovery. However the administrative law judge can find no fixed rule requiring or even allowing unsupported inferences when the matter is not inaccessible to the party involved. Moreover the Commission's practice has been to require a reasonable effort on the part of complainant and/or the Commission investigative attorney to produce substantial, reliable and probative evidence sufficient to establish a prima facie case of a violation by respondents. In the Matter of Food Slicers and Components Thereof Inv. No. 337-TA-76, USITC Pub. No. 1159, (Comm. Op. June 1981) at 5, 6 and cases therein cited. As stated by the Commission in Food Slicers, a complainant cannot merely rest on unsupported allegations, except where critical

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20/ In In the Matter of Certain Electric Slow Cookers (Inv. No. 337-TA-42 (Comm. Op. March 15, 1979) at 7 - 9, the Commission noted that, notwithstanding the failure of a respondent to participate, an affirmative order of the Commission may not issue except when the Commission determines that there is a violation of the statute and, citing 5 U.S.C. 556 (d), stated that a Commission determination must be supported by "reliable, probative, or substantive evidence." It was noted that there was then no evidence such as physical samples of an infringing electric cooker showing patent infringement by the respondents. In this investigation the record shows a Ka Shing bag which does not infringe the '872 patent.

information cannot be obtained after a reasonable effort. Id.

There is evidence put forth by complainant that respondents Nina Plastic, Insertion and Tracon have been involved in importing reclosable plastic bags to the United States (FF 134, 134a, N 218, N 223). However a reclosable plastic bag is not necessarily made by an '872 process. Thus the record indicates that a Ka Shing bag is not produced by a process that infringes the '872 patent (FF 176jj, 176kk, 17611, 176mm). In the TEO initial determination at 19 to 24, the administrative law judge found that there was not a reason to believe that claim 1 of the '872 patent would be infringed, in an interim period, by bags produced by Chung Kong Industrial Co., Ltd. who was then a respondent in the investigation.[21/] Other than attempted discovery on Insertion, and Tracon the record does not show any attempt by complainant, as complainant was successfully able to do as to Ka Shing, to obtain imported reclosable bags which Insertion, and Tracon have been involved with.[22/] As for Nina Plastic, complainant has seen a Nina Plastic bag (FF N 191). However the record does not show that the bag was never tested for infringence.

21/ In Certain Plastic Fasteners and Processes For The Manufacture Thereof Inv. No. 337-TA-248, (ID June 19, 1987) at 73, the administrative law judge did note that the Commission and the courts have recognized that evidentiary sanctions alone can prove infringement of a process patent because, unlike with product patents, process patent infringement generally cannot be shown by inspection of the accused products. The Commission in its views adopted this portion of the ID (Comm. Op. Dec. 23, 1987) at 45, 46 and did not alter the adverse inferences regarding infringement found by the administrative law judge. However, contrary to Plastic Fasteners, complainant has argued that there is evidence, and this administrative law judge has so found, by which it can be determined from testing of the product from a process that a process claim of the '872 patent is infringed.

22/ Commission regulations and practice state when pracitcable complainant

(Footnote continued to page 35)

Accordingly in light of the circumstances in this case patent adverse inferences that Nina Plastic, Insertion and Tracon infringe the '872 patent will not be made.[23/] Summarizing, the administrative law judge finds that complainant has not established a prima facie case of infringement by respondents Insertion, Nina Plastic and/or Tracon as to any of the claims in issue.[24/]

Respondent Kwang Il

Complainant argues that Kwang Il infringes each of claims 1 to 5. The staff argues that Kwang Il infringes only claim 1.

(Footnote continued from page 34)
shall make a showing of infringement through samples of respondents. See, Commission rule 210.20(a)(9)(vii)(samples should accompany complaint); Certain Electric Slow Cookers, Inv. No. 337-TA-42 (Comm. Opin. 1979); Certain Molded Golf Balls, USITC Pub. No. 897, Inv. No. 337-TA-35 (Comm. Opin. 1978) at 8-9.

23/ Complainant argues that Nocek testified that he visited every known manufacturer in Taiwan and Hong Kong of the equipment for extruding profile tubing and every one of such manufacturers admitted that its equipment was furnished with jets for for directing air at the profiles in accordance with the '872 patent and that such secondary evidence should be sufficient to show that the Far Eastern bags and tubing involved is manufactured pursuant to the '872 patent (C Post at 21). As the administrative law judge did in the TEO initial determination at 15, 16 the administrative law judge rejects this argument for establishing infringement. There is no evidence that the bag manufacturers which Nocek did not visit did actually purchase air jets from those manufacturers of extrusion equipment whom Nocek visited. No testimony was presented to the effect that all viable suppliers of extrusion equipment to the Far East were visited nor that extrusion equipment cannot be built be the reclosable bag manufacturers themselves. Moreover evidence submitted by complainant with respect to respondent Ka Shing, indicates that a Ka Shing bag can be made without practicing an '872 process in issue.

24/ A finding of no section 337 violation as to those respondents would not necessarily result in the absence of a section 337 violation in this investigation. See, Conclusions of Law of TEO initial determination.

Nocek testified that on September 1, 1986 he met with Mr. Lee, the President of Kwang Il, and Mr. Yoo, Kwang Il's Sales Chief, at Kwang Il's factory and observed its operation. At each extruder Nocek saw an air jet used to blow air onto the profile to control its shape. Nocek took a photograph which shows an air jet (FF 127).

In addition to Nocek's visit, complainant obtained a sample of a bag produced by Kwang Il's process and it tested positive according to Sieminski's tests (FF 176v).

Based on Nocek's visit and Sieminski's tests, complainant has established, as found with Chang Won, a prima facie case of infringement by Kwang Il of claims 1 and 5. While complainant argues that Kwang Il uses a flexible tube which by its very nature is flexible (C Post SR at 5) the administrative law judge does not find that a flexible tube supports findings that complainant has established prima facie that Kwang Il infringes claims 2, 3 or 4.

Respondent Lim Tai

Complainant argues that Lim Tai infringes claims 1 to 5 in issue. The staff argues that Lim Tai infringes only claim 1.

Nocek testified that on September 4, 1986 he met with Mr. Ti Kasen and toured the factory of Lim Tai located outside of Bangkok, Thailand. There were four Minigrip extruded and five other extruders for various types of film with a total of 17 single lane bag machines. Only six of the machines were designed to manufacture reclosable bags. On all four Minigrip extruders, air jets consisting of open-ended pipes attached by a valve to an air hose were

plainly in use. The end of the pipe was flattened by a hammer and the air stream was directed at both profiles. At the time of Nocek's visit, the company was said to be soon moving to a new, more modern location and planned to have about the same amount of equipment at the new location and will be moving its old equipment (FF 128). Nocek saw plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and the flow of coolant was used by adjusting the flow's pressure and/or direction (FF N 115).

In addition to Nocek's visit, complainant obtained a sample of a bag produced by the Lim Tai process which tested positive according to Sieminski's step wedge test (FF 128, 176w, 176x, 176y, 176z).

Based on Nocek's visit and Sieminski's tests, as found with Chang Won, the administrative law judge finds that a prima facie case of infringement by Lim Tai has been established with respect to claims 1 and 5.

Complainant argues that the use of a valve and the adjustable nature of the air jets support the finding of infringement of claims 2 to 4, that as with Siam Import there is no evidence which would indicate that Lim Tai does not practice the teaching of claims 2 to 4 and the existence of a valve and adjustable pipes is strong evidence of infringement (C Post SR at 5). While there is evidence of a detailed sketch relating to Siam Import, (FF N 131) no such sketch or comparable evidence is in the record for Lim Tai. While complainant argues that there is no evidence which would indicate that Lim Tai does not practice the teaching of claims 2 to 4, it is complainant who has the burden of establishing prima facie that Lim Tai infringes each of claims 2 to

4. Complainant has not shown that the existence of a valve and adjustable pipes necessarily would result in the practice of claims 2 to 4. To the contrary the '874 patent discloses various forms of the claimed invention (FF 38).

Summarizing, the administrative law judge finds that complainant has established a prima facie case of infringement by Lim Tai infringe of claims 1 and 5 but not of claims 2 to 4.

Respondent Rol-Pak

Complainant argues that Rol-Pak infringes each of claims 1 to 5. The staff argues that Rol-Pak infringes only claim 1.

Nocek testified that on September 8, 1986 he met with Rol-Pak personnel and toured Rol-Pak's plant in Kuala Lumpar, Malaysia. The plant contained a number of high-density bag extruders and converting machines. In addition it had five Minigrip extruders, each capable of extruding single tubing at approximately 22 feet per minute. All five of the extruders were equipped with single or double air jets positioned between the extrusion die and a first air ring to freeze zippers on bags. Each extruder then had a double set of air rings. The company had twelve bag machines capable of converting reclosable bags. On several of the machines there were used either two or three lanes of the same size tubing to create the same width bag (FF 129, 130). A plastic film in the form of tubing can be extruded wherein a flow of coolant is directed on the extruded profiles while they are still in the warm plastic formative stage and the flow of coolant can be be used by adjusting its pressure and/or direction to control the cooling rate and shape of the profiles (F N 115).

In addition to Nocek's visit, complainant obtained a sample of a bag produced by Rol-Pak's process and the bag tested positive according to Sieminski's tests (FF 176 ww).

Based on Nocek's visit and Sieminski's tests, complainant has established a prima facie case of infringement by Rol-Pak of claims 1 and 5. While complainant argues that a picture of the equipment used by Rol-Pak "clearly shows the use of an adjustable air jet" (C Post SR at 5) the administrative law judge does not find that the record, including the picture (FF 129), supports findings that complainant has established that dependent claims 2 to 4 are infringed by the Rol-Pak process.

Summarizing, the administrative law judge finds that complainant has established a prima facie case of infringement by Rol-Pak of claims 1 and 5 but not of claims 2 to 4.

Nonrespondent Harbona

The staff argues that Nocek's testimony along with the evidence gathered during Nocek's on-site inspection establishes that nonrespondent Harbona infringes claim 1 of the '872 patent (S Post at 10). Complainant at the prehearing conference agreed with the staff that Harbona infringes the '872 patent (PreH Tr. at 10, 11) and incorporates findings of the TEO initial determination relating to Harbona. See CPF 33, 81.

Nocek visited Harbona, Ltd., Hong Kong in August 1986. It has five operating extruders. All five had multiple air jets consisting of eight flexible pipes, each pair being controlled by a separate value. Each flexible

air jet was fully adjustable in both the vertical and horizontal directions and the air flow was adjustable (FF 136a). Nocek testified that he saw plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and the coolant flow as used by adjusting its pressure and/or direction to control the cooling sale and shape of the profiles (FF N 115).

The administrative law judge finds that the record does prima facie support a finding that nonrespondent Harbona infringes each of claims 1 and 5 of the '872 patent.

Summarizing, based on the foregoing, it is found that the record establishes prima facie that (1) respondents C.A.G., Siam Import and Hogn Ter infringe claim 1, and 3 to 5, (2) respondents Chang Won, Kwang Il, Lim Tai and Rol-Pak infringe claims 1 and 5, (3) respondents Ideal, Ta Sen and Teck Keung infringe claim 1, (4) nonrespondent Harbona infringes claims 1 and 5 and (5) respondents Insertion, Ka Shing, Nina Plastic and Tracon do not infringe the '872 patent. Findings as to infringement assumes importation by the respective respondent to the United States.

B. The '120 Trademark

At issue, as defined in the investigation's scope, is whether certain reclosable plastic bags and tubing manufactured abroad infringes the '120 trademark.

1. Validity

The '120 trademark is the subject of complainant's incontestable Reg. No. 946,120 for plastic bags on the Principal Register of the Patent Office (FF

177). Reg. No. 946,120 describes the mark as follows:

> The mark consists of a horizontal stripe adjacent the bag top lined for the color red. However, applicant makes no claim to any specific color apart from the mark as shown [FF 178]

The '120 trademark was first used by complainant's predecessor on zipper to be attached to film for reclosable bags in 1959, as indicated by the federal registration (FF 180). Complainant registered the '120 trademark on the Principal Register on October 31, 1972 (FF 179). The '120 trademark is in use and has been used since 1959 by complainant and its predecessor in interest (FF 181).

Complainant argues that the '120 trademark is both prima facie and incontestably valid under sections 33(a) and 33(b) of the Lanham Act, 15 U.S.C. 1115a and 115b. It argues that complainant has expended great sums of money in its promotion of products bearing the '120 trademark and that it enjoys extensive good will in the market place. Since there is presently no respondent in this investigation that has made a viable challenge to the validity and enforceability of the mark, complainant contends that the presumption of '120 trademark validity and enforceability is unchallenged (C Post at 21-22).

The staff argues that the '120 trademark is valid, reasoning that the incontestable federal registration of the mark is conclusive evidence of the exclusive right to use the mark and that there are only three grounds under the statute upon which the '120 trademark can be cancelled, viz., genericness, fraud in obtaining the registration, and abandonment (S Post at 16-18).

Relying on the Lannom case supra, this administrative law judge has found that, in view of the statutory presumption under 35 U.S.C. 282 and the failure

of the respondents to raise and present a defense of patent invalidity, the invalidity of the '872 patent has not been established. Although a federal trademark registration is in issue, the administrative law judge finds the rationale of Lannom equally applicable to a federal trademark registration. Thus a federal trademark registration holds a statutory presumption of validity upon issuance by the Patent Office under section 33 of the Lanham Act.[25/] In this investigation, as with the '872 patent, no respondent appeared at the hearing to contest the validity of the '120 trademark. Certain of the settling respondents had contested the validity, including functionality, of the '120 trademark at the TEO hearing. However the settling respondents are no longer in the investigation. Respondent Ideal, which initially alleged trademark invalidity, with "boiler plate" language in its response to the complaint and notice of investigation, has been found in default. Active participants, viz. the complainant and the staff, both contend that the '120 trademark is valid. Consequently, the administrative law judge finds that the '120 trademark under the authority of Lannom and in view of its statutory presumption of validity cannot be invalidated due to the procedural posture of

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25/ In Certain Woodworking Machines, Inv. No. 337-TA-174, USITC Publication 1979, (ID May 1979) at 24, the administrative law judge noted that a federal registration of a trademark gives rise to a rebuttable statutory presumption of ownership of the mark and, citing 4A Callman, Unfair Competition, Trademarks and Monopolies (4th ed. 1984) section 25.05 at 20, observed that federal registration provides "prima facie evidence of the validity of the registration, the registrant's ownership of the mark [and] of the registrant's exclusive right to use the mark." Citing 15 U.S.C. section 1064, that judge further stated that the use of the mark for five years after registration converts the rebuttable presumption of ownership into an incontestable right to use the mark. The '120 trademark is incontestible.

this investigation. See, McCarthy, Trademarks and Unfair Competition, section 32:43 (cum. supp. December 1987).[26/]

26/ As this administrative law judge has done with the '872 patent, should the Commission find Lannom inapplicable the factual findings of the TEO initial determination as to validity of the '120 trademark, including nonfunctionality, have been included in this initial determination.

The Commission in its determination not to review the initial determination did state that "some judicial decisions suggest that an incontestible trademark may not be challenged as de jure functional." It is assumed that the judicial decisions referred to, without citation in the Commission's notice, are Park 'N Fly, Inc. v. Dollar Park and Fly, Inc., 105 S. Ct. 658, 224 U.S.P.Q. 327 (1985) and its cited predecessors and progeny (as the complainant and staff both contend (TR. at 147-148)) because Park 'N Fly is the landmark decision of the Supreme Court on incontestability from federal registration. The Supreme Court in Park 'N Fly however expressly limited its decision to whether the defense of descriptiveness survives incontestability. The Court made no ruling that all other defenses, not incorporated by section 33(b), are preempted by incontestability.

The administrative law judge notes that, unlike the descriptiveness defense of section 2(e)(1) of the Lanham Act which was at issue in Park 'N Fly, the functionality defense uniquely does not have a specific basis in the statutory provisions in the Lanham Act but does have a longstanding basis in the common law and the constitution (Article I, section 8). See In re Deister Concentrator Co., Inc., 129 U.S.P.Q. 314 (CCPA 1961); In re Morton-Norwich Products Inc., 671 F.2d 1332, 213 U.S.P.Q. 9, 12 (CCPA 1982); Sears & Roebuck Co. v. Stiffel Co., 376 U.S. 225, 228-230 (1964). Congress did not separately make one statutory provision for the functionality defense, as it did with the descriptiveness defense and then selectively omit it from the incontestability defenses used to attack an uncontestable mark set out by section 33(b). Moreover since de jure functional matter is always incapable of trademark function, In re Pollak Steel, 314 F.2d 566, 136 U.S.P.Q. 651 (C.C.P.A. 1963), the functionality defense is uniquely unlike the defenses under sections 2(d)-(f), including descriptiveness.

The administrative law judge further notes that the Lanham Act and its legislative history demonstrate the Congressional policy against the improper extension of expired utility patent rights in a product. That policy is the original rationale behind the Supreme Court's articulation of the genericness and functionality defenses. See, 15 U.S.C. section 15 (4); Hearings Before the subcommittee on Trademarks of the House Committee on Patents, 77th Cong., 1st Sess. at 104-105 (1941); Kellog Co. v. National Biscuit Co., 305 U.S. 111 (1938) (term "shredded wheat" held generic and shape of cereal functional); Singer Manuf. Co. v. June Manuf. Co., 163 U.S. 169 (1896) (term "singer" held generic and copying of machines themselves unprotectable).

(Footnote continued to page 44)

2. Infringement

The basic test of trademark infringement is likelihood of confusion. McCarthy, Trademarks and Unfair Competition, § 23:1. Infringement occurs if use of a mark associated with a product is "likely to cause confusion or to cause mistake or to deceive" the public as to the source of that product. 15 U.S.C. § 1114. It is well established that the use of identical trademarks for identical goods sold in the same channels of trade will result in a likelihood of confusion, regardless of the strength or weakness of the marks or the degree of consumer care devoted to such a purchase. See In re Research & Trading Corp., 793 F.2d 1276, 230 U.S.P.Q. 49, 50. Mobil Oil Corp. v. Pegasus Petroleum Corp., 818 F.2d 254, 2 U.S.P.Q. 1677 (2nd Cir. 1987), McGregor-Doniger, Inc. v. Drizzle, Inc., 599 F.2d 1126, 202 U.S.P.Q. 81 (2nd Cir. 1979), American Manufacturing Co. of Texas v. Heald Machine Co., 385 F.2d 456, 155 U.S.P.Q. 515 (C.C.P.A. 1967). Additionally, complainant has "exclusive rights under the statute to use of the '120 trademark.

Complainant argues that the administrative law judge has already determined that respondents C.A.G., Chang Won, Hogn Ter, Ideal, Ka Shing,

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(Footnote continued from page 43)

The only decision on point concerning functionality and incontestability, Schwinn Bicycle Co. v. Murray Ohio Manuf. Co., 339 F. Supp. 973 172 U.S.P.Q. 14, (D. Tenn. 1971), aff'd., 470 F.2d 975, 176 U.S.P.Q. 161 (6th Cir. 1971), in general terms did refer to the position discredited by Park 'N Fly, that incontestability is only available defensively to prevent cancellation of a registration and is unavailable to preempt defenses in actions for infringement. However the result in Schwinn, has been cited with approval in the leading case on the legal functionality defense, viz. Morton-Norwich, 213 U.S.P.Q. at 16. Additionally, that Court stated:

> [T]he 1946 Act is premised on the idea that only non-functional configurations may be registrable thereunder. In re Shenango Ceramics Inc., 150 U.S.P.Q. 115, 119 (CCPA 1966).

Kwang Il, Nina Plastics, Rol-Pak, Siam, Ta Sen, in addition to non-respondent Harbona, use the trademark on reclosable plastic bags thereby constituting an infringement of complainant's '120 trademark. As to respondents Insertion, Lim Tai, Teck Keung and Tracon it is argued that since they have failed to provide any discovery (after being ordered to do so), as to their use of the '120 trademark, adverse inferences of infringement against those respondents should be drawn (C Post at 24, 25).

The staff argues that the record establishes that respondents Meditech, C.A.G., Polycraft, Chang Won, Euroweld, Gideons Plastic, Hogn Ter, Ideal Plastic, Ka Shing, Kwang Il, Lien Bin, Nina Plastic, Rol-Pak, Siam Import, Ta Sen, Keron and nonrespondent Harbona have infringed the '120 trademark. 27/

27/ The staff argues that settling respondents Meditech, Polycraft, Euroweld, Gideons Plastic, Lien Bin and Keron are included as infringers of the '120 trademark, since by terms of the settlement agreement with complainant, each of the settling respondents acknowledged the initial determination of the administrative law judge in the temporary relief phase of this investigation (settlement agreement, p. 6) and hence the staff assumes the settling respondents do not contest the TEO initial determination with respect to their infringement of the '120 trademark (S Post at 22). Complainant does not allege that the settling respondents infringe the '120 trademark.

Counsel for the settling respondents in the letter dated December 28, 1987 to the administrative law judge argued that since respondents have been terminated from the investigation on the basis of a settlement agreement, it would be neither just nor legally correct to render findings of fact or conclusions of law concerning matters which are no longer subject to contention with complainant.

Complainant's case concerns only a tendency to injure (PreH Tr. at 7). Pursuant to the settlement agreement, complainant discharged the settling respondents from any claims for infringement of the '120 trademark (settlement agreement p. 4). Also an intent of the settlement agreement is to provide a means for importation of reclosable plastic bags which do not infringe the '120 trademark and the agreement specifies that the U.S. Customs Service possesses the appropriate power to enforce the '120 trademark (settlement agreement pp. 6 to 8). Accordingly findings of fact and conclusions of law

(Footnote continued to page 46)

Based on the record the administrative law judge finds that complainant has prima facie established that respondents Siam Import and C.A.G. (FF N 131, N 191), Chang Won (FF 120, N 191), Hogn Ter (FF N 122, N 191), Ideal (FF N 191), Ka Shing (FF N 191), Kwang Il (FF 127, N 191), Nina Plastic (FF N 191), Rol-Pak (FF 129, N 191) and Ta Sen (FF N 191) as well as nonrespondent Harbona (FF N 262) infringe the '120 trademark.

As to remaining respondents Insertion, Lim Tai, Teck Keung and Tracon, on the issue of infringement, complainant relies on adverse inferences.

The staff opposed the adverse inference against Insertion and Tracon on the grounds that there is no supporting evidence in the record regarding their use or non-use of the '120 trademark mark and that complainant has not established reasonable efforts, apart from its service of discovery requests, to obtain evidence regarding their alleged use of the '120 trademark. With regard to Lim Tai and Teck Keung, the staff argues that there are samples of record, CPX-4 and SPX-10, which do not bear the '120 trademark (S Post R at 8-9).

For the reasons stated concerning adverse inferences regarding patent infringement, there is insufficient evidence concerning complainant's extra-discovery attempts to obtain samples and other evidence of trademark use by respondents Insertion and Tracon. Under the circumstances it will not be found that such evidence was fairly inaccessible to complainant. Hence the withholding of such evidence in discovery is not in itself sufficiently

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(Footnote continued from page 45)
relating to a tendency of settling respondents to infringe, which is now the thrust of complainant's case, are not made.

probative to justify an unsupported adverse inference of the alleged unfair act. Moreover, the sample from Insertion does not contain a color line and the requested adverse inference would be contrary to that evidence.

As to the requested inference against respondent Lim Tai, complainant made efforts to obtain evidence by touring their factory outside Bangkok and speaking with a representative from that company. It found that Lim Tai has color line extrusion equipment on 3 of its 4 reclosable bag extruders (FF N 277). There also is an incentive to use such a color line in U.S. imports due to the promotional investment in this mark by complainant and complainant's reputation. In addition there has been evidence of importer requests for such color line marked bags (FF 323). Hence the administrative law judge finds circumstantial indications of Lim Tai's use of the trademark. Such circumstantial evidence coupled with the probative significance of Lim Tai's complete withholding of discovery responses concerning its trademark use is found to justify an adverse inference of trademark infringement against Lim Tai. The sample bag obtained by Nocek from Lim Tai in the Far East does not detract from this evidence since this was not a sample obtained in the U.S. market and the record establishes that samples of bags with a color line can be easily obtained under the circumstances from Lim Tai's production.

As to Teck Keung, Nocek visited their offices in Hong Kong in an attempt to visit their plant, but was denied entry. However, complainant was contacted by Teck Keung requesting a license when that company imported over

700,000 bags to the United States but was refused entry (FF N 133). There is no showing that complainant could not have obtained evidence regarding color line use at that time from that company or from Customs officials. Complainant does not indicate whether the bags were refused entry on the basis of the ITC exclusion order alone, or on the basis of the registered color line mark which is recorded with the U.S. Customs Service. As it cannot be concluded that the requested information was fairly inaccessible to complainant the unsupported adverse inference of trademark infringement against Teck Keung will not be made. To the extent that there is no supporting evidence of trademark use, the sample submitted by Teck Keung without a color line conflicts with he requested inference.

Summarizing the administrative law judge finds that complainant has established prima facie that respondents C.A.G., Chang Won, Hogn Ter, Ideal, Ka Shing, Kwang Il, Nina Plastic, Rol-Pak, Siam Import, Lim Tai and Ta Sen as well as nonrespondent Harbona infringe the '120 trademark. He does not so find with respect to respondents Insertion, Tracon and Teck Keung. The findings as to infringement assumes importation by the respective respondent to the United States.

II. Importation and Sale

Complainant contends that importation of allegedly infringing reclosable plastic bags has been shown by respondents C.A.G., Nina Plastics, Siam, Hogn Ter, Tracon, Teck Keung, Ka Shing, and Insertion, and that adverse inferences of importation or exportation to the United States should be made for failure to provide discovery against defaulted respondents Chang Won, Ideal, Kwang Il, Lim Tai, Ta Sen and Rol-Pak (C Post at 30).

The staff argues that respondents Siam Import, C.A.G., Nina Plastic, Hogn Ter, Teck Keung, Ka Shing, Insertion and Tracon have imported reclosable plastic bags to the United States (S Post at 40). It argues that respondents Ideal, Ta Sen, Lim Tai, Kwang Il and Chang Won have indicated an interest to import reclosable plastic bags to the United States (S Post at 40).

Respondents Chang Won and Kwang Il

Complainant argues importation through adverse inferences.

While an order compelling discovery issued against Chang Won and Kwang Il (Order No. 27 which issued September 24, 1987), mailings made by the Dockets Section of the Office of the Secretary to those respondents at the addresses stated in the notice of investigation have consistently been returned as undeliverable. Returned unopened mailings have also been marked with the French word "parti" stamped on the envelope indicating that the addressee has moved (departed) and is no longer at that address. While there is evidence of record that complainant's Nocek visited the factories of those two respondents in the summer of 1986, (FF 120, 127), in view of the returned mailings and the lack of any other evidence as to their current address, the administrative law judge does not find that service, including discovery and orders relating to discovery, has been properly directed to these respondents. (See Order Nos. 27 of October 8, 1987, 46 of November 19, 1987 and 50 of November 25, 1987). Accordingly proposed adverse inferences of importation against Chang Won and Kwang Il will not be made (See, Order No. 62).

Respondents Siam Import, C.A.G., Nina Plastic, Hogn Ter, Teck Keung, Ka Shing, Insertion and Tracon

Direct evidence establishes importation to the United States by respondents Siam Import, C.A.G., Nina Plastic, Hogn Ter, Teck Keung, Ka Shing, Insertion and Tracon (FF 134, 134a, 216, 218-221, 223).

Respondent Rol-Pak

The administrative law judge finds an adverse inference of exportation of reclosable plastic bags to the United States against defaulted respondent Rol-Pak pursuant to Commission rules 210.25 and 210.36. See Order No. 62.

Complainant has made a good faith but unsuccessful attempt to obtain information concerning exportation to the United States by this respondents due to its failure to respond to discovery, (FF 223a-d). Significant secondary evidence supporting Rol-Pak's exportation of reclosable plastic bags to the United States consists of a sample reclosable plastic bag of record manufactured by Rol-Pak bearing printed labelling indicating that the bag was made in Malaysia as packaging for swimming caps marketed by a certain New York City company (FF 223b). Apart from such sample bags which is evidence of such products' presence in the U.S. market, more direct and detailed evidence of actual importation should be in the hands of respondent Rol-Pak which has ignored proper requests and orders to supply such evidence. The fact that Rol-Pak is not listed on U.S. Customs Service records in evidence detailing importations of reclosable plastic bags made in the last three years need not conflict with this inference, which is based on secondary evidence. The Customs records frequently only list the name of the domestic importer and often do not list the name of the manufacturer for each importation. See SPX-5.

Based on the foregoing an adverse inference of importation against

Rol-Pak has been made. See, Certain Nut Jewelry, 337-TA-229 (ID July 1986) at 25 and Order No. 66; Certain Amorphous Metal Alloys, Inv. No. 337-TA-143 (unreviewed ID May 1984) at finding 446 and Orders No. 19, 24, 32.

Respondents Ideal, Lim Tai and Ta Sen

As to remaining respondents Ideal, Lim Tai and Ta Sen who are in default there are no export samples in evidence[28/] During Nocek's summer 1986 survey of Far East manufacturers complainant's Nocek travelled to Taipei, Taiwan and met with representatives of Ideal and Ta Sen. While at this meeting said respondents indicated their desire to sell reclosable plastic bags to the U.S. as soon as possible, they refused to provide Nocek further information about their business (FF N 124). In addition Lim Tai has expressed a keen interest and intent to export reclosable bags to the United States (FF N 277). In view of the foregoing, coupled with the complete disregard of proper discovery orders by Ideal, Ta Sen and Lim Tai, the following adverse inferences of importation is made against said respondents:

> Since 1982 respondents Ideal, Ta Sen and Lim Tai have exported reclosable plastic bags to the United States.[29/]

Commission rule 210.25(c) expressly allows adverse inferences against a respondent in default as to those issues for which "complainant has made a good faith but unsuccessful effort to obtain evidence," and that such

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28/ The sample from Lim Tai of record was obtained by Nocek while visiting this foreign manufacturer, and so the sample is not evidence of exportation (FF N 128).

29/ No inference has been requested or is made concerning the extent of such exportation to the United States.

inferences on these issues may be considered in the determination of the existence of a prima facie violation under section 337. Under this rule an adverse inference is part of the record for determination of prima facie violation.

The administrative law judge finds that exportation in particular is fairly within the knowledge of an exporter concerning its own business with a domestic importer, rather than within the knowledge of a U.S. competitor of such importers such as complainant. Complainant's relative inaccessability to such information is more pronounced under the circumstances here where only future injury is alleged and the levels of past importation into the U.S. market have not been so large as to cause past injury. Importation or exportation of even sample quantities of articles is sufficient for subject matter jurisdiction "import or sale", so that even small quantity exports are sufficient. Certain Trolley Wheel Assemblies, Inv. No. 337-TA-161 (Comm. Opin. 1984). Complainant's inability to discover such exports of respondents Ideal, Ta Sen and Lim Tai on the market and to obtain samples specifically identified as products exported by those respondents does not fairly conflict with the inferences made, particularly where complainant has aggressively asserted its patent rights in a particular field against infringers and importers, where there has been a pending exclusion order, and where the products of the respondents are commodity products which are not distinctive in appearance or markings. Given complainant's relative inaccessability to such information and complainant's efforts to obtain such information, coupled with the failure of respondents Ideal, Ta Sen and Lim Tai to even give discovery answers specifically denying actual exportation to the U.S., it is

found that respondents' failure to supply such information on importation constitutes a probative admission that such information would establish importation subject matter jurisdiction adverse to their interests in this investigation. 30/

These inferences are consistent with the Commission decision in Certain Electric Slow Cookers, Inv. No. 337-TA-42 (Comm. Opin. 1979) at 7, in that complainant has shown ample efforts, both good faith and reasonable efforts, to obtain the requested information which is the subject of the adverse inferences. The inferences are further supported by the Court's following justification for the adverse inference in Sealed Air Corporation v. U.S. International Trade Commission, supra, 645 F.2d at 988, 209 U.S.P.Q. at 480 as to withheld evidence in control of a respondent:

> If the ITC were precluded from applying its "default" rule, when confronted with a foreign manufacturer's adamant refusal to participate, and refusal to provide indispensible evidence of noninfringement, the ITC's determination would be postponed indefinitely and the ITC would be deprived of the means to perform its functions under the statue, clearly frustrating the intent of Congress....
>
> ...The allegations in the complaint concerning Unipak's process, standing naked of answer by Unipak, in whose control the evidence of its process resides, are sufficient in themselves.

Based on the foregoing, the requested adverse inferences of importation by respondents Ideal, Lim Tai, and Ta Sen are granted. Complainant has established prima facie importation to the United States by respondents Ideal, Lim Tai, and Ta Sen.

30/ The fact that these foreign manufacturers are not listed on U.S. Customs Service records in evidence detailing importations of reclosable plastic bags made in the last three years does not conflict with this inference, since the records frequently only list the name of the domestic importer and often do not list the name of the manufacturer for each importation (SPX-5).

III. Domestic Industry

Complainant contends that an affected domestic industry practicing a claimed process of the '872 patent consists of the manufacture of reclosable plastic bags in the industrial products packaging industry, and that this excludes sales of Ziploc bags for the consumer market by Dow Chemical Co. (Dow) with which complainant does not compete (C Post at 25-26). It argues that consumer packaging products companies serve entirely different markets with entirely different marketing niches and demands and constitute two different industries. Complainant contends that it

makes tubing for industrial reclosable bags to be sold in the industrial market. Complainant also contends that there is a second domestic industry manufacturing and selling reclosable plastic bags and profile tubing bearing the color line trademark and that this industry is composed of Minigrip alone (C Post at 27).

The staff argues that there are two domestic industries--one industry under the '872 patent composed of both Dow who produces ZIPLOC, CHIPLOC and ZIP-PAK bags and complainant and another industry under the '120 trademark made up of complainant alone (S Post at 24-31).

Complainant's contention that a domestic industry is composed of only its own production under the '872 patent because of different competitive markets for the article produced by its licensee Dow under the '872 patent is contrary to long established precedent which requires a domestic industry in intellectual property investigations be defined by the domestic production related exploitation of the intellectual property by the complainant and its

licensees. Shaper Manuf. Co. v. U.S. International Trade Commission, 219 U.S.P.Q. 665 (Fed. Cir. 1983); Certain Methods for Extruding Plastic Tubing, 218 U.S.P.Q. 348 (Comm. Opin. 1982); Certain Reclosable Plastic Bags and Tubing, Inv. No. 337-TA-266 (ID August 1987) at 50; Certain Products with Gremlin Character Depictions, Inv. No. 337-TA-201 (Comm. Opin. 1986); Certain Soft Sculpture Dolls, Inv. No. 337-TA-231 (Comm. Opin. 1986). The Commission has recently stated that the approach that the domestic industry should be defined in view of the market for the imported products "has been thoroughly discredited," and that the "determination of domestic industry is not based on the imported products subject to investigation, but on an examination of the domestic exploitation of the patents at issue." Certain DRAMS, Inv. No. 337-TA-242 (Comm. Opin. September 1987) at 65-66, n. 151.

Dow's sales of ZIPLOC bags are proven to be part of the domestic industry, both by virtue of the statement of Dow's Hessenaur,[31/] and by the testimony concerning Sieminski's positive birefringence test of Ziploc bags (FF 176vv). Dow's Hessenaur states additionally that Dow uses the '872 patent

. Consequently, a domestic industry under the '872 patent must comprise both complainant's domestic production operations at Orangeburg, New York, as well as Dow's domestic production in (FF 224, 230). Only the reclosable bags and profiled tubing made and sold by

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31/ While the Dow statement does not detail claim readability on its process, in view of its royalty obligations to complainant for use of the '872 patented process (RX-181), Dow's statements concerning its use of the '872 process are credible as admissions against interest.

complainant also contains the '120 registered color line trademark (FF N 237). Dow's products do not contain a color line although Dow's total sales of reclosable plastic bags are of complainant's sales of reclosable plastic bags bearing the '120 registered color line trademark (FF 238).

Based on the foregoing the administrative law judge finds that there are two different, domestic industries; viz., one industry under the '872 patent, and another industry under the '120 trademark. It is recoginzed that a single domestic industry need not be one in which all the intellectual properties in issue are practiced in all the products at issue. Certain Garment Hangers, 337-TA-255 (Notice of Commission Decision Not to Review August 1987); Certain DRAMS, 337-TA-242 (Comm. Op. September 1987) at 62-65. However the administrative law judge finds that circumstances in this investigation warrants two domestic industries. Thus the '120 trademark is not used on the vast majority of sales made under the '872 patented process indicating the distinct difference in the exploitation of the two different intellectual properties. While there is some overlap in the use by complainant of the '120 trademark and '872 patent the administrative law judge does not find a "considerable" overlap which would warrant a finding that there is one single integrated domestic industry devoted to the domestic exploitation of these two different intellectural properties. Woodworking Machines, 337-TA-174 (Comm. Opin. 1987) at 37-41; Certain Reclosable Plastic Bags, 337-TA-22, 192 U.S.P.Q. 674 (Comm. Opin. 1977). As the '120 trademark is used and promoted to designate distinctively the origin of products from complainant, the administrative law judge finds that it could not properly apply to the different origin products of its patent licensee Dow and still retain its

significance as a trademark. See, 15 U.S.C. section 1127 ("related company", "abandonment"). Consequently, complainant's own domestic exploitation constitutes a different domestic industry under the '120 trademark. 32/33/

IV. Efficient and Economic Operation

In order to prevail under section 337, a complainant must establish that the domestic industry is efficiently and economically operated. The guidelines set forth by the Commission to assess whether a domestic industry is efficient and economically operated include: (1) use of modern equipment and manufacturing facilities; (2) investment in research and development; (3) profitability; (4) substantial expenditures in advertising, promotion, and development of consumer goodwill; (5) effective quality control programs; and

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32/ Complainant has no licensees under the '120 color line trademark. Purchasers of complainant's profiled tubing such as converters KCL and Millhiser have merely an "implied license" to use the color line only to the extent of using that tubing originating from complainant with the color line for its intended purpose, viz. converting it into reclosable plastic bags with a color line. See, Prestonettes v. Coty, 264 U.S. 359 (1924); Champion Spark Plug Co. v. Sanders, 331 U.S. 125 (1947). Such converters of color lined tubing into bags have no independent right thereby to put a color line on a product which does not originate from complainant. Complainant promotes the trademark as a sign that bags, or their components, originate from complainant (FF 201).

33/ In the TEO initial determination, the administrative law judge found that the record established the following two domestic industries: (1) complainant's facilities under the '872 patent with or without the '120 trademark and (2) complainant's facilities with the '120 trademark. He found the record inconclusive as to how Dow manufactures its tubing. The Commission in its notice not to review the TEO initial determination did not adopt the position of the TEO initial determination stating that it might be appropriate to find one domestic industry rather than two. The present record is distinguishable from the record supporting the TEO initial determination in that there is now evidence that Dow practices the '872 claimed invention.

(6) incentive compensation and fringe benefit programs for employees. See, e.g., Certain Methods for Extruding Plastic Tubing, 218 U.S.P.Q. 348 (Comm. Opin. 1982); Certain Coin Operated Audio Visual Games and Components Thereof, 216 U.S.P.Q. 1106 (Comm. Opin. 1982); Certain Slide Fasteners Stringers and Machines and Components Thereof, 216 U.S.P.Q. 907 (Comm. Opin. 1981).

Complainant's plant at Orangeburg, New York, operates 24 hours a day, thereby avoiding the costs and inefficiency to start up the extruders. The resin used in the plant is delivered by rail to the plant's own railroad siding, thus minimizing the cost of transportation. Machines are dedicated to , thereby maximizing the efficiency of their use (FF 241). have been installed on a number of extruders at Minigrip's Orangeburg facility to insure on the extruder lines. The plant is air-conditioned to improve extruder speeds and create a working environment that maximizes employee alertness and efficiency especially under summer conditions. Complainant's plant has its own machine shop which is using the latest technology to . There is an active research and development program to There are which permit the purchase of resin in efficient bulk quantities.

aid in the production of the products at issue. Complainant has an active research and development program to introduce new (FF 242). Complainant's economic performance from 1977 to the present has shown a steady increase, in terms of sales, profits, capacity, and capacity utilization (FF 243).

Complainant's sales per employee in tubing and bag production has increased from $ in 1982 to $ in 1987 (first quarter annualized).

The productivity of complainant's tubing and bag employees has increased since 1982, by measure of sales per employee, a basic measure of operating efficiency (FF 244). To provide enough manufacturing space and machinery to meet anticipated demand, complainant has increased its plant capacity on four different occasions. Complainant is now in the process of building a square foot plant in Sequin, Texas, which will start production in the first quarter of (FF 245). Complainant has a complete R&D facility that includes

It also has a system for designing and programming (FF 246). Complainant has an effective Quality Assurance Program, as well as fringe benefits and compensation programs for its employees (FF 247). Reclosable plastic bags and tubing have been a profitable product line for complainant (FF 248).

Dow produces reclosable plastic bags under the '872 patent at its facilities . There are modern plants employing a number of people (FF 248a). Dow's replacement costs of equipment is

. Dow exercises excellent quality control, has established considerable good will in the ZIPLOC franchise, and has excellent safety and fringe benefit programs for all of its employees (FF 248c). The Dow ZIPLOC Bag Procedure is well recognized in the consumer trade and large amounts are spent by Dow on advertising and promoting the ZIPLOC bag franchise (FF 248d). Dow (with its subsidiaries) is known as being a long established, highly reputable chemical company, as is evidenced by Dow's high financial ratings and as illustrated in Dow's annual report (FF 248e). Dow's product

line of reclosable plastic bags manufactured under the '872 patent accounts for annual sales of over $100 million in the consumer market (FF 248f).

Based on the foregoing, the administrative law judge finds that operations of complainant and Dow devoted to the manufacture, sale and distribution of reclosable plastic bags and profile tubing with and without the '120 trademark and according to the '872 patent are efficiently and economically operated.

V. Substantial Future Injury

Complainant contends that there exists a tendency to injure substantially its domestic production and sales of reclosable plastic bags posed by foreign manufacturers who enjoy a cost advantage in production, a substantial and overwhelming production capacity, and an intent and incentive to export reclosable plastic bags to the United States. According to complainant intent to export is indicated by the statements of respondents Hogn Ter, C.A.G., Chang Won, Ideal, Kwang Il, Lim Tai, Rol-Pak, Ta Sen, and non-party Harbona, and by the actual exports and imports of record. Complainant contends that the industrial market for reclosable plastic bags is readily penetrated as shown by the record concerning two now settled and terminated domestic respondents. Consequently, complainant argues that importation of cheap foreign reclosable bags will compel complainant itself to become an importer rather than domestic producer of bags due to foreign low wage competition, because price is the most important consideration in its industrial market. Complainant further contends that the importation of foreign made bags with a color line would destroy complainant's established good will in its exclusive '120 trademark (C Post at 29-34).

Complainant also argues that it would be particularly affected by the importation of foreign reclosable bags because sales in its industrial market are normally made in quantities of thousands to millions, as compared to the consumer market in which small unit quantities are sold to the public which is brand conscious. Additionally, complainant points out that price is the most important consideration in the stock bag industrial market, further indicating that foreign competition will be directed to this market to which the imports of record have been aimed. Complainant states that penetration of the consumer market will eventually take place, competing in both the private label and generic market, and probably in the branded segment of the market as well, with an adverse effect upon Dow. The drastic employment impact of foreign impacts, complainant argues, will be to lose immediately % of total complainant and Dow combined domestic employment (C Post at 31-34).

The staff argues that complainant and Dow which are participants in the patent-based domestic industry sell to different markets, viz. the industrial products packaging industry characterized by high quanitity per unit sales, and the consumer market consisting of groceries which sell bags in small quantities directly to consumers. According to the staff the imports of respondents are targeting the industrial market served by complainant, and not the consumer market served by Dow. The staff contends that the amount of the domestic industry threatened by the infringing imports is substantial. The staff point to factors which it contends are indicative of future injury to the affected market: substantial foreign capacity and ability to increase production to flood the market with infringing bags; an intent to export demonstrated by foreign manufacturer's statements to Mr. Nocek and the

"substantial" quantities already imported by both respondents and various non-parties, despite the exclusion order which has been in place; and capability to penetrate the U.S. market indicated by cost advantage, a price sensitive market, large quantities imported by industrial customers, and the ability of importers to establish a distribution network and undersell the domestic market by a wide margin (S Post at 34-41).

As to the domestic industry under the '120 trademark, the staff argues that the injurious market circumstances relating to the patent based industry also apply, noting that application of a color line is a simple matter available to virtually any manufacturer of reclosable bags, and that more respondents have infringes the trademark and trade on complainant's good will than infringe the '872 patent (S Post at 43-44).

Tendency to injure a domestic industry under section 337 requires a showing of particular factual circumstances from which probable future injury can reasonably be inferred. Corning Glass v. U.S. International Trade Commission, 779 F.2d 1559, 230 U.S.P.Q. 822, 828 (Fed. Cir. 1986). Circumstances relevant to a determination of future injury include foreign production cost advantage and excess production capacity, ability to undersell the domestic industry and the intent and ability to export and penetrate the U.S. market. Certain Methods for Extruding Plastic Tubing, 218 U.S.P.Q. 348 (Comm. Opin. 1982). Although the degree of injury required by such a showing is lower in investigations such as this one, which involves infringement of exclusive intellectual property rights, nevertheless the injury indicated must be shown to both substantial in degree and to occur as a result of the infringing imports. Corning Glass Works, supra, at 829. A determination of

injury is dependent on the particular facts of the investigation. Fischer & Porter Co. v. U.S. International Trade Commission, 4 U.S.P.Q.2d 1700 (Fed. Cir. 1987). Where past injury from infringing imports is not shown, proof of future injury must indicate a future increase in imports sufficient to reasonably support a finding of substantial injury, or other proof of probable future change in circumstances, an indication that certain merely possible changes could result in injury. Id., at 1705. Injury must generally be shown by a preponderance of probative evidence of sufficient quality and quantity. Id., at 1704. As to the defaulted respondents, a prima facie showing is required. The substantial injury posed must be as a result of the infringing imports, rather than wholly caused by non-infringing imported or domestically made competitive products. Certain Drill Point Screws, USITC Pub. No. 1365 at 8 (Comm. Opin. 1982); Vertical Milling Machines, 223 U.S.P.Q. 332 (Comm. 1984); Certain Convertible Rowing Exercisers, Inv. No. 337-TA-212 (unreviewed portion of ID 1985); Certain Unitary Electromagnetic Flowmeters, USITC Pub. No. 1924 (Comm. Opin. 1986), aff'd. sub nom., Fischer & Porter v. U.S. International Trade Commission, supra.

While a determination of the scope of the domestic industry is not delimited by market conditions, for purposes of the determination of injury the scope for consideration may be limited to that market in which the imports at issue compete with the domestic industry. Certain Soft Sculpture Dolls Inv. No. 337-TA-231 at 103-104, 117 (Comm. Op. 1986) (injury found although imports did not compete with larger and high priced Original Appalachian Artwork dolls which were part of the domestic industry but where imports did compete with and cause injury to Coleco Cabbage Patch dolls also a part of the domestic industry).

A. Injury to the Domestic Industry Under the '872 Patent

With respect to the domestic industry that is defined by domestic exploitation of the '872 patent, the administrative law judge has found that there has been infringement of that patent under section 337 in the importation of reclosable plastic bags by the following eight respondents: Hogn Ter, Ideal, Rol-Pak, Siam Import, C.A.G., Ta Sen, Teck Keung and Lim Tai. Importation of infringing reclosable plastic bags is also shown by non-respondent Harbona. (FF 269-270).

Substantial production capacity for reclosable plastic bags as well as the ability to expand production of reclosable plastic bags is shown as to said infringers. Hogn Ter has only ten of fifteen extruders active, with the ability to put five more on line (FF N 255). Harbona has five extruders and nine bag making machines, and it represented to complainant's Nocek that it has the capacity to produce 1-2 container loads of bags per month for export to the U.S., with one container containing 13.6 million bags (FF N 261). Siam Import has 9 extruders and 20 bag converting machines currently producing 300 million bags for export annually, and it has confirmed its ability to increase exports and production by 75 million bags to Nocek (FF 279, 279a). Rol-Pak has five extruders and 12 bag making machines, and it has confirmed that it has available one container of reclosable plastic bags available every two months for export to the U.S. (FF N 278). Teck Keung's own statement to the Commission indicates that it has the capacity to ship 89 million reclosable bags to the U.S. (FF 290b). The record establishes that Lim Tai has four extruders for reclosable plastic bags using the '872 process.

The domestic reclosable plastic bags industry has been protected by the exclusion order imposed by the Commission in an earlier investigation, as

well as the temporary exclusion order which has been entered in this investigation. The expiration of the '110 exclusion order on December 1, 1987 and the expiration of the temporary exclusion order in this investigation supports the probability of a future increase in import levels sufficient to cause future injury in this investigation, absent the relief requested.

The capacity of respondent foreign manufactures Chang Won and Kwang Il, which are users of the patented process in their foreign manufacturer of reclosable plastic bags, to produce and export is found to be relevant to the determination of tendency for future injury due to their intent to export to the United States (FF N 271, N 276, N 277) though there is insufficient evidence to conclude that they specifically have actually exported such product to the United States or that there is imminent importation such as by agreements for export sale to the United States. See Certain Combination Door Locks, Inv. No. 337-TA-45 (Comm. Op. 1979) at 11.[34/] Kwang Il has four extruders producing 86 million bags a year, and Chang Won produces 30 million bags annually (FF N 271, N 276, N 277). The earlier investigation Certain Methods for Extruding Plastic Tubing, Inv. No. 337-TA-110, 218 U.S.P.Q. 348, 354 (Comm. Opin. 1982), in which complainant failed to show substantial injury but met the tendency burden establishes the relevancy of such foreign capacity even where specific exportation had not been shown as to each foreign manufacturer considered.

Intent and ability of respondents such as Lim Tai, Ta Sen, Chang Won and Kwang Il to direct their capacity toward penetrating the U.S. market are confirmed by the past importations made despite the exclusion order which has

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34/ It is recognized that the present locations of Kwang Il and Chang Won are in doubt. However in view of the in rem nature of a section 337 invesitgation, said respondents are found relevant in this injury analysis.

been in effect (FF 305a), the statements of the proven infringing parties confirming this intent and their ability to export to complainant's Nocek (FF 258a, 279a), similar statements from other Far Eastern manufacturers (FF 271, N 272, N 276, N 277) that indicate a general belief by such manufacturers in the feasibility of such exports and that a ready market for such exports awaits them in the United States and price quotations for such imports (FF 258a, N 280). The ability to export to the United States is further shown by the price sensitivity of reclosable bag sales (FF 249a), the degree of substantial underselling by foreign manufacturers in margins ranging from % (FF N 257, 258a, N 261, 278a, N 310, 310a), and the underselling by domestic importers and distributors of imported reclosable bags (FF 290a, N 311, 320a).

Future substantial market penentration by the subject imports is evidenced by the "tremendous cost advantage" the foreign manufacturers enjoy as compared to (FF 249a), and the underselling of both such manufacturers and domestic importers. Moreover the industrial packaging market is also populated by domestic distributors who have imported reclosable plastic bags from foreign supply (FF 323).

(FF 249a). As the importation which has occurred has been of reclosable bags suitable for sale in the industrial market (FF 290c, 297, 307, 321a, N 325), there is a substantial likelihood that total employment would substantially diminish through the effect of imports.

The staff contends that the most significant production capacity and

threat of injury to complainant's industrial bag market is posed by infringing imports rather than by domestic suppliers of industrial bags, other than complaiant and Dow, and non-infringing imports. The administrative law judge agrees.

Moreover there is no indication that other domestic firms will enjoy the favorable cost advantages of such importers. While complainant also anticipates some imports of reclosable bags which may not infringe the '872 patent, such imports would also not enjoy the cost advantages posed by the patented process and are expected to involve relatively small shipments (FF N 327, N 328). The record supports this conclusion by establishing that the '872 process in issue is used in profiled tubing extrusion equipment sold in the Far East (FF N295). Moreover any evidence of possible levels of domestic production other than by complainant and Dow and of non-infringing imports is too tenuous to be probative and to detract from causation (FF N 328).

Based on the foregoing, the administrative law judge finds that there is a tendency to injure the domestic industry under the '872 patent by the infringing imports.

B. Injury to the Domestic Industry Under the '120 Trademark

As to the domestic industry defined by the '120 trademark, the administrative law judge has found trademark infringement in imported

reclosable plastic bags by respondents Hogn Ter, Ideal, Rol-Pak, Siam Import and C.A.G., Ta Sen, Lim Tai, Ka Shing, and Nina Plastic. The same factors above noted as to the domestic industry under the '872 patent also apply to establish injury to the affected domestic trademark based industry. Respondents Hogn Ter, Rol-Pak, and Siam Import all have substantial manufacturing capacity, and the ability to increase production. They undersell complainant, have a large cost advantage, have the intent and ability to import. In addition domestic importers Nina Plastic and Ka Shing which have made importations despite the exclusion order and Custom's recordation of the '120 trademark (FF N 290, 290a, N 291).

Other manufacturers as to whom there has been no proof of exporting infringing bags to the United States, viz., Chang Won and Kwang Il, nevertheless presently make and have the capacity to make reclosable bags with an infringing color line. (FF 271, N 272, N 273). Application of a color line is easily done with widely available color line extruder attachments on machinery sold in the Far East (FF 211, 295, 321). From complainant's promotion of the color line (FF 201), evidence of express customer orders of such lined bags from importers (FF 207), importers' own production of bags with a color line, and importers proven desire to export bags to the United States, as indicated above, the capacity of Chang Won and Kwang Il is relevant to the future injury determination and the substantial capacity involved.

Based on the foregoing, the administrative law judge finds that there is a tendecy to injure the domestic industry producing reclosable bags and tubing under the '120 trademark by the the infringing imports.

FINDINGS OF FACT*

I. Jurisdiction

1. The Commission has subject matter jurisdiction and in rem jurisdiction.

1a. Service of the complaint and notice of investigation was made by registered mail on each of the respondents now in the investigaion (ALJ Ex. 1).

N 2. The Commission has in personam jurisdiction over respondents Siam Import, Insertion, Ka Shing, Nina Plastic, Tracon, Ideal and Teck Keung.

N 3. Receipt of the complaint and notice of investigation, as seen by return receipt cards, is shown by the following respondents: Insertion, Teck Keung, Ka Shing, Nina Plastic, Siam Import and Tracon (ALJ Ex. 2).

4. (Deleted).

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* The same numbering system is used for findings identical to findings that formed a portion of the TEO initial determination. Where findings of that initial determination have been modified an "N" has been inserted before the number. If a finding of the TEO initial determination is not relied upon, then the finding is omitted and the word "(Deleted)" is used. For example in this determination there is no finding 4.

The same section headings for the findings are used in this determination as was used in the TEO initial determination. An alphabetical sequence with the last number of the respective section of the TEO initial determination is used for any additional findings of each section. For example the two new findings in Section II are identified as "25a" and "25b".

Certain adverses inferences have been made. See Order No. 62. While they are cited in the Opinion On Violation section, they are not duplicated in the findings.

II. Parties and Products In Issue

Complainant

5. Complainant Minigrip, Inc. (Minigrip) is a Delaware corporation with a manufacturing facility in Orangeburg, New York for manufacturing profile tubing and reclosable plastic bags therefrom which bags and tubing are the products in issue in this investigation (CX-180 at 4, 5, 15; CX-1 at 3).

Respondents

6. Respondent C.A.G. located at 60 1B Hillview House, Jalan Remaja, Singapore 2366 (CX-1 at 11; Nocek CX-179, Exh. A at 3).

N 7. Respondent Chang Won was stated in the Notice of Investigation to be located at Roon 301 Korean Express Bldg., 36-7, Hannam-Dong, Yongsan-Ku, Seoul, R.O. Korea. Its actual address is unknown (See Procedural History).

N 8. Settling respondent Chung Kong is located at Wah Shun Ind. Bldg., Nlk B., 2/F, 4 Cho Yuen Street, Yau Tong Bay, Kowloon, Hong Kong (CX-1 at 12; Nocek CX-179, Exh. A at 4; Order No. 49, Settlement Agreement).

N 9. Settling respondent Euroweld is located at 10 Throckmorton Street, Eatontown, New Jersey (Order No. 49, Settlement Agreement.

N 10. Settling respondent Gideons is located at No. 22, Lane 59, Yi Eng North St., Tou Liu, Taiwan (CX-1 at 12; Nocek CX-179, Exh. A at 8).

11. Respondent Hong Ter is located at No. 12 Lane 122 Street Chiang Nan, Village New HWU, Taipei, Taiwan (CX-1 at 12; Nocek CX-179, Exh. A at 6).

12. Respondent Ideal located at 81, Lane 59, Ha Mi St., Taipei, Taiwan (CX-1 at 12; Nocek CX-179, Exh. A at 5-6).

13. Respondent Insertion is located at 132 West 24th Street, New York, New York 10011 (CX-1 at 13; Nocek CX-179, Exh. A at 9).

14. Respondent Ka Shing is located at 150 S. 4th Avenue, Mount Vernon, New York (CX-1 at 13; Nocek CX-179, Exh. A at 9).

N 15. Respondent Kwang Il was stated in the Notice of Investigation to be located at Rm. #301 Korean Express Bldg., 36-7, Hannam-Dong, Yongsan-Ku, Seoul, R.O. Korea. Its actual address is unknown (See Procedural History)

16. Respondent Lim Tai is located at 63-65 Mahaputaram Rd. (Wat Takheim), Bangkok, Thailand (CX-1 at 12; Nocek CX-179, Exh. A at 10).

N 17. Settling respondent Lien Bin is located at No. 1, Lane 49, Kuo Ching Road, Pan Chiao City, Taipei, Taiwan, R.O.C (CX-1 at 12; Nocek CX-179, Exh. A at 5-6).

N 18. Settling respondent Meditech is a Colorado Corporation with its principal place of business at 15701 E. 1st Avenue, Suite 115, Aurora, Colorado 80011 (Order No. 49, Settlement Agreement).

19. Respondent Nina Plastic located at 1936 Premier Row, Orlando Central Park, Orlando, Florida 32809-6282 (CX-1 at 13; Nocek CX-179, Exh. A at 9).

N 20. Settling respondent Polycraft is a California Corporation with its principal place of business at 2727 Thompson Creek Road, Pomona, California 91767 (CX-1 at 13; Nocek CX-179, Exh. A at 9; RX-40 at 1).

21. Respondent Rol-Pak is located at Chin They Sdn Bhd, 5th Floor, Plaza Petaling, 65-67 Jalan Petaling, 50000 Kuala Lumpur, Malaysia (CX-1 at 12; Nocek CX-179, Exh. A at 7).

22. Respondent Siam Import is located at 26/377 Eakachai Road, Bangbon, Bangkhuntien, Bangkok, 10150 Thailand (CX-1 at 12; Nocek CX-179, Exh. A at 7-8).

23. Respondent Ta Sen is located at 315-2 Chang Chun Road, Taipei, Taiwan (CX-1 at 13; Nocek CX-179, Exh. A at 5-6).

24. Respondent Teck Keung is located at 516, L.C.H. Bang Bldg., 4/Fl., 593-601 Nathan Road, Kowloon, Hong Kong (CX-1 at 13; Nocek CX-179, Exh. A at 8).

25. Respondent Tracon is located at 1 Huntington Quadrangle, Suite 1C-01, Melville, New York 11747 (CX-1 at 13; CX-179, Exh. A at 10).

25a. Settling respondent Keron is located at Room 4, 5th Floor, No. 177 Ho Ping East Road, Sec. 1, Taipei, Taiwan, R.O.C. (Order No. 49, Settlement Agreement).

25b. Settling respondent Daewang is located at Namseoul P.O. Box 107, Seoul, Korea (Order No. 49, Settlement Agreement)

III. The '872 Patent

26. On March 23, 1976, the '872 patent titled "Making Plastic Film With Profiles and Opening Means For Bags" issued to Takashi Noguchi on an application filed December 26, 1973 (RX-3).

27. On May 16, 1977 an assignment of the '872 patent to Kakushiki Kaisha Seisan Nippon Sha (Seisan) was recorded in the U.S. Patent Office (CX-1 Exh. B).

28. Minigrip became the exclusive U.S. licensee of Seisan under their basic technology in January 1963. In 1971 Minigrip and Seisan entered into a supplemental agreement by which improvements the Seisan had made in the basic technology, including the improvement of the '872 patent, were also licensed to Minigrip (CX-1 at 5, para. 7).

29. In February 1984, the '872 patent was assigned to Minigrip and the supplemental license was terminated. At the present time there is no longer any relationship between Minigrip and Seisan nor is there any relationship between Minigrip and the inventor of the '872 patent (CX-1 at 5, para. 7).

30. Complainant Minigrip Inc. is the owner, by assignment, of the entire right, title and interest on and to the '872 patent (CX-1, Exhibits A & B).

N 31. The '872 patent contains eight claims. Claims 1 to 5 in issue, read:

> 1. In the method of making plastic film with shaped profiles on the surface comprising the steps of: extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;
> and directing a flow of coolant onto the extruded profile of warm plastic and adjusting the direction of flow of coolant relative to the direction of movement of the profile for controlling the cooling rate and shape of the profile.
>
> 2. In the method of making a plastic film with shaped profiles on the surface in accordance with claim 1, wherein said direction is adjusted through an arc of 180 degrees.
>
> 3. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1, wherein the flow of coolant is adjusted in an arc extending in the direction of travel of the profile length.
>
> 4. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1, wherein the flow of coolant is adjusted in an arc extending transversely of the direction of movement of the profile length.
>
> 5. In the method of making plastic film with shaped profiles on the surface comprising the steps of: extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;
> and directing a flow of coolant against the heated profile and adjusting the pressure of coolant flow for controlling the cooling rate and shape of the profile.

(RX-3, col. 4,.5)

32. The '872 patent is to an invention which relates to improvements in plastic extrusion equipment and methods for forming film with shaped

profiles on the surface where such a film is eventually used in making reclosable bags or similar products (RX-3, col. 1 at 10-15).

33. The patentee teaches more particularly that:

> the invention relates to improvements in forming the profiles such that the shape can be more completely controlled at relatively high extrusion speeds so that a precise shape can be maintained to accurately and strongly interlock with another mating profile. One type of film having profiles on the surface is formed by supplying a continuous sheet of film and simultaneously extruding a profile which is laid on the film while hot so that it integrally attaches itself to the film to form a complete profile sheet. Mechanisms and processes for forming such sheets are shown in the cooling applications of Takashi Noguchi , U.S. Ser. No. 178,086, filed Sept. 7, 1971 and U.S. Ser. No. 178,087, filed Sept. 7, 1971. It will be understood that the features of the invention find advantage in forming profiles by other methods and other mechanisms, but the invention will be primarily described in connection with an environment such as that shown in the above referred to copending applications, the disclosures of which are embodied herein by reference. The features described herein may be employed, for example, in an extrusion arrangement wherein the profile is not formed separately and applied to a film while hot, but wherein the profile and film are extruded simultaneously out of a single die opening. It is also contemplated that the features of the invention may be employed in an arrangement wherein the film and profile are extruded separately, but substantially immediately joined to each other.
>
> In the formation of profile sheets with the improvements of extrusion techniques and profile and film designs, it has become possible to form a very thin film of only a few mils of thickness and to make the profile very small and yet obtain interlocking profiles which will join to each other with a strength that approaches or surpasses the strength of the film. To obtain an efficient highly effective interlocking profile depends upon the accuracy thereof and this accuracy is hard to maintain at high extrusion speeds. It has been discovered that an important factor in maintaining the shape of the profile is in controlling the cooling thereof.

(RX-3, col. 1, lines 15-56)

34. In FIG. 1 of the '872 patent a flat thin strip of film is delivered traveling along a path and a freshly extruded profile is positioned

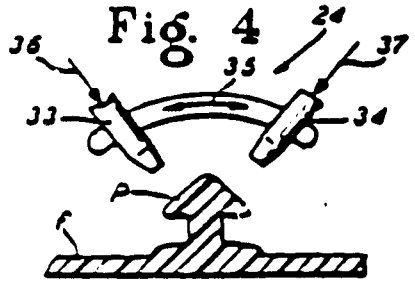
on the film to be bonded thereto by the heated plastic of the profile adhering to and solidifying with the film. The film sheet is preferably heated such as by passing over a heated roll on that the profile will more readily adhere to the surface and form a firm bond. The plastic of the profile being freshly extruded is relatively hot and must be cooled so that it will solidify for subsequent interlocking or for rolling up the profile film on a roll in a continuous operation. For this purpose a coolant jet mechanism is provided for directing a flow of coolant, preferably air, against the heated profile to remove heat therefrom. The coolant jet may be referred to as a control coolant jet because it is said that it has been discovered that this jet can control the shape of the resultant profile on the film; that the profile, after being adhered to the film, is in the somewhat plastic formative stage, and that the coolant jet can influence the shape of the profile by controlling the location where the coolant fluid is directed and the direction at which it engages the profile as well as the pressure or velocity at which it engages the profile (RX-3, col. 2, lines 25-68).

35. FIG. 2 of the '872 patent shows a sheet wherein plastic film has a set of profiles bonded to the surface. A typical set of profiles will consist of a general arrowhead shape for one profile and a complementary groove shape with overlapping side jaws for the other profile (RX-3, col. 3 at 25-27, 38-42).

36. A use of the type of film claimed in the '872 patent is shown in the structure of FIG. 3 of the '872 patent wherein the film sheet is doubled to form a doubled closed bag with a top and a bag interior and a bottom. The top of the bag has interlocking profiles. For use the bag will be slit along the top and the profiles can be pulled apart by the flanges located above the profiles for access to the interior of the bag. For reclosing the bag the profiles will be pressed together by applying a lateral pressure along the top

of the bag on either side of the profiles (RX-3, col. 3 at 27 to 37).

37. The following FIG. 4 is a somewhat schematic enlarged fragmentary sectional view showing a position of the cooling mechanism:



It is said that:

> FIG. 4 illustrates the relationship between the profile P on the film F and the cooling head 24. The cooling head is shown as having one or more jets illustrated by the air jets 33 and 34. Air supply lines 36 and 37 are connected to the jets. The jets are mounted on a movable adjustment piece 35 so that their angle can be altered in a direction transversely of the direction of travel of the profile. By shifting the jets in an arcuate path through 180° relative to the profile, more or less heat will be removed from one side of the profile than the other in the initial cooling which will change the shape of the resultant profile. During operation, the position of these jets can be changed to obtain the optimum shape in the profile. Thus this shape may be changed to correct, for example, unequal size jaws on the female profile. This feature may be also used to correct resultant unequal size barbs of the male profile due to inaccuracies in the shape of the die 16. Additionally, if at different speeds of extrusion, the plastic tends to flow so that the head or jaw of the male or female profile is smaller on one side than on the other side, then compensation can be made by adjusting the motion of the air jets.

(RX-3, col. 1, lines 14-16, col. 3, lines 43-65)

N 38. In a variation of the invention in issue as shown in FIG. 7, a profile has a jet supplied with a flow of coolant through a line, controlled by a pressure control valve, directed against the profile. By varying said valve, the rate of flow of the coolant through the jet is altered which will have an effect on the resultant shape of the profile. It is said that the pressure control arrangement may be employed alone or simultaneously with the

FIG. 4 arrangement. A FIG. 4 and a FIG. 5 relates to further forms of the invention (RX-3, col. 4, lines 17-28; col. 2, lines 5-23).

39. On April 25, 1986 there was filed a request for reexamination of the '872 patent. It was said that reexamination was requested of all of claims 1 to 8 of the '872 patent in view of the following U.S. patents:

Group A:	855,438	Ebel
	3,283,672	Mueller
	3,322,594	Lucas et al
	3,694,538	Okamoto
	3,932,090	Brumlik
	3,875,281	Behr
	Re 26,991	Luca
Group B:	3,421,960	Arbit
	3,462,332	Goto
	3,075,868	Long
	3,543,379	Naito

In comparing the prior art Luca Re 26,991 with independent claims 1 and 5 of the '872 patent the following comments were made:

Noguchi Patent 3,945,872	Luca Re.26,991
1. In the method of making plastic film with shaped profiles on the surface comprising the steps of:	Method for making film with shaped profiles is shown.
extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlocking engaging with another profile;	continuous length of film 18 is extruded with profiles 19 or 20 each of a precise shape for interlockingly engaging with each other
and directing a flow of coolant onto the extruded profile of warm plastic and adjusting the direction of flow of coolant relative to the direction of movement of the profile for controlling the cooling rate and shape of the profile.	air is directed from the tubes 23 and 24, Fig. 3 out of the tube openings 32 and 33 but there is no teaching of directing coolant onto the profiles but instead air is blown against the side of the film opposite the profiles. No means is provided for adjusting the direction of movement of the profile.
5. In the method of making plastic film with shaped profiles on the surface comprising the steps of:	Method for making film with shaped profiles is shown

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;	continuous length of film 18 is extruded with profiles 19 or 20 each of a precise shape for interlockingly engaging with each other
and directing a flow of coolant against the heated profile and adjusting the pressure of coolant flow for controlling the cooling rate and shape of the profile.	coolant is directed through the openings 32 and 33 but not against the profiles but against the film on the side opposite the profiles and there is no means or step taught for adjusting the pressure of the coolant flow.

(CX-1, Exh. I at 2)

40. It was argued in the April 25, 1986 request that Luca Re 26,991 shows extruding tubular film with profiles on the inner surface of the tube; that elongate tubes which are in a fixed position, provide excess cooling air at the location of the rib and groove profiles but on the surface opposite the rib and groove profiles; that the profiles are on the inner surface of the tube so that they can be interlocked by feeding the tube between pinch tools; and that there is no teaching of the critical method steps of the claims (CX-1, Exh. 1 at 4)

41. It was further argued in the April 25, 1986 request that the extrusion of profiles at a relatively high speed of a material which is essentially liquid is a critical art and those skilled in the art have had substantial difficulty in maintaining the dimensions of profiles such that they will satisfactorily interlock when the plastic has cooled; that the Noguchi patent '872 patent presents a unique and inventive method of cooling and solidifying the plastic of the profiles and yet simultaneously maintaining their dimensional criticality; that as set forth in the application and highlighted by the claims, a continuous length of interlocking profile is extruded from a die opening and coolant is directed onto the extruded profile

of warm plastic in a unique manner by adjusting the direction of flow of coolant relative to the direction of movement of the profile as set forth in claim 1; that claim 2 provides that such direction can be adjusted through an arc of 180°, and claim 3 provides that the arc extend in the direction of travel of the profile length; that claim 4 provides that the flow of coolant be adjusted in an arc extending transversely of the direction of movement of the profile length; and that claim 5 provides that the pressure of the coolant flow be adjusted. The prior art it was said, at best, has considered a flow of coolant onto a continually moving extruded tube with profiles on the surface and in some cases has directed the flow in a localized fashion, but as exemplified by Luca Re.26,991, that is done by tubes which direct flow on the film on a side opposite the profiles; and that while the prior art discloses the use of auxiliary air in connection with cooling for the tubing, the invention in issue is concerned with the provision of air to fix and dimensionally stabilize the profiles (CX-1, Exh.I at 11, 12).

42. In a Patent Office action dated June 13, 1980 the Examiner agreed that the consideration of the Luca patent raises a substantial new question of patentability "as to claims 6 and 8 of the Noguchi ['872] patent" (CX-1, Exh. I).

43. In the June 13, 1980 Patent Office action, the examiner stated in part:

> In regard to the limitation in claim 8 of Noguchi of "directing a first flow of coolant in a small jet against the heated profile length; and directing a second flow of coolant in a small jet shape against the heated profile length; said second flor [sic] of coolant being positioned after the first flow of coolant in the direction of profile length movement" attention is directed to Luca, column 3, lines 23-38 and line 74 through column 4, line 20. In that pipes 23 and 24 are elongated and have air jet openings

positioned vertically thereof, then said pipes and jet openings read on the above noted limitations.

(CX-1, Exh. I)

N 44. Col. 3, lines 74, 75 and col. 4, lines 1-20 of the Luca Re. 26,991 reads:

> As shown in FIGURES 2 and 3, the cooling pipes 23 and 24 are provided with rows of air jet openings 32 and 33 which are positioned to be directed immediately at the rib and groove elements. This provides an elongated stream of air continuously removing heat and cooling the plastic of the profile elements 19 and 20. The tubes may be mounted so as to be vertically adjustable as indicated schematically by the arrowed line 38 and 39 to adjust the location at which the air is applied relative to the location of the annular cooling ring 22. The cooling rate may also be controlled by controlling the flow of the air to the cooling pipes 23 and 24 through the supply lines 34 and 35 which are provided with air flow control valves 36 and 37. The valves can also be individually regulated so that the different quantities of plastic which may be present in the rib element 20 relative to the groove element 19 can be compensated for to obtain uniform and desired cooling. The control of cooling may also be obtained by controlling the temperature of the air although for convenience room temperature may be applied with the rate of air flow controlled.

(RX-5, col. 4, lines 1-20)

45. In complainant's "Petition for Reexamination--Supplemental Remarks", received by the Patent Office on June 26, 1986, it was argued that:

> Petitioner (Patentee) has now again reviewed Patentee's statements to the Patent Office in the Petition for Reexamination. It has been noted that Patentee pointed out that in the prior art Luca Re.26,991, air is blown against the side of the film opposite the profiles.
>
> This, however, is <u>not</u> a distinction upon which Patentee is relying for nonobviousness of the invention and patentability of the claims. A reading of the original Petition may erroneously indicate such, and these Supplemental Remarks are being submitted to clarify Patentee's position.
>
> It is completely clear that the disclosure and scope of the claims of the Noguchi patent 3,945,872 contemplate and include an arrangement wherein th coolant may be directed against the profile either from the side of the film on which the profile projects, or against the profile from the opposite side of the film. At times one or the other

arrangement may be desirable or necessary. This has been discussed with the Examiner on the telephone on June 17, 1986, and the Examiner agrees that the claims are clearly entitled to this scope of interpretation. While the drawings of the application show one mode in compliance with 35 USC 112, that is, directing the jet of air against the profile from the side of the film where the profile projects, the method of the invention can be practiced by the jet of coolant being directed against the heated profile from the opposite side of the film.

Noguchi employs the method of directing a small jet of coolant at an adjustable direction onto the profile from either side of the film, to control the cooling rate and profile shape. This is not taught by Luca or the other prior art.

Therefore, the explanation of the distinctions of Noguchi patent 3,945,872 and its teachings over Luca Re.26,991 are not based on the fact that Luca blows the air against the film opposite the profiles but on the fact that Luca fails to teach the concept of controlling the profile shape and cooling rate by adjusting the direction of coolant relative to the direction of movement of the profile such as required by claim 1. Also, Luca fails to teach directing a flow of coolant against the heated profile in a small jet shape such as required by claim 7 and by claim 8 or to adjust the pressure of the coolant as required by claim 5.

Patentee submits the remarks contained herein to make it clear to the Examiner that reliance for patentable distinction of the claims is not based on the fact that Luca directs a flow of air on the surface opposite the direction of projection of the rib and groove profiles, and Patentee wishes to make clear that there was no intention to mislead the Examiner as to this argument. The distinctions over Luca are believed substantial and clear in that Luca teaches directing a substantial flow of an amount of air in the area of the profiles to increase the speed of production by removing the excess heat of the thicker plastic profiles (as compared to the remainder of the tube). This is practiced by the air being emitted over the elongate pipes 23 and 24 of Fig. 1 and the disclosure that by the time the tube 18 is beyond the end of the cooling pipes 23 and 23, all of the plastic (including the profiles) has sufficiently cooled to collapse the tube and direct it through nip or pinch rolls (col. 3, ls. 50-57). Patentee's method is directed at precise control of cooling as well as precise control of the shape and retention of the shape of the profiles in a manner not heretofore possible following the teachings of Luca or the other references of record.

By the adjustment of coolant flow direction and/or pressure and/or temperature, control of heat removal and profile shape is possible. Such control enables accurate profile shape management with change in profile size and film thickness. The use of small jet shape also aids in this profile shape control and management.

(CX-1, Exh. I at 1-3)

46. In a "Response to Examiner Upon Granting of Request for Reexamination received by Group 130 on August 13, 1986 the argument was made that:

In the present Noguchi patent, the concept of the method involves directing a flow of coolant onto the extruded profile of warm plastic, while the plastic is still in the formative stage...The coolant is employed while the plastic is in the formative stage to fix the dimensions and shape of the profile soon after the profile leaves the extruder. Because the profiles are relatively small, and because the male and female profile must be capable of interlocking, the shape must be held and not permitted to drift or change, and this is a very sensitive operation particularly at the relatively high speeds employed in commercial production. This immediate cooling fixes the size and shape but normally does not remove enough of the heat to solidify the plastic to extent that the profiles can be interlocked or the film wound.

By contrast, the concept of the Luca patent is directing a general flow of air against the film in the area of the rib and groove elements in order to remove sufficient excess heat and harden the plastic of the rib and groove elements so that they can stand the forces of interlocking or winding. Since the rib and groove profiles contain substantially more plastic than the film, their resistance to cooling is greater than that of the film.

In practice the methods and mechanisms of each of the separate and distinct concepts can be and often are used together, each performing in its own individual way and achieving its own independent objective. This is referred to in the very specification of Noguchi which recognizes the different prior art concept of Luca in referring to the Luca concept as additional cooling means. In paragraph 3 of the specification, it is stated "An additional cooling means 23 further along the path of travel of the strip may be employed for completing the cooling operation." This is referring to the Luca concept.

The concept of Noguchi is next referred to in the same paragraph which states: "The primary or the control coolant jet 24 removes the majority of the heat and controls the shape of the profile, and the secondary coolant means 23 completes the operation but usually has no effect on the size and shape of the profile."

It is believed that the Examiner will be convinced as to the difference between these concepts with a review of the teachings of Luca and a review of the teachings of Noguchi.

(CX-1, Exh. I at 2-3)

47. In an Office action dated October 9, 1986 the Examiner rejected claims 6 and 8 under 35 U.S.C. 103 as being unpatentable over Luca Re.26,991. Claims 1 to 5 in issue and 7 were said to be allowed (CX-1, Exh. I).

48. A "Rexamination Certificate issued May 5, 1987 which stated in part:

THE ['872] PATENT IS HEREBY AMENDED AS INDICATED BELOW

Matter enclosed in heavy brackets [] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics [underlined] indicates additions made to the patent.

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims 1-5 and 7 is confirmed.

Claims 6 and 8 are determined to be patentable as amended.

6. In the method of making plastic film with shaped provides on the surface, the steps of:
extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;
directing a flow of coolant onto the extruded profile of warm plastic <u>in a predetermined variable direction while the plastic is in the formative stage</u>;
and varying the temperature of the coolant flow for controlling the cooling rate and shape of the profile.

8. In the method of making plastic with shaped profiles on the surface, the steps of:
extruding a continuous length of an interlocking profile

from a die opening with he profile having a precise shape for interlockingly engaging with another profile

directing a first flow of coolant in a small jet shape against the heated profile length in a predetermined variable direction while the plastic is in the informative state;

and directing a second flow of coolant in a small jet shape against the heated profile length;

said second [flor] flow of coolant being positioned after the first flow of coolant in the direction of the profile [length] length movement.

(RX-4)

IV. Complainant and the Process In Issue

49. Steven Ausnit is Chairman and C.E.O. of Minigrip. He graduated in 1944 from Harvard University as an engineer with a Bachelor of Science Degree.

complainant

became aware that reclosable plastic bags, identical with complainant's product were being imported from the Far East and sold at predatory prices; that as a result of these importations, complainant's growth started to slow down and when it appeared that complainant was on the verge of suffering irreparable injury and damages Minigrip Inc. applied for and obtained an Exclusion Order from the Commission which issued in January 1977 and was based on a single patent relating to specific details of the male female zipper profiles of the Minigrip bag; and that in 1982 complainant applied and obtained a second Exclusion Order from the Commission which was based on the patents covering the exclusive basic process technology complainant obtained from Seisan (Ausnit CX-180 at 3 to 5).

52. Ausnit testified that after the 1977 Exclusion Order became effective, Minigrip Inc.'s

53. Ausnit testified that

54. Ausnit described the Minigrip Plastic tubing and reclosable bags involved in this investigation as follows:

> The Minigrip extruded plastic tubing consists of a continuous closed tube, made by the blown film extrusion process. On the inside of the tubing there are integrally extruded, a set of interlocking profiles which are formed at the same time as the main body of the tubing and extend in the direction of extrusion. The profiles consist of a grooved shaped element (known as the female profile) and a rib shaped element having an arrow shaped head (know as the male profile). The current investigation involves a step in the commercial manufacture of reclosable bags whereby, after the tube with integrally attached profiles comes out of the extruder die, while the profiles are still in formative stage, a jet of air is blown onto the outside of the base of the profiles to control their cooling rate and shape. The female profile is designed to receive the male profile in an interlocking relationship when pressed together. The profiles are separable when pulled apart.
>
> After this profile tubing has been flattened and the profiles interlocked, reclosable bags are made by simultaneously sealing and cutting across the tube with the width between seals creating the width of the bag. The depth of the bags is determined by the tubing from which the bags are formed.

(Ausnit CX-180 at 8)

55. As to the difference between the original bags made by Flexigrip and the Minigrip bags, Ausnit testified that the difference is as follows:

> The zippers for the constructed bag were extruded separately from and not integrally with the film. Accordingly, the zippers had to be attached to the film before the cross seals could be made. This required an additional operation at the bag machine, which slowed it down, as well as two separate extruders, one to make zipper and one to make film. The resulting zipper bag, therefore, had an additional two seals parallel to the zipper locks, which attached the zipper to the film. These seals tended to create two additional potential points of weakness and to leave an overlapping area at the seal, which were undesirable.

(Ausnit CX-180 at 9)

56. Ausnit testified that

(Ausnit CX-180 at 9).

57. Reclosable bags and tubes are made from polyethylene (Ausnit CX-180 at 9).

58. Ausnit testified, as to how the Minigrip bags and tubing are manufactured by complainant, as follows:

(Ausnit CX-180 at 10 to 14)

59.

(Ausnit CX-180 at 14, 15

Tr. at 794 to 791, 818).

60. Ausnit testified:

> A. Figure 3 [of the '872 patent] denotes tubing with profiles on the inside.
>
> Q. Is that shown in the patent?
>
> A. It is not shown in figure 1, no.
>
> Q. Is that shown anywhere else in the patent?
>
> A. It is described in the patent.
>
> Q. Could you tell me where it is described?
>
> A. On column 1, line 35 it says, "The features described herein may be employed, for example, in an extrusion arrangement wherein the profile is not formed separately and applied to a film white hot, but wherein the profile and film are extruded simultaneously out of a single dye opening."

Q. Does that say it would be a tube or could it be something else?

A. It could be something else. It could be either a tube or it could be a sheet.

Q. Is there anywhere else in the patent that you find the word "tubing" or "tube"?

A. No.

(Ausnit Tr. at 665)

61. According to Ausnit, profiles can be controlled by controlling the pressure and two other parameters (Ausnit Tr. at 673, 674).

62. According to Ausnit, the air rings in Luca Re.26,991 (RX-5) and RE.29,208 (RX-41) perform a similar function (Ausnit Tr. at 679).

63. Ausnit testified that one cannot control the flow of air in a pipe where there are two or three one inch holes, as compared to a pipe having one small 1/8 inch jet of air being delivered; that as long as one has a number of holes that are spaced at certain distance from each other with the flow of air going to five holes, one cannot get any control of the air (Ausnit Tr. at 683).

64. Luca Re 26,991, according to Ausnit, mentions that a single jet of air can be used but Ausnit testified that a single jet could not work in practice for the purpose of Luca's invention, viz. to deliver air to the profiles after the tube has been formed and after the profile is no longer in a plastic or formative stage (Ausnit Tr. at 685, 686).

65. Ausnit testified that if the air can be adjusted onto the profile so that the air can control the shape then the air will work (Ausnit Tr. at 687).

66. Ausnit testified that the Luca invention was essentially to remove the heat from the profiles and cool them at a certain rate while the '872

invention is a different concept, viz. shaping the profile while the profile is in the formative stage (Ausnit Tr. at 688).

67. While Luca refers to "air jet openings", Ausnit testified that if one cannot adequately control the air of the jet itself, one cannot control the shape of the profile (Ausnit Tr. at 689).

68. According to Ausnit, adjusting air in a whole pipe with holes in it is not the same as adjusting air in the individual jets (Ausnit Tr. at 690).

69. According to Ausnit adjusting individual air jets depend very much on the location of those air jets (Ausnit Tr. at 690).

70. Ausnit testified:

> A. ...The function of the Luca patent is to cool the profiles at the same rate as the thinner tube next to it.
>
> The '872 patent talks about shaping the profiles by a jet of air when the profiles are in a formative stage. That's my interpretation. That is my understanding of the patents, and I'm not going to change.

(Ausnit Tr. at 691, 692)

71. As to controlling the shape of a profile Ausnit testified:

> A. I've tried to explain my position. If a profile is in formative stage you have to deliver to it a controlled jet of air, and you have to have reasonably good control on that air jet.
>
> If you have a lot, a series of holes -- let me put it differently. If you have a series of holes that are spaced at a certain distance from each other and which do not have control that you can deliver air, adjust the air of those specific holes, you are not going to be able to control the shape of the profile.
>
> You may cool it, but you will not control the shape.
>
> Q. You say the openings on the side of a pipe are not the same as an air jet; is that correct?

A. The openings on the side of a pipe which do not have individual controls are not the same as an air jet.

(Ausnit Tr. at 694, 695)

72. Ausnit testified that blowing air at the profiles and blowing air on the surface of the film opposite the profiles would provide the same results (Ausnit Tr. at 713, 714).

73. Ausnit makes a distinction between controlling the air to the air pipe and controlling the air to the air jets (Ausnit Tr. at 715).

74. Good tubing can be made by the method only of Naito Re. 29,208, which expired in 1984

(Ausnit Tr. at 728, 729; RX-41).

75. Good tubing can be made by the process of Luca Re 26,991 (RX-5) which expired in 1984 but at a much slower speed

although a little faster than with the air rings only of Naito Re 29,208 (Ausnit Tr. at 729; RX-5).

76.

because the Re 29,208 process is too slow (Ausnit Tr. at 729).

77. The Naito process would be even if the process is that of Re 26,991 (Ausnit Tr. at 729, 730).

78. Re. 26,991 concerns a plastic extruder which comprises an extruding die that has a slot for extruding a thermoplastic and which is formed with an enlarged profile portion in a slot shape for forming pressure interlocking complementary rib and groove elements and having first cooling means cooling the film and second cooling means which cool specifically the rib and groove elements (RX-5, col. 1).

79. Re. 29,208 concerns a method and apparatus for manufacturing a tube to be used for forming plastic reclosable bags including means for extruding a continuous annular tube of plastic with circumferentially spaced axially extending interlocking rib and groove profiles on the surface from a die shaped to form the tube and profiles, means for delivering tube separating air through the die into the tube interior, means for delivering a flow of outside cooling air around the outer surface of the tube to cool the tube at a rate to maintain the profiles on the surface of the tube and drawing means positioned for receiving the tube and drawing it from the die and flattening it (RX-41, col. 1).

80. In the '872 patent it is important that the air jet be directional (Ausnit Tr. at 789).

81. Ausnit testified:

> Q. In referring to the Luca patent that we were talking about earlier, the pipes of that, at what direction does the air from those pipes impinge upon the profile?
>
> * * *
>
> THE WITNESS....Generally, they would impinge on the profile from behind in a fairly broad area.
>
> BY MS. TAYLOR: (Resuming)
>
> Q. And at what angle is the opening in relation to the profile?
>
> A. The angle need not be exactly behind the base of the profile. It could be on the side.

(Ausnit Tr. at 789)

82. Ausnit also testified:

Q. I'm trying to ask if there's a variation between the position of the openings in the Luca pipes that the air comes out. Does it come out in one direction only or are there other directions that the air can be forced out of the pipe?

A. The Luca pipe, the air comes out in a fairly broad fan shape arrangement.

Q. So with an air jet, do you get more accurate aiming of the coolant?

A. Yes, very definitely.

(Ausnit Tr. at 790)

83. Ausnit testified as to :

(Ausnit Tr. at 819)

84. Luca, according to Ausnit, does teach controlling the flow of coolant to the air pipe but Ausnit makes a distinction between controlling the air to the air pipe and controlling the air to the air jet (Ausnit Tr. at 715).

85. When asked to explain complainant's presently used extruder, Ausnit testified:

(Ausnit Tr. at 719 to 722)

86.

(Ausnit Tr. at 722)

87.

(Ausnit Tr. at 722, 723).

88.

(Ausnit Tr. at 723).

89.

(Ausnit Tr. at 723).

90.

(Ausnit Tr. at 725, 726).

91.

(Ausnit Tr. at 726, 727).

92.

(Ausnit Tr. at 728).

93.

(Ausnit Tr. at 730, 733).

94.

(Ausnit Tr. at 731, 738).

95.

(Ausnit Tr. at 731).

96.

(Ausnit Tr. at 732).

97.

(Ausnit Tr. at 732, 733).

98.

(Ausnit Tr. at 734).

99.

(Ausnit Tr. at 724).

100. Ausnit testified:

Q. Now I refer you quickly to the Luca patent, column 4. That's RX-5.

* * *

A. "The cooling rate may also be controlled by controlling the flow of air to the cooling pipes. 23 and 24, through the supply lines, 34 and 35, which are provided with air flow control valves, 36 and 37." [col. 4, line 9]

Q. Does that say anything about jets in claim 5 that you can see?

A. It talks about directing a flow of coolant against a heated profile and adjusting the pressure of coolant flow for controlling the cooling rate and shape of the profile.

Q. Could you do that with an opening on the side of a pipe?

A. No, I don't think you could control the shape of the profile with just an ordinary opening.

Q. Could you control the cooling rate?

A. With what?

Q. With a flow of air from a pipe having an opening on the side of it.

A. What kind of pipe are you talking about?

Q. A short vertical pipe having holes on the side of the pipe, blowing onto a profile.

A. I do not think so, not if it's a short vertical pipe with just holes in it.

Q. You could not control the cooling rate?

A. I don't see how you could control it well enough to be able to shape the profile.

Q. Could you not control the amount of air to that?

A. Yes.

Q. Wouldn't that control the cooling rate?

A. The cooling rate, not the shaping of the profile.

Q. But that would control the cooling rate, would it not?

A. Control the cooling rate of what?

Q. Of the profile.

A.

(Ausnit Tr. at 735 to 738)

101. According to Ausnit, if one cannot control exactly the shape of the profile will not be controlled (Ausnit Tr. at 739).

102.

(Ausnit Tr. at 739).

103. Ausnit testified:

(Ausnit Tr. at 739, 740)

104. (Ausnit Tr. at 748).

105.

(Ausnit Tr. at 749).

106.

(Ausnit Tr. at 773).

107.

(Ausnit Tr. at 792).

108. Ausnit testified on the Minigrip process:

(Ausnit Tr. at 804)

109 to 113. (Deleted)

V. Patent Infringement

114. Robert S. Nocek is vice president of marketing and sales of complainant Minigrip, has held that position for 3 years and has been with Minigrip for 5 years (Nocek CX-179; Exh. A at 1).

N 115. Nocek testified that during the period of August 25, 1986-September 9, 1986, he travelled throughout the Far East and surveyed the situation concerning the manufacture of reclosable plastic bags in Hong Kong, Taiwan, South Korea, Thailand, Malaysia and Singapore; that in this regard, he toured actual manufacturing facilities, took pictures of the equipment being used, obtained samples of the product manufactured, was provided with quoted prices for export to the United States and met with equipment manufacturers and suppliers and was advised of their customers; that as to "each" of the foreign reclosable plastic bag manufacturers where he was permitted to inspect the manufacturing lines, he saw "plastic film in the form of tubing being extruded wherein a flow of coolant was directed on the extruded profiles while they were still in the warm plastic formative stage and using the flow of coolant by adjusting its pressure and/or direction to control the cooling rate and shape of the profiles;" that in addition, said foreign manufacturers had the special extruders for providing a color line on their product; that without exception, each of said manufacturers used a flow of coolant directed at the profiles to cool and shape the profiles, had the equipment for applying a color line to their product and, expressed an interest to export reclosable plastic bags to the United States; that the present foreign production capacity far exceeds the domestic demand for reclosable plastic bags and the entire Asian reclosable plastic bag industry is geared to export; that many of the foreign factories that produce reclosable plastic bags manufacture such

bags as their sole product, and thus those factories need an expanding customer base; that the foreign manufacturers are presently expanding their capacity to produce more reclosable plastic bags in anticipation of the U.S. market opening to them in 1987; that the foreign manufacturers are capable of further expanding their capacity to substantially take over the U.S. market in a relatively short time if permitted to enter the U.S. market; and that in addition, the foreign made reclosable plastic bags, although virtually identical in appearance to Minigrip reclosable plastic bags and bearing the Minigrip color line trademark are generally of an inferior quality in that they are undergauged, of reduced clarity and, on information and belief are not made from FDA approved resins (Nocek CX-179, Exh. A at 2, 3).

C.A.G.

N 116. C.A.G. came to Nocek's attention because C.A.G. submitted an unsolicited quotation for ZIPLOC bags to one of complainant's customers, viz KCL Inc. On September 9, 1986, Nocek met with Mr. Hangal Ng, who is C.A.G.'s "Chief Manager". C.A.G. is an agent for Siam Import whose extrusion line Nocek observed and which operates as described in FF 115. Nocek testified that Ng expressed a desire to sell reclosable plastic bags, (referred to as "ZIPLOC" bags) for export to the United States; that Ng indicated that the bags were available with or without the color line which was confirmed by the quotation; that in addition, Ng stated he has previously exported reclosable plastic bags to the United States which were apparently not stopped by U.S. Customs (Nocek CX-179, Exh. A at 3, 4).

117. (Deleted)

Harbona

118. During Nocek's meetings with Chan of Harbona,

(Nocek Dep. RX-91 at 96).

119. During Nocek's meetings with Chan of Harbona, Chan expressed an interest in exporting reclosable plastic bags to Minigrip and was enthusiastic about it. Chan wanted to sell his product. Harbona is a medium supplier of reclosable plastic bags. Minigrip did solicit Harbona as a potential supplier of reclosable bags (Nocek Dep. RX-90 at 84; Nocek Tr. at 330 to 334).

Chang Won

120. Nocek testified that on September 1, 1986, he met with Mr. S.C. Hong, Manager of Chang Won who escorted Nocek to the manufacturing plant which is located near Seoul, Korea; that Hong represented that the plant produces about 5,000,000 reclosable bags monthly, from sizes 2" x 3 1/2" to 12" x 18" and that this represented only 50% of full capacity; that Nocek examined the extrusion line and was permitted to take photographs; and that Hong indicated an interest to export to the United States. Attached to the Nocek affadavit which formed a portion of Nocek's testimony is an Exhibit 3 which is said to be a photocopy of a photograph which shows an adjustable air jet used to blow air on the profile. Complainant provided no testimony from Mr. Hong and while the copy of the photographs has typed in the margin "profile" and "air jet" with arrows, the "air jet" is not able to be detected from the xerox copy of the photographs. The actual photographs, without legends, but which are legible form a portion of RX-91A and an air jet directly adjacent to what appears to be cooling rings can be detected from that photograph. Also

attached to the Nocek affidavit is an Exhibit 4 which is said to be a sample of the product of Chang Won showing the use of the color line on the bag. Exhibit 4 is a xerox copy of the photograph. The color line is evident from the photograph (Nocek CX-179, Exh. A at 4, 5).

121. Nocek dictated a trip report on his visit to Chang Won which states in part:

Hogn Ter

N 122. Nocek testified that on August 27, 1986, he met with Mr. Chi-Jen Yeh, the General Manger of Hogn Ter; that he was allowed to tour the plant but was not allowed to take photographs; that the plant included at least fifteen extruders with ten operating at the time; that the extrusion lines included air jets directing air onto the profiles; that Nocek made a sketch (Exh. 5 to testimony) immediately after his visit which shows the air jet arrangement used by Hogn Ter; and that a photograph (Exh. 6 to testimony) of a sample of Hogn Ter's product clearly shows Minigrip's color line trademark. Nocek testified that Hogn Ter eagerness to export to the U.S. is shown by a price list, CIF New York. (Exh. 7 to his testimony). The following is Exhibit 5 to Nocek's testimony:

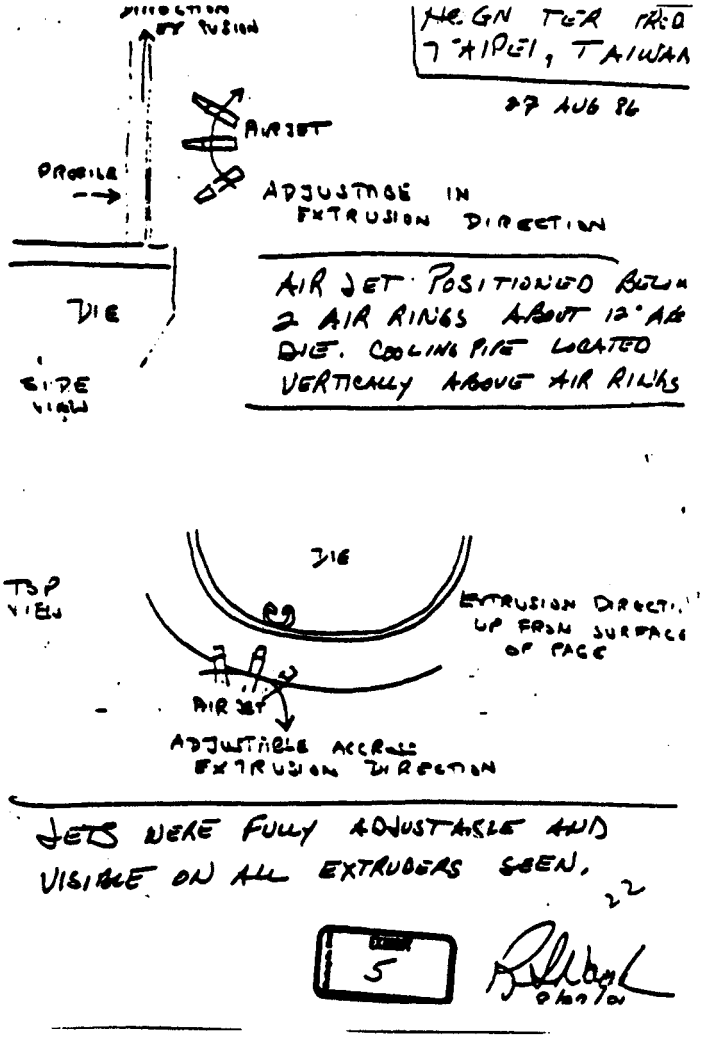


Exhibit 6 to Nocek's testimony shows use of the color line on the bag. Exhibit 7 to Nocek's affidavit has a heading "Hogn Ter Product Co. Ltd." and a subheading "Minigrip Blueline Zipper bags" (Nocek CX-179, Exh. A at 6). As to Exhibit 5, Nocek in deposition testified:

> Q Let's look at Exhibit 5, Hong Tair.
> Is this the sample form that you prepared to depict the cooling process before you went over on your Far East trip? Was this exhibit prepared from that sample form?
>
> A Yes.
>
> Q Here you're depicting the cooling process of Hong Tair.
>
> A Yes.
>
> Q Let's look at the part that's called "air jet." You have three things protruding out from that part called "air jet."
>
> What are those protuberances?
>
> A That's an air nozzle purported to show that it can move in either the vertical or the horizontal direction.
>
> Q Is that a hose or something like that?
>
> A It is an air nozzle.
>
> Q What specifically was Hong Tair using?
>
> A Hong Tair used a pipe that was directed at the -- an air jet made from a pipe.
>
> Q Is the pipe depicted on this drawing?
>
> A Pipe or the air jet is represented by the parts that are called "air jet."
>
> Q This part would have been lised air jet and drawn similarly on other exhibits of similar from used in your affidavit, correct?
>
> A I use this as a general form. So the same depiction would be there.
>
> Q You have not really depicted the pipe or anything other than the nozzles on this drawing, correct?

A Yes.

Q Now, where is the air emitted? Where does it get out on these nozzles?

A There was a single nozzle of Hong Tair and -- this is the same nozzle in different positions.

Q But you're saying there was only a single nozzle at Hong Tair.

A There was a single nozzle, yes, in Hong Tair.

Q So there weren't three as depicted here?

A No, that's not my depiction. My depiction is motion or range of motion.

At the TEO hearing as to Exh. 5, Nocek testified:

Do you understand what I am trying to ask you? I am making reference to Exhibit 5.

THE WITNESS: Yes, Your Honor.

* * *

THE WITNESS: As I stated at the time, I was allowed to go through the plant, but not take photographs.

So, immediately upon leaving, I took a standard form that I had depicting the air jets, and in this case where in the upper drawing I show that the air jet was adjustable up and down, parallel to the profile. That's where the three air jets with the arrow are depicted.

It was actually a single air jet, but it had range of motion up and down.

The air jet, meaning the end of whatever apparatus was used to blow air on to the profile, it would be connected behind it to some air source type holes, or whatever else.

I made notes concerning that and its position in the lower portion of the drawing. I also made a few more notes as they were fully adjustable and they were visible on all extruders below that area, meaning that, again, the air jet was adjustable perpendicular to the profile, in the horizontal direction.

The air source is behind that air nozzle or air jet. I am only showing the air jet or the air nozzle.

> There were a lot of different renditions of ways this was being done in the air source, or how it was attached, or whatever. I did not depict in the standard drawing. I only depicted whether or not there was a jet, whether or not it was adjustable, whether or not I could see whether it had a value on it to make it pressure adjustable or flow adjustable also.

(Nocek CX-179, Exh. A at 6, Nocek dep. RX-91 at 145 to 147, Nocek Tr. at 608 to 610).

123. (Deleted)

Ideal and Ta Sen

N 124. Nocek testified that on August 28, 1986, he attended a meeting which took place in the World Trade Center, Taipei, Taiwan, along with representatives of these companies; that each of these companies is a manufacturer of reclosable plastic bags and is a member of the "Plastic Bag Union" which was described to Nocek as being an association set up for the sole purpose of exporting reclosable plastic bags; that it was indicated at this meeting that these companies, as well as other Taiwanese manufacturers, wanted to sell reclosable plastic bags to the U.S. as soon as possible; that in view of the present exclusion order, the representatives refused to provide further information regarding their business; that however, while in Taiwan and Hong Kong, Nocek met with representatives of Facit Industries, Lung Meng, Siusco and Harbona Ltd., who are manufacturers of extrusion equipment for reclosable plastic bags; that each of those manufacturers provides adjustable air jets for cooling and shaping the profiles as part of their equipment and offer the special extruder needed to supply the color line trademark; and that Nocek is not aware of any manufacturers of equipment for producing reclosable plastic bags who does not provide such adjustable air jets as part of its

equipment. Ausnit testified at the hearing on Dec. 4, 1987:

> Q Mr. Ausnit, I have handed you a recloseable plastic bag that was previously marked CPX-10.
>
> Did you furnish that bag to me?
>
> A I did.
>
> Q Can you tell where you obtained that bag?
>
> A At Ideal Plastic in Taiwan.
>
> Q When was it that you obtained that bag?
>
> A In 1982.
>
> Q And has that bag remained in your possession since that time?
>
> A Yes, it has.
>
> Q I have also handed you a recloseable plastic bag that was previously marked CPX-11.
>
> Did you furnish CPX-11 to me?
>
> A Yes, I did.
>
> Q Can you tell me where you obtained CPX-11?
>
> A That was obtained from a company called Ta Sen in Taiwan.
>
> Q And when did you obtain CPX-11?
>
> A In 1982.
>
> Q And has CPX-11 remained in your possession since that time?
>
> A Yes, it has.

(Nocek CX-179, Exh. A at 5, 6; Ausnit TR at 115, 116).

N 125. Nocek further testified that the August 28, 1986 meeting took place in a building devoted to export; that the walls of the room in which the attendees met were covered with dozens of samples of reclosable plastic bags of various sizes and shapes; that most, if not all of the bags bore the color

line trademark, predominantly red; that at the meeting he received name cards from Ideal and Ta Sen (Exh. 31 to testimony); that from the discussion that ensued at the August 28 meeting it was made clear to Nocek that the manufacturers present cooperated with each other and that they were prepared to cooperate to export reclosable bags to the United States; that each of the manufacturers present expressed an intent to export to the United States; and that Nocek assumes that the manufacturers present at the meeting obtained their equipment from one or more of the manufacturers listed since, as far as Nocek knows, these are the only manufacturers of such equipment (Nocek CX-179, Exh. B at 2, 3).

126. (Deleted)

Kwang Il

127. Nocek testified that on September 1, 1986, he met with Mr. Lee, the president of Kwang Il and Mr. Yoo, its Sales Chief, at their factory and observed its operation; that at each extruder Nocek saw an air jet used to blow air onto the profile to control its shape; that a photograph (Exh. 8 to testimony) Nocek took of one of the extruders shows the use of such an air jet; that Nocek was advised by Mr. Yoo that the plant, at full capacity, would produce 16,000,000 reclosable bags per month; that a photograph (Exh. 9 to testimony) of a sample of the bag manufactured by Kwang Il shows the use of Minigrip's color line trademark; and that Yoo indicated an interest in exporting to the United States. The copy of the photograph (Exh. 8) has typed in the margin "air jet" and "profile" with arrows. However the air jet is not able to be detected from the photograph copy. The actual photograph, without legends, but which is legible, forms a portion of RX-91A and an air jet can be

detected from that photograph between what appears to be a cooling ring and the extruder. Exh. 9 does show the color line trademark (Nocek CX-179, Exh. A at 6).

Lim Tai

N 128. Nocek testified that on September 4, 1986, he met Mr. Ti Kasen and toured the factory of Lim Tai located outside Bangkok, Thailand; that each of the extruders for reclosable bags there included adjustable air jets blowing air onto the profiles; and that this company expressed a keen interest and intent to export reclosable bags to the United States. Attached to the testimony of Nocek is an Exh. 10 obtained by Nocek and which is said to show a sample of the reclosable bag manufactured by Lim Tai. Exh. 10 is not legible. The Lim Tai factory building was said to be rather run down, but to have four Minigrip extruders and five other extruders for various types of film. There were a total of 17 single lane bag machines, but only six of these were designed to manufacture reclosable bags. On all four Minigrip extruders, air jets consisting of open-ended pipes attached by a valve to an air hose were plainly in use. The end of the pipe was flattened by a hammer and the air stream was directed at both profiles. Due to local flooding problems and the poor condition of the factory, it was said that the company will soon be moving to a new, more modern location and that they plan to have about the same amount of equipment at the new location and will be moving their onld equipment as well (RX-66 at 000728, Nocek CX-179, Exh. A at 7).

Rol-Pak

129. Nocek testified that on September 8, 1986 he met with Messrs. Kuen (Managing Director), Wäk (Assistant Marketing Manager) and Kuok (Production Manager) of Rol Pak and toured their plant in Kuala Lumpur, Malaysia; that each of the extruders for reclosable bags included air jets

blowing air onto the profiles to control their shape; and that Nocek was advised that Rol-Pak presently make approximately 20-25,000,000 bags per month for export. Exh. 11 to Nocek's testimony is said to be a copy of a photograph Nocek took of one of the extruders and said to clearly show the use of air jets. Exh. 11 is a xerox copy. While there is typed in the margin "air jets" and "profile" with arrows, air jets are not able to be detected from the photograph. The actual photograph, without legends, but which is legible, forms a portion of RX-91A and an air jet can be detected from that photograph. The air jets are between what appears to be a cooling ring and the extruder. Exh. 12 to Nocek's testimony is a copy of a photograph. The photograph does show a color line trademark. Exh. 13 is directed to Nocek and states that it was a pleasure meeting Nocek on his recent Far East trip. It quotes the prices of polyethylene finished blueline zipperbags CIF New York (Nocek CX-179, Exh. A at 7).

130. Nocek's trip report on his visit to Rol-Pak read:

(SX-12)

Siam Import

N 131. Nocek testified that on September 4, 1986, he met with Mr. Chan Ma, who is Director of Production of Siam Import and toured the factory in Bangkok, Thailand; that the factory was very modern and included new extruders for manufacturing tubing for reclosable plastic bags, each of which used adjustable air jets to control the profile cooling and shape; and that Nocek directly observed a color line being applied to products and there was expressed a desire and intent to export to the U.S. Exhs. 14, 15 and 16 to Nocek's testimony (CX-179, Exh. A) are said to be copies of photographs Nocek took and which "clearly" show the use of an air jet directing air onto the profile and that in Exh. 16 there is shown a color line extruder and a color line in the tubing. Exhs. 14, 15 and 16 are xerox copies of photographs.

Exh. 16 is barely legible as to any details. While Exh. 15 has typed in the margin "air jet" and "profile" with arrows, the air jet is not discernible from the xerox copy. Likewise while Exh. 16 has typed in the margin "color line", "air jet" and "color line extruded" with arrows, said items are not discernible. The actual photograph, without legends, but which are legible, forms a portion of RX-91A and an air jet can be detected from the photographs above the extruder. Exh. 17 is said to be a sample of a reclosable bag manufactured by Siam Import. Exh. 17 appears to be a xerox copy of a photograph. Exh. 17 is barely legible (Nocek CX-179, Exh. A at 7, 8). A trip report refers to "adjustable air jets". A sketch on Nocek's visit to Siam Import shows:

(RX-67 at 000742 and 000744)

132. (Deleted)

N 133. Nocek testified that Teck Keung in the spring of 1986 exported over 700,000 reclosable bags to the United States. Teck Keung directly contacted complainant to seek entry of its imported shipment after the shipment had been subjected to a Customs Service redelivery notice (Nocek CX-179, Exh. A at 8).

N 134. Nocek testified as to domestic importers, as follows (Exhibits referred to are exhibits to CX-179, Exh. A):

> Insertion Advertising Corp. - From September, 1984 through September 1985, Insertion Advertising Corp. imported approximately 18,000,000 reclosable bags, which were refused entry by U.S. Customs. Attached hereto as Exhibit 22 is a group of documents which relate to the purchase and importations by Insertion of reclosable bags into the U.S.
>
> Ka Shing Corp. - Attached hereto as Exhibit 23 is a copy of a correspondence we received which indicates that Ka Shing Corp. was importing reclosable bags from Taiwan (TPE) via the port of New York along with a sample of the reclosable bag.
>
> * * *
>
> Nina Plastic Bag Co. - Attached hereto as Exhibit 25 is promotional literature, including a price list, of Nina Plastic Bags, Inc., for its "Easy Seal" reclosable bags. The sizes of the bags set forth on the price list indicate that these bags are not made in the united States. In November, 1985, Nina imported 5,700,000 reclosable bags from Hong Kong via Tampa, Florida.
>
> * * *
>
> Tracon Industries Corp. - In June, 1986, Tracon Industries imported over 16 million reclosable bags. Since Minigrip obtained its exclusion order in Investigation No. 337-TA-110, there have been at least 21 instances of importation of reclosable plastic bags which were intercepted by Customs. Exhibit 27 sets forth Minigrip's information pertaining to the imports.

(Nocek CX-179, Exh. A at 8 to 10)

134a. From 1984 through 1986 Tracon imported approximately worth of reclosable plastic bags into the U.S. (CX-179, Ex. A at 10; SPX-5).

135 to 136. (Deleted)

136a. Nocek visited Harbona, Ltd. in August 1986. Harbona Ltd. is located in Hong Kong. It has five operating extruders. All five had multiple air jets consisting of eight flexible pipes each pair (one for the female and one for the male) being controlled by a separate valve. Each flexible air jet was fully adjustable in both the vertical and horizontal directions. The air flow was adjustable as well. Harbona Ltd. also has a color line (Nocek RX-91A, Ex. 23).

137. Nocek testified that he is unaware of any manufacturer of equipment for extruding profile tubing for reclosable plastic bags that does not provide adjustable air jets to control the profile cooling and shape and that accordingly he believes all reclosable plastic bags manufactured or imported by the named respondents were made by a process in which the cooling rate and shape of the profile were controlled by a flow of coolant (Nocek CX-179, Exh. A at 11, 12).

138. Nocek testified that he has measured samples of respondents' bags and have generally found them to be undergauged; that upon information and belief, such foreign bags are not made from FDA approved materials, and that he believes the resins used include reclaimed material obtained from third parties so that the actual content of the material is unknown (Nocek CX-179, Exh. B, para. 6).

139. Minigrip presently fills orders for stock bags from inventory as quickly as the paperwork involved allows, usually 3-5 days. Minigrip has no back orders for stock bags, thus confirming its ability to meet demand (Nocek CX-179, Exh. B, para. 7).

140. Nocek provided the following compilation of the number of production lines for the listed countries:

RECLOSABLE PLASTIC BAG PRODUCTION LINES

Country	Number of Lines
Hong Kong	15
Taiwan	45
Malaysia	7
Thailand	18
South Korea	18

Nocek testified that the number of lines are based on his observations on information given to him during his 1986 trip to the Far East with the exception of Taiwan; that in Taiwan, with the exception of Hogn Ter, he was not permitted into plants nor was he given information as to current capacity; and that accordingly, for Taiwan the number of lines is based on information obtained in connection with 337-TA-110 (Nocek CX-179, Exh. B, at 4, Exh. 32).

141 to 168. (Deleted)

169. Luca Re. 26,991 teaches that in order to remove excess heat and solidify the plastic of the rib and grove elements, auxiliary cooling means are provided to blow separate jets of air at the tube at the locations of the rib and grove elements (RX-5, Col. 3, lines 17 to 22).

170 to 176. (Deleted)

176a. Mitchell A. Sieminski is a consultant and his specialty generally is examining samples in polarized light and interpreting the results therefrom (Sieminski CX-185, Ex. B at 5).

176b. Siemiński was qualified as an expert in the microscopy of polymers and birefringence (TR. at 41; CX-185, Ex. B at 6 to 20).

176c. Birefringence in its general sense relates to the property of a material of resolving a light as it travels through a substance into two component parts, each part of which travels in preferred directions in the material at different velocities with the component parts being both polarized in planes at right angles to one another. According to Sieminski under certain conditions on examination the effects of the two component rays which are produced in a given sample can be shown. Thus in a birefringent material a single ray is resolved into two components vibrating at right angles both polarized. Because the component rays travel at different velocities, one ray is retarded behind the other. The extent of retardation is dependent on the orientation of molecular components (i.e. on the parallel arrangement of the polymer molecules) and the thickness through which the two component rays travel (Sieminski TR. at 41, 47, 48).

176d. A birefringent material is one which has different optical properties in different directions in the material. It is a so-called anisotropic material (Sieminski CX-185 Ex. B at 20).

176e. Sieminski's testified as to the process by which reclosable plastic bags are manufactured at Minigrip:

> A A molten polymer is extruded through a die. It is extruded in the shape of a tube. And that tube in [sic] drawn in this particular case upwards, and subsequently goes through an area which is comprised of an air jet. Not an air jet, I am sorry, but an air ring, primarily a cooling device. And then after that, it proceeds upwards.
>
> In the case of the Minigrip process, somewhat above the extrusion die is a jet of air which impinges in the region close to the profile, the female profile. That in essence is my understanding of the process.
>
> Q From what material are the the bags made?
>
> A The polymer used is polyethylene.

Q And is a polyethylene polymer birefringent?

A Depending on its method of preparation, it is inherently birefringent in the sense that one can result in a product which is birefringent.

Q Under what conditions would the product become birefringent?

A Primarily through an extension process in such a manner that the cooling is controlled and allows an extension of the molecular chains in the molten polymer in the cooling polymer. This normally results in the preparation of a material which can be shown to be birefringent.

(Sieminski TR. at 42, 43).

176f. Sieminski testified:

A. During the days that I have been in the [Minigrip] plant, they have conducted a number of different experiments on making the tubes with and without the air jets, positioning the air jets at different points, both below the air ring that is cooling and above the air ring, and a general variety of samples of that nature, purely in the pilot plant operation.

Q. What is the pilot plant operation? Is that a part of the research lab?

A. It is part of their research. It is an R and D, research and development, really.

Q. Other than observing the extrusion process with these different experimental effects, have you made tests yourselves upon--

A. Yes. Examined the materials, some of which I have shown here today.

Q. And how did you examine those materials?

A. Examined the materials between both crossed polars and parallel polars and making thickness measurements across the film and relating those measurements to the birefringent effects we observe.

(Sieminski CX-185, Ex. B at 78, 79).

176g. A birefringent material examined between crossed polars (film that will produce light vibrating in one plane) in a 45-degree angle position

will exhibit color effects due to its birefringent nature (Sieminski CX-185 Ex. B at 20, 21).

176h. A material is structurally birefringent generally when it has different physical structures in different directions (Sieminski CX-185 Ex. B at 21).

176i. In an ideal situation, a single long-chain polymer molecule in a coiled state exhibits a random orientation as the molecule might appear in a molten state. In normal cooling (no localized cooling) there is a slight degree of extended orientation of the molecule affected. With an air jet (localized cooling) some of the molecule is in a coiled state but there is a greater degree of orientation due to drawing out or extension when in a more viscous melt (Sieminski CX-185, Ex. B at 32, 33).

176j. Sieminski testified that the effect of an air jet in producing reclosable plastic bags, when imposed in an area close to the profile is to produce a band of retardation colors close to the profile when the bags are examined in polarized light. The birefringence increases because the localized cooling caused by the air jet reduces the viscosity of the polymer in that region and the subsequent drawing, and extension of the polymer results in a preferential alignment of the molecular structure in that region. This increased orientation of the material observed between crossed polars is said to show higher retardation colors and a somewhat greater thickness in the region of the application of the air jet as against values of retardation and the thickness measured in the web (non-profile area) of the material (Sieminski TR. at 43, CX-185 Ex. B at 30).

176k. CPX-13(a) and CPX-13(b) are identical plastic sheets. Polaroid film is a birefringent material which is made so that the material has the

property of transmitting one component of a the light ray which component is vibrating in only one direction. The transmission of only one component permits an evaluation of what is going on when a ray passes through a reclosable plastic bag sample being examined (Sieminski TR. at 44).

1761. When Ex. 3 of Ex. B to CX-185 (a sample produced with no air jet impinging on the female profiles) is placed between parallel portions of polaroids CPX-13(a) and CPX-3(b) and aligned at a 45 degree angle with respect to the preferred directions in CPX-13(a) and CPX-(b), there is produced retardation colors. However when Ex. 2 of Ex. B to CX-185 (a sample produced with an air jet impinging on one side of the female profile) is substituted for Ex. 3, a higher retardation color (brighter colored bands) is obtained. The reason is that by impinging the air jet in said region one effects a preferential cooling of the polymer with an increase in its viscosity where one starts to draw out the molecules preferentially in the region impinged by the air jet. Then as the material is completely solidified, the material freezes in that molecular alignment in said region. With the exception of the use of the air jet in Exhibit 2 and the non use of the air jet in Exhibit 3, all conditions in manufacturing Exhibits 2 and 3 were similar and equal. The only difference between the two exhibits is that the Exhibit 2 was made with the application of the air jet, and the sample Exhibit 3 was made without the use of an air jet. Sieminski testified that the application of this particular test permits one to make a judgment as to whether or not an air jet is used in the formation of a particular bag (Sieminski TR. at 48, 49, 50, 51; CX-185, Ex. B at 39, 40).

176m. The application of an air jet results in an extension of the molecular chain which gives rise to a higher degree of orientation in a

localized region and the higher retardation colors are an indication of the increased birefringence which has developed locally (Sieminski CX-185, Ex. B at 40).

176n. Ex. 4, Ex. B, CX-185 is a photograph of the sample (Ex. 2) produced with an air jet close to the profile with indicated thickness of 3.6 mils along the width of the tubing close to the profile. Ex. 5 of Ex. B of CX-185 is a photograph of the sample (Ex. 3) produced with no air jet and with an indicated thickness of 3.0 mils along the width of the tubing close to the profile (Sieminski CX-185, Ex. B at 41 to 43).

176o. Sieminski testified:

> Q. Now, you have talked about two different effects of the application of an air jet to the tubing. You talked about a change in thickness and a change in the ability or the level of birefringence.
>
> Are these two factors both caused by the air jet application?
>
> A. They are definitely related.
>
> Q. But are they different effects or are they one and the same effect?
>
> A. Well, they are different in the sense that one is affecting the thickness, but the second, the development of a higher retardation color is the effect of the drawing out of the molecules at that point.
>
> Q. In other words, just increasing the thickness by this amount wouldn't account, alone, for the color difference we see.
>
> A. No. In fact, we have made measurements, let's say, of relative retardation in the form of the use of a step wedge. And we determine that in the region where we had the higher retardation color, the relative retardation value we gave it was about four and a half. A similar measurement on the sample of Exhibit 5, in that same general area, gave us a thickness measurement of 3.0 but a retardation value of about 3.

> So, the point is that we have effected about a 50-percent greater retardation value and yet the change in thickness at that point has only been a matter of about 20 percent, in other words 6 units, let's say, in 30.

(Sieminski CX-185, Ex. B at 45, 46).

176p. Ex. 6 to Ex. B of CX-185 is a portion of the extruded tubing used in the preparation of the bag and the particular portion examined at the hearing is where an air jet was impinged not in the profile region, but at a definite distance away from it. (in this case, approximately 1.5 inches). Where the air jet has been applied, there has been the development of these bands of retardation colors about an inch and a half from the profile. A dull brown coloration is by either of the profiles (Sieminski TR. at 54; CX-185, Ex. B at 46, 47).

176q. According to Sieminski, a jet of air, as he used the term, means the application of a relatively narrow band of air impinging on the sample. That is "we don't use a broad width of air. We use a relatively narrow, let's say an eighth of an inch width flow of air impinging on the material. For instance, one could use, let's say, a tube a half an inch in diameter. That is not the kind of thing we have used here" (Sieminski TR. at 54, 55).

176r. Ex. 2 of Ex. B of CX-185 examined in the normal way between parallel polars, with Ex. 2 in the 45 degree position, showed a pronounced blue banding adjacent to the profile and hence it was made with an air jet (Sieminski TR. at 95).

176s. According to Sieminski, Exhibits 2 and 3 of Ex. B of CX-185 are with and without an air jet and in Exhibit 6 the air jet was positioned away from the profile to indicate the effect of the air jet and the subsequent production of the retardation color (Sieminski TR. at 55).

176t. Retardation color formed by an air jet may be seen as blue color (Sieminski TR. at 56).

176u. CPX-1 (Exhibit 4 to the Nocek affidavit- a Chang Won bag) when placed between polaroids CPX-13A and CPX-13B at a 45 degree angle shows use of air jet by the retardation color. Color is blue on both sides of the profile but more so on one side. Same with CPX-2 (a Hogn Ter Bag) (Exhibit 6 to the Nocek affidavit) (Sieminski TR. at 57 to 59; CX-185, Ex. B TR. at 48, 49).

176v. When CPX-3 (Exhibit 9 to the Nocek affidavit - a Kwang Il bag) with its female profile in a 45 degree position between parallel polars CPX-13A and CPX-13B, there is adjacent to the female profile the appearance of bands of birefringents which show that an air jet was used during the bag's manufacturer (Sieminski TR. at 62).

176w. CPX-4 (Exhibit 10 to the Nocek affidavit, a Lim Tai bag) does not give a distinctive test as the CPX-1, CPX-2 and CPX-3 and hence Sieminski made further measurements. He testified:

> When I gave my definition of birefringence, I mentioned that it was in a general sense. Well, in a specific sense, birefringence can be expressed as a numerical value and that numerical value is arrived at by measuring the retardation of that color band and dividing it by the thickness at that point in the sample.
>
> And if one were to do that, one would get a value which one then could compare with a value arrived at at some other point in the sample where one doesn't get this kind of banding. And that numerical value of birefringence, let's say, in this case, would probably show, would undoubtedly show in my estimation a higher value than out in this region, here.
>
> JUDGE LUCKERN: But do we know that?
>
> THE WITNESS: We don't know that.
>
> MR. LEVY: Your Honor, if I may. Mr. Sieminski was asked to do further testing on this bag; but, unfortunately, we didn't have possession of the bag until this morning. So,

we weren't able to do the further testing that had been requesting. So, what you are seeing now is really just a duplicate of what took place at this deposition.

MS. TAYLOR: Are you referring to the step wedge test that you use here?

THE WITNESS: Yes.

(Sieminski TR. at 66, 67).

176x. In deposition as to the Lim Tai bag (CPX-4) Sieminski testified:

A. Frankly, this is one I'd not be sure of. It is one that I would want checked further. My first impression is it might be an air jet, but the appearance is completely different from any others that we have seen.

Q. There seems to be a brownish color there, but is it darker than--

A This is generally the sort of slight dirty brown color on the one side and on the other side there is again a colorless band followed by a slightly brownish color.

Q. You say you would check it further. How would you check further?

A. Well, my first impression here, as I say, is that it might be the use of an air jet simply because there is that--there is a localized coloring in the neighborhood of the profile, whereas away from the profile one does not have that kind of coloring. In other words, the coloring is located close to the profile so that, as I say, I would be a little bit hesitant on it but my first impression would be air jet.

Q. I would like to--

(Sieminski CX-185, Ex. B at 50, 51)

A. Possibly not as marked as in the others.

176y. As to CPX-4 (the Lim Tai bag) Sieminski testified:

THE WITNESS: Again, I have the bag placed in the 45 degree position between the parallel polars. As I recall, by virtue of the -- let's say relative values of birefringents which we have calculated from the measurements, this would indicate the use of an air jet. The relative birefringent values that we got in the vicinity of the profile were

higher than the relative values of birefringents which we calculated in the body of the bag.

(Sieminski TR. at 98).

176z. As to the step wedge test, Sieminski testified:

I mention that retardation is the amount that one ray lags behind the other. And that is expressed as a distance in nanometers, in other words, billions of a meter. And what we have had done is we have simply taken a -- made a wedge and this wedge is made by taking a birefringent material and, let's say, having one thickness --

* * *

THE WITNESS: What I have in my hand, now, is a device which was constructed by cutting strips of the birefringent material and laying -- superimposing these strips one on top of the other in such a manner that I have one area where I have just a single strip, I have another area where I have two strips superimposed, a third layer, three, four, five, six and so forth.

Now, as I showed in this previous arrangement, if I place this material between, again, cross-polars and in this case the crossed position and having this in the 45 degree position as previously, which I will do, now.

* * *

THE WITNESS: Well, I call it a wedge because it is a step-wise arrangement of this and if I were to approximate -- I'm sorry. If I were to start at the low end and simply draw a line through each of these, it would in essence form a wedge.

The trouble with this kind of arrangement is that one has a step-wire arrangement. Now, if I actually measure or if I were to measure the retardation in this first step, which has been done, that is of the order of 70 nanometers.

The second step in that wedge, which is obviously twice the thickness, has to have a retardation which is twice that. So, in this case, it is 140 nanometers. And then that goes up to 210, 280 and so on up the line.

* * *

THE WITNESS: Yes. We have our two pieces of Polaroid, Exhibit CPX-13A and CPX-13B. Now, they are placed in the crossed position. In other words, the preferred directions

of transmission of the light in those is at right angles one to the other. And, so that what we have here is normally a dark appearance because no light comes through.

Now, we place between those in the 45 degree position this step wedge and one sees the development of colors in this wedge. Now, we can use this wedge to determine the retardation that we see in the reclosable bags.

(Sieminski TR. 68 to 71)

(There is no FF 176aa)

176bb. With respect to the step wedge test and CPX-4, Sieminski testified:

A In making this measurement of relative retardation value, I will place between the crossed polaroids --yes -- the sample bag which is Exhibit CPX-4.

I place the wedge in and I read a value of the band, where I get so-called compensation. And in this case, the band is the third band and it has a retardation value of approximately 210. And I can't give you the exact value because I go by discrete steps from one band to the other. And to get my actual compensation, the actual compensation might be in between Band 3 and Band 4. And I get my compensation when the color is black.

Now, in this particular case, the -- let's say the relative retardation value of the color is between 3 and 4. I'll call it 3.5. And I will compare that with what that retardation value is in an area away from the profile. In other words, I have now placed it in a region away from the profile. And I get here a black band in the first, right in here. So that in retardation number, there is, let's say, if I go between 210 and 280 -- let's say very roughly 250, 240.

* * *

THE WITNESS: The 240 is at a point adjacent to the profile. In other words, that is the retardation that one views at that particular point.

* * *

THE WITNESS: Near the profile is where I got the between 210 and 280. In other words, this region here. In other words, somewhere in here. But when I move that out into the body of the fabric --

* * *

THE WITNESS: Yes. I am now in the body of the fabric. I have a retardation value of 70. Or, let's say the first band. And so that there is a difference in retardation. I'll call it value, of approximately 1 to 3.5.

In other words, in the area adjacent to the profile, I have a retardation number, I have approximately 240-250.

In the region away, I have a value of approximately 70. So, what I have done here is I have gotten a measure of the retardation value.

Now, the next thing I have to do in order to get my birefringent, which is what I am after, is I have to measure the thickness at this point, divide that thickness in, let's say, the retardation because I am not going to use the same values of distance. In one case, I am using nanometers. In this particular case, when I measure it, I will be using mils. But the relative ratio will still be the same. In other words, whether I use the same units of distance or whether I use, let's say, values related to that.

So, my next step is to measure the thickness at this point and the thickness here.

JUDGE LUCKERN: And "at this point," is in the body of the material.

THE WITNESS: Yes. The value of 70 nanometers is in the body of the material. And the value of approximately 240 nanometers is in a region adjacent to the profile. So, if I may have the lights?

* * *

THE WITNESS: In my hand now I have a thickness gauge which will permit me to make measurements in mils, which are thousandths of an inch. And I'm taking the thickness measurement of an area next to the profile. And the thickness measurement I get here is 3.5 mils. That is the region where I made a measurement of retardation of approximately 240 nanometers. Now, I will make a measurement of thickness in the body of the fabric, away from the profile, and in this case I get a thickness of 1.9 mils. So in order to get a measurement of the birefringence in each of these regions, in the one case, I will divide the 70 by 1.9, in other words, my retardation divided by thickness, which is birefringence; and in the other case, I will divide the retardation, which was 240

nanometers, I will divide that by -- I forget what I said -- 35?

MR. LEVY: 3.5.

THE WITNESS: 3.5 mils.

MR. LEVY: Your Honor, here is a calculator to do it, but it comes out in the -- in one case it is roughly 68.7. That's where it was 240 divided by 3.5. And when 70 was divided by 1.9 that's 36.8.

THE WITNESS: In other words, in the area next to the profile, one has a higher value of birefringence than in the area away from the profile. And this then would be an indication of the application of the and [sic] air jet.

(Sieminski TR. at 72 to 76).

176cc. In deposition, on the step wedge test, Sieminski testified:

A. The step wedge is made up of strips of the same birefringent film, and the strips are overlaid one on the other so that we have a segment where we have only one thickness of strip showing. Adjacent to that is a segment where we have two thicknesses of film, three, four, five, subsequently on.

Q. How high does it go? To how many layers?

A. In this particular case we happen to have, I think it is, 16 steps.

The wedge is so oriented that the so-called slow ray direction is parallel to the elongation of that film.

Q. Can you explain that in simpler terms?

A. Well, this wedge is inserted over the sample and it is oriented so that the sample--or the fast ray in the sample is in the same direction as the slow ray in the wedge. Both the sample and the wedge are placed between crossed polars and at a 45 degree angle to the plane of polarization of the light.

Q. The sample and the wedge are parallel to each other?

A. Parallel to each other.

Q. But those two, parallel to each other, are placed at a 45-degree angle between the crossed polars?

A. Yes. In other words, they are both 45 degrees. And the reason for that alignment of the slow ray of the wedge and the fast ray of the sample is that in that alignment one is able to insert the wedge and, looking at a particular color, retardation color in the sample, inserting the wedge until the color, original color in the sample now becomes black which represents the point of compensation.

Q. That is when no light comes through at all?

A. No. light comes through at that point in the sample.

Q. So, you--

A. And the relative retardation number is arbitrarily taken as, in this wedge, as the number of thicknesses of film at that point.

Q. So, in other words, if you put a sample in the wedge at the 45-degree angle to the film, you move the wedge along on the sample until you get a place where there is a black spot, which indicates that no light is coming through the two pieces of film together, and that is the number you look at on the wedge?

A. Yes.

Q. If that were five thicknesses, that--

A. Would be a relative retardation value of five. Yes.

Q. If the areas that you are looking at have the same retardation value, both number five, what would that indicate?

A. I'm sorry. I don't quite--

Q. When you just did you test on the Ka Shing sample, when you round the compensation or the retardation rate, you found it in two different places on the film?

A. Yes.

Q. Why did you do that?

A. Because the colors that I saw were different. So, what I wanted to do was to establish the relative retardation number for the colors at each point.

Q. If the retardation numbers for the colors at each point had been the same, both, say, number five, what would that have indicated to you?

A. Would have indicated there was no difference in orientation there, because the thicknesses were almost identical.

Q. What if you do the test and you get a retardation number that is larger near the profile and smaller far away from the profile? What does that indicate?

A. That value, coupled with the thickness measurement made at those two points would give me a relative birefringence value. And the area having the significantly higher birefringence value would indicate a higher degree of orientation effected at that point.

Q. In other words, if you had a larger retardation number achieved when you got the ratio with that and the thickness at that point near the profile than the same ration farther away, that would indicate an air jet had been applied near the profile area?

A. Yes. Yes.

Q. If the opposite happened, if you got a larger number away from the profile, what does that indicate?

A. At the moment, I am at a loss to say. The thing that bothers me here is that the retardation value is considerably higher, significantly, but there is hardly any thickness difference. Normally, one associates with, let's say, the thickness, where the higher orientation comes in, a slightly higher value of thickness and we don't get this in this sample. I just have to think about it a lot more.

(Sieminski CX-185, Ex. B at 56 to 60)

176dd. Step wedge test is a standard test in the microscopy field (Sieminski TR. at 76).

176ee. Cooling ring, instead of an air jet, would not give the retardation color because from the colors, "it has to be applied at a particular point and it has to be applied concentratedly. For instance, if one were to use simply the air ring, that has been applied too far up the line and one hasn't applied it in a specific area. By that time, the material has solidified to the point where one cannot get this orienting effect." (Sieminski TR. at 77).

176ff. As to an air ring, Sieminski testified:

> JUDGE LUCKERN: No, I'm not asking you to speculate. Suppose an air ring was used rather than an air jet at the profile. Would you know what would happen?
>
> THE WITNESS: I would expect that one would get a relatively uniform appearance.
>
> JUDGE LUCKERN: But would you get this birefringence phenomenon that you're talking about, you know, that is characteristic?
>
> THE WITNESS: Only in degrees. It depends on too many things. For instance, where it's applied, the molten state of the materials, how the viscosity has increased, and the amount of drawing that you get.
>
> But generally, let's say based on the appearance of various kinds of bags in the generally non-profile area, one would see marked effects, if, let's say, the air ring were placed down further.

(Sieminski TR. at 77-78).

176gg. CPX-10 (an Ideal Plastic bag) when its female profile at a 45 degree angle is placed between parallel polars the use of an air jet is shown. Same with CPX-11 (a Ta Sen bag) (Sieminski TR. at 78, 79).

176hh. Sieminski's opinion is based primarily on the appearance in a region close to the profile as against one in an area in the body of the fabric, definitely a distance away (Sieminski TR. at 80).

176ii. As to effect of thickness of material on the birefringent test, Sieminski testified:

> THE WITNESS: If I were to make a measurement of thickness in a region close to the profile and then make a measurement of thickness in an area away from the profile, and where we get that strong color effect, I could say, guesstimate or say that the thickness difference, relatively, would be much less than the retardation values I would get, as we're still in the bag. In one case, in an area, let's say, next to the profile, we got a value of something on the order of 240 nanometers in retardation. In an area away from it we got a retardation value of 70. There's a difference of about three and a half.

> And yet the difference in thickness was only a matter of one to two.

(Sieminski TR. at 82).

176jj. Referring to CPX-8 (CX-23 to Nocek deposition, a Ka Shing bag), complainant has no reason, based on tests Sieminski performed, to believe that the bag was made using the patented process in issue (TR. at 85, 89, 99, 100).

176kk. As to CPX-8, Sieminski testified:

> THE WITNESS: This is CPX-8 and this is one case where I could not say that the air jet was applied simply because the area in the region of the profile shows a much lesser degree of orientation as indicated by the retardation colors than in the body of the fabric, and the body of the fabric is relatively uniform, showing a higher degree of orientation than in the region close to the profile.

(Sieminski TR. at 86).

17611. Complainant cannot say Ka Shing infringes (TR. at 109).

176mm. As to the Ka Shing bag (CPX-8), in deposition, Sieminski testified:

> Q. I would like to give you Exhibit 23 to the Nocek affidavit, a sample from Ka Shing.
>
> A. Again, this is one where I would be hesitant and I would have to, let's say, make the birefringent measurement; in other words, the retardation color and thickness on this.
>
> Q. For what reason would you want to?
>
> A. Well, although I see the color-banding, it is quite different from what we have seen previously. Instead of being the relatively bright blue, I see colorless areas on either side. And then again on either side, outside the colorless bands I see the dull brown coloration. And then even further away, in the body of the bag--the body of the bag now shows the generally deep blue that we have seen.
>
> Q. Is it possible that an air jet was used on this whole bag? It is kind of a small size.
>
> A. The one thing that makes me think it possibly could be -- but I won't be definitive -- is the fact that that region--wait a minute--yes.

That region adjacent to the profile is distinctly different from the rest of the bag, so that my first thought is that possibly air jet, simply because there is a difference in the colors away from the jet--sorry--away from the profile and next to the profile.

* * *

Q. I have just asked Mr. Sieminski, since he can't determine whether an air jet was used in the manufacture of this bag by the color test alone, to apply a micrometer to do the thickness test.

A. The thickness adjacent to the profile is 25 and a half mils. In the body of the bag, away from it, the thickness is 24 and a half mils.

May I cut the other side of this bag?

Q. Sure. You are going to use the step wedge test on this?

A. I am going to use the step wedge to determine the relative retardation values in the area close to the profile and in the area away from the profile. In other words, I will get a retardation--relative retardation number to coincide with the value of 25-and-a-half mils and again a relative retardation number--in other words, the number of the step wedge that will give me a compensation value--in the area away, where we have 24-and-a-half mils.

Q. If you go ahead and tell us what you do when apply this test, and I may ask you some questions about the step wedge to get the compensation factor afterwards.

A. I will speak after I have made this measurement.

The relative retardation value in the 25-and-a-half mill area is one and the relative retardation value in the 24-and-a-half mill area is five.

Q. What does that indicate?

A. That would indicate without question that the higher birefringence is in that area away from the profile and that close to the profile the birefringence is much smaller, by a factor of almost five.

Q. Thus, an air jet was not used?

A. That is a--I mean, that, I have not seen before.

Q. Almost looks as if an air jet was used on the tubing, not the profile?

A. Exactly.

Q. That would indicate definitively an air jet was not used at the profile area?

A. If there was an air jet, it wasn't directed at the profile.

(Sieminski CX-185, Ex. B at 52 to 55)

176nn. Sieminski testified:

Q If measurement of birefringence in the body of the bag indicates a greater birefringence in the bag body, than a similar measure in the area of the profiles, would that indicate that an air jet was not directed at the profiles during the manufacture of the bag?

A That would be my first impression, yes.

JUDGE LUCKERN: What do you mean by your first impression? Yes, or no.

THE WITNESS: Well, I would say no. In other words, the air jet was not used in the body of the bag.

(Sieminski TR. at 88).

176oo. CPX-12 is a device which was built to facilitate the examination of the profiles -- the female profiles -- of bags rather readily. The device is made up of a piece of polaroid above an open area, and a piece of polaroid below the open area. The polaroids are so disposed so both the upper and lower polaroids have their preferential directional transmission at a 45 degree angle relative to the length of the polaroids. This has been so designed that the bag -- the female profile -- can be inserted so that the profile is then simply parallel to the elongation of these plates. It will then be in the 45 degree position necessary for observation (Sieminski TR. at 90).

176pp. As to drawing CX-187, Sieminski testified:

A This depicts the mechanical device as we have it here --

Q "Here" being CPX-12?

A I'm sorry. CPX-12. Because of the -- this particular drawing was made of a device which was subsequently modified, and I believe that the description here of the polaroid C center line angle 90 and polaroid C center line angle Zero represents a device with examinations in the cross position -- the device we have here represents a device with a piece of polaroid in the parallel position -- the way we normally do.

This drawing was made after we had modified this device for measurement of the retardation numbers where we have to have the sample examined between cross polars. But the normal device is with the polars in the parallel position.

Q So CPX-12 would duplicate what you did on the slide projector?

A Yes.

Q As far as the pole is concerned, is that correct?

A Yes.

(Sieminski TR. at 90, 91).

176qq. CX-187 depicts CPX-12 except that the polars in CPX-12 are parallel rather than crossed (Sieminski TR. at 92).

176rr. CPX-12 is a portable version of what can be seen with the screen used at the hearing (Sieminski TR. at 99).

176ss. Ex. 7 of Ex. B. of CX-185 (a Minigrip bag), when in a 45 degree position between parallel polars, shows use of air jet (Sieminski TR. at 104).

176tt. As to Ex. 7 and the color test, in deposition Sieminski testified:

A. Air jet. What one sees here [Ex. 7] is that in the vicinity of the profile one has a definite banding of colors. Next to the profile one has an almost colorless band, and then one gets into a bluish brown and then, outside that, one has a fairly bright blue.

In the body of the bag, the color is relatively uniform, so that the whole thing indicates that air jet was used.

176uu. Ex. 8 of Ex. B of to CX-185 (a bag purchased at a Giant) shows use of an jet (Sieminski TR. at 104).

176vv. As to Ex. 8 and Ex. 9 of Ex. B of CX-185 and the color test, in deposition, Sieminski testified:

> Q. I would give you Exhibit 8, a Dow zip lock bag I brought in the grocery store this week in a carton of 25 bags. It is a sandwich sized bag.
>
> A. Again, I would say air jet. One can see the color-banding that is a true color-banding only on one side of the profile because the crimping on the other side is too close to the profile to judge.
>
> Q. I would like to give to you Deposition Exhibit 9.
>
> * * *
>
> Q. This is a bag produced to the staff by Teck Keung Manufacturing. This was produced with a letter from Teck Keung on August 12, 1987, to the Commission, and Teck Keung represented that these are "samples from our production run for you reference".
>
> * * *
>
> A. Air jet.
>
> Q. Very bright purple and blue?
>
> A. Again, in this case, I can probably see the colors a bit better here than on the screen. Directly adjacent, on both sides of the air jet is a light blue, relatively narrow band. Adjacent to that is an orange band, a little bit wider than the others. And even outside that, colorless and blue. Again, it would indicate a use of an air jet.

(Sieminski CX-185, EX. B at 61, 62)

176ww. Referring to Ex. 12 to the Nocek affidavit (a Rol-Pak bag) Sieminski testified in deposition:

> Q. I would like to give you Exhibit 12 to the Nocek affidavit, a sample from respondent Rol-Pak.
>
> A. Again, unquestionably air jet.

Q. As indicated by--

A. I'm sorry?

Q. Air jet as indicated by--

A. Again, the use of an air jet is indicated by the color-banding in the vicinity of the profile and the absence of that color-banding away from the profile and in the body of the bag.

Q. I would like to give you Exhibit 17 to the Nocek affidavit. This is a sample from Siam Export.

A. Air jet, again, as indicated by the color-banding adjacent on both side of the profile and the lack of any like colors in the body of the fabric other than the dull brown which one normally gets or sees.

Q. Again here we see a bright blue color. Is that correct?

A. Yes.

(Sieminski CX-185, Ex. B at 51, 52)

VI. Trademark

177. The '120 trademark at issue is the subject of complainant's incontestable Reg. No. 946,120 on the Principal Register of the U.S. Patent and Trademark Office for plastic bags (RX-46).

178. The color line trademark consists of a horizontal stripe adjacent the bag top lined for the color red although Minigrip makes no claim to any specific color (RX-46).

179. Minigrip registered the color line trademark on the Prinicipal Register of the United States Patent and Trademark Office on October 31, 1972 (RX-46).

180. The color line mark was first used by Flexigrip on zipper to be attached to film for reclosable bags in 1959 (CX-1, para. 7).

181. The color line mark has been used continuously since 1959 by Minigrip and Flexigrip (CX-1, para. 7).

182. U.S. Letters Patent 3,380,481 ('481 patent) issued to O.K. Kraus on April 30, 1968 on an application filed March 2, 1962. The patent is titled "Closed Tube With Fastener Members." It is assigned on its face to Minigrip (RX-42).

183. Claims 1 and 2 of the Kraus '481 patent read:

> 1. A structure of use in making a recloseable container comprising, an elongated closed flexible integral tube, a first interlocking element integral with the tube on this inner surface thereof, and a second interlocking element integral with the tube on the outer surface thereof, said elements being shaped for cooperative pressure interengagement and forcible separation.
>
> 2. The structure as defined in claim 1 and includng means defining a separational line extending longitudinally along the tube for separating the tube material between said interlocking elements.

(RX-42, Col. 7, lines 2-13).

184. Col. 6, lines 54 to 75 of the Kraus '481 patent reads:

> In the arrangement of FIG. 21, an elongated continuous flexible plastic tube 152 has fastener profiles 153 and 154 extending therealong for forming closure elements. To separate the tube and form flanges at the top of the bag which is to be constructed, a knife blade 156 is run along between the fastener elements 153 and 154 along a line of severance 157. The tube is provided with an integral colored line 155 located between the male and female profiles 153 and 154. The colored line will be extruded simultaneously with the tube. With the line of severance 157 formed in the middle of the line, the opening flanges will each be marked with a colored outer edge. If desired, the colored line 155 and the line of severance 157 can be related so that a cut is along the edge of the colored line 155, and then only one of the flanges will be colored for ease

of separation. It will be understood that any of the structures of FIG. 2 through 20 may be provided with a colored line or colored lines between the male and female interlock of profiles and the tubes cut axially along the center of the colored line or lines, or along the edge or edges thereof.

185. While complainant's Kraus patent states:

A. "It will be understood that any of the structures of FIGURES 2 through 20 any be provided with a colored line or colored lines between the male and female interlocking profiles and the tubes cut actually along the center the colored line or lines or along the edge or edges thereof."

Ausnit testified that in complainant's present reclosable bag the color line between the profiles or adjacent to the profiles is not used for any purpose other than as a mark of distinction (Aunsit Tr. at 717,718).

186. As to the Kraus patent (RX-42, col. 6, line 67), Ausnit testified:

Q. There is a statement here: "If desired, the color line" -- and I believe that number is 155 -- "and the line of severance, 157, can be related so that the cut is along the edge of the color line, 155, and then only one of the flanges will be colored, for ease of separation."

Do you interpret that statement as the Kraus patent requiring that the color line and the line of severance be related so that the cut is along the edge of the colored line?

A. No. It's one of the possibilities of the patent.

187. Ausnit testified that to identify complainant's products, Minigrip, in its extrusion processes extrudes a color line on its sliderless zipper products (including both the zippers and plastic tubing) adjacent the zipper locks; that the color line is a registered trademark and is used today to identify the sliderless zippers, zipper tubing, and reclosable bags made therefrom as quality products of Minigrip Inc.; and that Minigrip heavily

promotes the color line as its trademark, and the color line is recognized as such (Ausnit CX-180 at 7).

188. Ausnit testified that Minigrip uses the color line to identify all of the sliderless zipper products it manufactures, whether zipper itself, zipper (profile) tubing, or reclosable zipper bags, as quality products manufactured by Minigrip in Orangeburg; and that this has become more and more significant as other reclosable zipper products have appeared on the market place (Ausnit CX-180 at 10).

189. Complainant normally uses its color line trademark as shown in RPX-5. It has been so used under a year (Ausnit Tr. at 650).

190. Complainant discourages providing another color line, other than red, but will do so (Ausnit Tr. at 818).

N 191. Nocek provided the following compilation of those using the color line trademark in issue on reclosable plastic bags products and the basis for same:

SCHEDULE OF RESPONDENTS
USING COLOR LINE TRADEMARK

Respondent	Source of Information
C.A.G.	Advised by "chief manager" bags available with color line.
Chang Won	Sample with color line seen.
Hogn Ter	Sample with color line seen.*
Ideal Plastic	Sample with color line seen.*
Ka Shing	Sample with color line seen.
Kwang Il	Sample with color line seen.
Nina Plastic	Sample with color line seen.
Rol-Pak	Sample with color line seen.
Siam Import	Sample with color line seen.
Ta Sen	Sample with color line seen.*

Nocek testified that the above samples marked with * were obtained in connection with 337-TA-110 investigation and bore color line trademark (Nocek CX-179, Exh. B at 2, Exh. 30)

192. The physical exhibits in evidence of reclosable plastic bags with color lines include some bags in which the separational line or bag opening edge coincides with an edge of the color line. Additionally, several bags, including those bags of respondent with color lines, have the color line spaced from the separational line or bag opening (CX-1, Exhibits D and E thereto; Ausnit Tr. at 644).

193-194. (Deleted)

195. A visual examination of reclosable plastic bags show that they contain longitudinal plastic profiles which are the closure elements of the bag and which run horizontially near the top of the bag. These profile elements are thicker than the rest of the bag material and are apparent to the eye and not transparent as is the remainder of the plastic material bag. The longitudinal profiles can serve the function of allowing a user to identify the top of a bag without a color line, and to discriminate between the top and bottom of the bag (SPX - 1, 3, 7, and 8).

196. Several exhibits of record depict reclosable plastic bags containing printed instructions thereon which refer to the color line on the bags. These printed instructions refer to a functional use of the color line, such as "LIFT COLOR LINE TO OPEN" or "LIFT RED LINE TO OPEN". These instructions indicate no degree of functionality of the color line (RX-95; RX-91A, Exhibits 7, 8, 9, 11, 12, 13, 14, 17, 18, 19, 20, 21 thereto).

197. Complainant has never printed functional instructions such as in the previous finding relating to the color line on its products -- bags,

tubing, and zippers (Nocek, Tr. at 598, 601, 602, Nocek Dep. RX - 91 at 113-119).

198. Complainant Minigrip has instructed both verbally and in writing its customers not to use such instructions referring to the color line, and all known such uses of opening instructions referring to the color line have ceased (Nocek, Tr. at 601-602; RX-91, Nocek Dep. at 129 - 130).

199. Minigrip's witnesses Ausmit and Nocek testified that the color line is a trademark and has no functional purpose (Ausnit Tr at 718; Nocek Dep RX-91 at 113).

200. Minigrip uses printed opening instrucitons on its products which do not refer to the color line. The most common wording it uses is only the words "open" and "close" and arrows pointing to the zipper or profile fastner (Nocek Dep. RX-91 at 122-124).

201. Complainant's Ausnit testified that Minigrip heavily promotes the color line as its trademark and the color line is recognized as Minigrip's trademark. Minigrip has placed advertisements expressly promoting the color line as its trademark. Its price lists contain the prominent legend "LOOK FOR THE COLOR LINE. A TRADEMARK OF MINIGRIP INC. [In bold letters], IT IDENTIFIES THE ZIPPER, ZIPPER FILM AND/OR ZIPPER BAG AS A QUALITY PRODUCT OF MINIGRIP INC." (CX-180 at 7; CX-1, Ex. F thereto; SX-20). Minigrip's stationery, price lists, and advertising prominently and expressly promote the color line as a trademark (CX-1, Ex. F thereto -- Ads "Look fur the color line, the trademark of Minigrip, Inc., it identifies the tubing as a quality and product of Minigrip, Inc.," and "THE COLOR LINE is the IDENTIFIABLE registered trademark on quality products from Minigrip, Inc."; RX-38

stationary "LOOK FOR THE COLORLINE, THE TRADEMARK OF MINIGIP, INC., IT IDENITIFIES THE ZIPPER, ZIPPER FILM AND/OR ZIPPER BAG AS A QUALITY PRODUCT OF MINIGRIP INC.").

202. Dow, a licensee of complainant, has estimated sales of $100 million reclosable plastic bags in the consumer market under the trademark Ziploc. The bags sold by Dow do not contain a color line (CX-1 at 9, 16; Nocek Dep. RX-91 at 153; Ausnit Dep. RX-92 at 67-68; Nocek Tr. at 500).

203. Minigrip currently uses the color line mark near the top of its reclosable plastic bags and its predecessor in interest has continuosly used the mark since 1959 (Ausnit CX-180 at 10; Ausmit Tr. at 638-640; 642-645; CX-1, Exh. C thereto).

205. Additional extrusion equipment is needed to co-extrude the color line onto the reclosable bag tubing (CX-179, Nocek at 2).

206-210. (Deleted).

211. Any manufacturer of reclosable plastic bags can produce reclosable plastic bags with a color line (Taheri Tr. 981).

212. Respondent C.A.G. charges a higher price for bags with color lines, as opposed to bags without a color line (Nocek CX-179, Exh. A, Exh. 1 thereto).

213. Ausnit testified that complainant's color line trademark which states "adjacent to bag top" can be anywhere within a reasonable distance of the bag top. Ausnit also testified:

> A. Well, as far as we are concerned the color line, which is our trademark and denotes the product is from Minigrip, should be adjacent or near the bag top. I would say within an inch or an inch and a quarter, an inch and a half, as long as it's close to the bag top, the color line denotes the bag was manufactured by Minigrip.

Q. Is near the bag top the only criteria for placement of the color line?

A. As far as the color line is concerned, I would think so, yes.

Q. Color line is not specific to a color, as stated here. What color is used the majority of the time by Minigrip?

A. The majority of the time, the color is red. But we also use a reasonable amount of time the color blue or black, green quite often.

(Ausnit Tr. at 787 to 788)

214. Complainant uses the color red, blue, black, green, mauve, orange, brown, gold, silver in its color line. Also Minigrip's Ausnit testified that the color line on its reclosable plastic bags and tubing is used to identify zipper tubing and reclosable plastic bags as quality products of Minigrip. He testified that the color line is heavily promoted as a trademark and recognized as such (Ausnit Tr. at 788; Ausnit CX-180 at 7).

VII. Economic Issues

A. Importation and Sale

215. (Deleted).

N 216. Mr. Ng of C.A.G. confirmed to Nocek of Minigrip that C.A.G. had exported bags made by Siam Import to the U.S. which had not been stopped by U.S. Customs. Defaulted respondent C.A.G. is also an agent for a "one extruder operation in Malaysia outside of Singapore." (RX-68). The evidence does not show what product the "one extruder operation" makes (Nocek CX-179 at 3; RX-68; RX-67).

217. (Deleted).

N 218. Defaulted respondent Nina Plastic imported into the U.S. worth of allegedly infringing reclosable plastic bags in 1984 and 1986 (Nocek CX-179 at 9 & Ex. 27 thereto; SXPX-5 at 17).

N 219. Defaulted respondent foreign manufacturer Hogn Ter has imported to the U.S. allegedly infringing reclosable plastic bags (Nocek RX-91A, Ex. 23 thereto at 4).

N 220. Defaulted respondent foreign manufacturer Teck Keung in 1986 exported to the U.S. 700,000 allegedly infringing reclosable plastic bags which were subjected to a redilevery notice by U.S. Customs (Nocek CX-179 at 8).

N 221. Defaulted respondent importer Ka Shing in 1986 imported at least worth of allegedly infringing reclosable plastic bags into the U.S. (SPX-5 at 6, et seq.; Nocek CX-179 at 9; SX-21).

222. (Deleted).

N 223. Defaulted respondent domestic importer Insertion imported reclosable plastic bags in 1984 and 1985. (SX-21; SPX-5; Nocek CX-179 at 9, & Ex. 27 thereto).

N 223a. A sample reclosable plastic bag made by defaulted respondent Rol-Pak is of record; the bag contains labelling indicating it was made in Malaysia as packaging for swimming caps for sale by a New York City firm (CX-179 at 7 & Ex. 12 thereto).

N 223b. There is no probative evidence of record as to actual exports to the U.S. or sales for export to the U.S. by respondents Chang Won and Kwang Il.

B. Domestic Industry

224. Minigrip produces both reclosable plastic bags and profiled tubing at its plant in Orangeburg, New York (Ausnit CX-180 at 3-8).

224a. Minigrip's current Orangeburg, New York production facilities dedicated to reclosable plastic bags and profiled tubing occupy approximately a square feet of space. Over employees work at Orangeburg for Minigrip in the manufacture and processing of bags and tubing (CX-181 at Ex. M & L; Tr. at 626).

225. Complainant's Orangeburg plant has 21 extrusion lines for the production of profiled tubing, three printing presses, and 20 bag making machines to cut and seal across the tubing to produce reclosable plastic bags (Ausnit CX-180 at 8, 14-15).

226. Reclosable plastic bags are produced by Minigrip from extruded plastic film tubing with continuous shaped profiles with the use of air jets to blow cooling air at the base of the profiles, while they are still in a formative stage, to control the shape and cooling rate of the profiles (Ausnit CX-180 at 8, 10-15 & Exhibits 1-3 thereto; Ausnit Dep. RX-92 at 9-23; Tr. 719-728).

227. The air velocity and air pressure through complainant's air jets are adjustable and are adjusted according to the speed of the extrusion and the gauge of the plastic going through the die. The air jet has a dial gauge

(Ausnit Tr. at 719-728; Ausnit Dep. RX-92 at 9-23).

228.

(Ausnit Dep. RX-92 at 15, 17; Ausnit Tr. 722; Ausnit Statement CX-180 at 14-15 & Exhibits 1-3 thereto).

229. Minigrip annual sales of reclosable plastic bags and profile tubing are as follows:

(RX-83).

229a. Minigrip's total 1986 fiscal year sales of reclosable bags and profiled tubing amounted to $. Minigrip's total annual sales result from an extrusion production of feet of profiled tubing, which when converted would form in bags. Its sales in the standardized size stock bag market are 60% of this total, or $ dollars (SX-1 at Int. #27; CX-181, Ex. R thereto; Keegan TR at 37).

N 230. Dow has a license from Minigrip to use the '872 patented process in its production of plastic bags and tubing. Dow uses the '872 process at its production plants in . These plants employ a substnatial number of workers and contain equipment worth

in total replacement cost (CX-181, Ex. J; SX-27).

N 231. Dow's annual sales of reclosable bags made from profiled tubing are approximately $100 million. Dow reports that significant gains were made in 1986 in its sales of ZIPLOC brand reclosable bags, "despite the entry of a competing consumer product in this category," referring to First Brands' GLAD brand reclosable bags.

Dow's reclosable plastic bags are sold under the trademark Ziploc in four sizes: sandwich, quart, gallon and jumbo storage sizes (CX-1 paragraph 20; SX--27; APX-13).

231a. The '872 patented process is also used by Dow to manufacture its

(SX-27(b)-ITC).

231b. Dow additionally produces

(SX-27; SX-1 at 11).

232c. Dow has stated that

(SX-27).

232. Complainant's expert Keegan testified that entry into the consumer market occupied by Dow would be far more difficult for import sales than would entry into the industrial market occupied by Minigrip (Keegan Tr. at 133).

233. Dow's extrusion lines for reclosable plastic bags are (Ausnit Dep. RX-92 at 28-29).

234. Minigrip has licensed to Dow concerning the production of reclosable plastic bags (RX-86).

235. In a study prepared by the Market Research Department of Packaging Digest Dow was found to be a leading supplier of zipper polybags, i.e., reclosable plastic bags (RX-71 at 11).

236. Although imports undersell Minigrip bags by a wide margin (see FF 249, 250, 252, 257-267 below), Meditech has found quotations concerning imported boxed reclosable bags for consumer use to be uncompetitive in price with the similar Dow product (RX-16; CX-112; CX-114).

N 237. A very large majority of reclosable plastic bags and profile tubing made by Minigrip, contain a color line as described in the '120 federal trademark registration. The color line is located near the top of the bag and

tubing between the fastener profiles (CX-1 at 14; Ausnit Tr. at 786-788; Ausnit Statement CX-180 at 7,10; Nocek Dep. RX-91 at 178-179; Nocek Tr. at 506-507; SX-1 at 31-32).

238. Product made by Minigrip for Dow does not contain a color line. Additionally, Dow does not use a color line on product it produces (Ausnit Dep. RX-92 at 67-68; Nocek Tr. at 500; SX-27).

239. Minigrip's sales of bags and tubing to are as follows:

(RX-93).

240. The vast majority of bags and tubing sold by Minigrip with a color line use the color red. If requested by a customer other colors are used to match the customer's printing (Nocek Tr. at 529-530; Ausnit Tr. at 787-7B8).

240a. Keegan testified that Minigrip sells reclosable bags in the industrial products packaging industry, which excludes manufactures of consumer packaging products, including ZIPLOC reclosable bags, with which Minigrip does not compete. Such bags are in different markets with distinct marketing mixes, serving different customers and selling in different sizes and quantities. Keegan attested that the great number of Minigrip's gauges, sizes, and special product features would be useless to the consumer, as would the consumer franchise or brand be useless in the industrial market seeking

its range of sizes, gauges, quantities, and features.

(CX-183 at 14-17; Keegan TR at 38-39; Ausnit TR at 127-130).

240b.

(Ausnit TR at 133-134).

240c.

(Ausnit TR at 134-135).

240d. Reclosable plastic bags sold in the industrial market are sold in quantities of 1,000 or more bags per package. In contrast, bags sold for the consumer market, such as to groceries for resale in the unfilled state to the public, are generally sold in quantities of 25 to 60 bags per package (TEO FF 297-298).

240e.

(Ausnit Tr. at 899; Nocek Tr. at 408).

C. Efficient and Economic Operation

241.

(Keegan, CX-178 at 3-4; Ausnit, CX-180 at 18-19; SX-1 Ans. to Int No. 32; Keegan, Tr. at 119).

242. have been installed on a number of extruders at Minigrip's Orangeburg facility to insure on the extruder lines. The plant is air-conditioned to improve extruder speeds and create a working environment that maximizes employee alertness and efficiency especially under summer conditions. The Minigrip plant has its own machine shop which is using the latest technology to . There is an active research and development program to There are resin silos which permit the purchase of resin in efficient bulk quantities.

aid in the production of the products at issue. Minigrip has an active research and development progeram to introduce new (Keegan, CX-178 at 3-4; Ausnit, CX-180 at 18-19; SX-1; Ans to Int. No. 32; Keegan, Tr. at 119).

243.

(Keegan, Tr. at 127).

244. Minigrip's sales per employee in tubing and bag production has increased from $ in 1982 to $ in 1987 (first quarter annualized). The productivity of Minigrip's tubing and bag employees has increased % since 1982, by measure of sales per employee, a basic measure of operating efficiency (Keegan, CX-178 at 5).

245. To provide enough manufacturing space and machinery to meet anticipated demand, Mingrip has increased its plant capacity on four different occasions. Minigrip is now in the process of building a square foot plant in Sequin, Texas, which will start production in the first quarter of (Ausnit, CX-180 at 15-17).

246. Minigrip has a complete R&D facility that includes and a staff of It also has a for designing and programming (Ausnit, CX-180 at 18).

247. Minigrip has an effective Quality Assurance Program, as well as fringe benefits and compensation programs for its employees (SX-1 Ans to Int Nos. 29 and 42).

248. Reclosable plastic bags and tubing have been a profitable product line for Minigrip (CX-181 at Exh. P.D.).

248a. Dow produces reclosable plastic bags at its facilities in

(Hessenaur EX-27(b)-ITC at 2).

248b. Dow replacement costs of equipment is

(Hessenaur EX-27(a)-ITC at 2).

248c. Dow exercises excellent quality control, has established considerable good will in the ZIPLOC franchise, and has excellent safety and fringe benefit programs for all of its employees (Hessenaur SX-27 at 2).

248d. The Dow ZIPLOC Bag Procedure is well recognized in the consumer trade and large amounts are spent on advertising and promoting the ZIPLOC bag franchise (Hessenaur SX-27 at 2).

248e. Dow together with its subsidiaries is known as being a long established, highly reputable chemical company, as is evidenced by Dow's high financial ratings and as illustrated in its annual report (Hessenaur SX-27 at 2)

248f. Dow's product line of reclosable plastic bags manufactured under the '872 patent accounts for annual sales of over $100 million in the consumer market (Hessenaur SX-27 (b)-ITC at 1, TR. at 9).

D. Injury

N 249. Minigrip's independent expert witness Keegan, a professor of international business and marketing at Pace University and an expert in marketing and corporate business strategy, testified that differences in complainant's prices and those offered for reclosable bags made abroad are the result of major cost differences for labor and capital used in manufacturing operations. While the average cost of U.S. plant direct labor is $ an hour, the prevailing wage in Thailand is $.38 an hour, and in Hong Kong $1.50 per hour, resulting in a labor cost advantage of % to Far Eastern bag manufacturers. Minigrip's labor costs are % of manufacturing costs and % of net sales,

Additionally, U.S. capital costs are influenced by OSHA, EPA, and other safety and health regulations which require substantial investments in plant and equipment; comparable regulations generally do not exist in the Far East. Additionally, most of the Far East production countries involved have export incentives including duty

(CX-183 at 1-8; CX-178 at 1-8,10; Tr. at 81, 111-125, 164-166, 172, 188, 195-196, 203-204, 220,222-229; CX-1, Exhibit K thereto).

249a.

(CX-183 at 10-11, 17; TR at 11-15; TR at 37-38).

249c. Keegan compares the situation of Mingrip and its sensitivity to foreign manufactured exports to a "trade cycle" model known in the business literature concerning the progressive standardization and acceptance of a product. As Keegan attested, this applicable model indicates displacement, first of export business, then home market production, caused over time by low cost exports from lesser developed countries. Absent protection of its technology, the domestic reclosable bag industry is in the third phase of this cycle, with Far East producers having already acquired certain markets which had been export markets for the domestic industry, and the U.S. industry in an "absolutely inferior" general cost position (CX-183 at 12-13); TR at 16-31).

N 250. Keegan compared Minigrip's costs for production of its 1.6 mil gauge 3 X 4" size bags with prices of record for imported bags ranging from $ per thousand. Minigrip's production plant cost (not including administration, marketing, or R&D, for comparable bags is according to Dr. Keegan $ per thousand. Based on this Keegan testified that Far East prices are % to % of (CX-183 at 7-8; CX-178; Tr. 185).

251. (Deleted).

252. The destriction of Minigrip as a domestic manufacturer of stock reclosable plastic bags would begin "immediately" upon the substantial importation of bags and the issuance of a decision refusing an exclusion order, as testified by Dr. Keegan at the hearing on the motion for temporary relief. In view of shipping lead times, order lead times, the cost differences and the high value to weight ratio of reclosable plastic bags, Keegan gave the opinion that importers would have a sufficiently long period -- "a window of opportunity," to import a large amount of inventory which

(CX-178; TR. 159; 162-163; 185-187; 235).

N 253.

Tr at 169-170; 199.

254. (Deleted).

N 255. Respondent Hogn Ter of Taiwan has fifteen extruder lines for reclosable bag production which utilize air jets directed onto the profiles, of which only ten lines were operating at the time of the visit of Minigrip's Nocek to the plant. Hogn Ter also has 22 bag making machines and three color gravure printing presses for printing on the bags.

(CX-179 Ex. A at 5, & Ex. B, Ex. 30 thereto; RX-60; RX-75 at 2).

256. (Deleted).

N 257.

(RX-75 at 3; SX-20 at 5; CX-179, Exhibits A, 7 thereto).

N 258. Respondent C.A.G. has offered reclosable plastic bags for sale and exportation to Minigrip's domestic customer KCL (CX-179 at 4 & Ex. 4 thereto).

258a. Respondent C.A.G. submitted a price quotation for reclosable plastic bags to Different prices are quoted for bags with a color line and without a color line, the color line bags being higher in cost. C.A.G. offers 27 sizes of bags, and states in its quotation that it can supply bags printed with a white stripe for printing. Following are C.A.G. prices CIF Los Angeles per thousand pieces, as compared with

:

(CX-179, Exs A,1 thereto; SX-20).

258a. Minigrip's Nocek visited respondent C.A.G. in Singapore in September, 1986. C.A.G. is an agent for Siam Import. C.A.G.'s Ng admitted previously exporting bags to the U.S. which were not stopped by customs (CX-179, Ex. B at 3-4; RX-68).

259. (Deleted).

260. During the visit of Minigrip's Nocek to Hogn Ter's plant in October, 1986 only 10 of 15 extruder lines for making reclosable plastic bags were operating, indicating their excess capacity (Tr. 546; CX-179, Ex. A thereto 5).

N 261.

(RX-75 at 1; SX-20)

N 261.

(RX-65).

N 262.

(RX-65).

263 to 264. (Deleted).

N 265. Minigrip's annual sales of reclosable bags and tubing amounted to $, with annual sales of bags (RX-83).

N 266.

267 to 269. (Deleted).

N 270.

(RX-65).

271. Respondent Chang Won of South Korea has one operating extrusion line with a color line extruder attached, one bag making machine, 3 roto-gravure presses for printing on the reclosable bag, and employs 20 workers. It has a small export business and is only operating at 50% capacity. The plant manager of Chang Wong indicated to Minigrip's Nocek that Chang Wong is interested in export of bags to the U.S. and admitted the avility to expand present capacity by 2.5 million bags a month (SX-11; CX-179, Ex. A thereto at 4; RX-56).

N 272. Respondents Ideal and Ta Sen, as well as settling respondent Lien Bin, all of Taiwan are members of the Taiwan "Plastic Bag Union" which is an association set up for the purpose of exporting reclosable plastic bags, as represented at a meeting with Minigrip's Nocek. As attested by Nocek, these manufacturers stated to Nocek their desire to export as many reclosable bags as possible, as soon as possible to the U.S.; they claimed that this desire was shared by many others too. Such statements of an indefinite future intent to export, apparently once the exclusion order was lifted, are not probative of actual importation. However, this testimony indicates a belief by these Taiwanese manufacturers in the availability of a U.S. market for Far East imports of reclosable plastic bags, and are probative of the feasibility of

such exports to the U.S. Nocek represented that no supplier of equipment that he was aware of offered equipment without such air jets; however, Nocek did not testify that he was aware of all such (Far East) equipment suppliers; nor did he testify that these particular respondents actually obtained their equipment from the equipment suppliers he knew. Members of this Plastic Bag Union presently manufacture reclosable bags with a color line thereon and Nocek saw such samples at this meeting (CX-179 at 5-6).

N 273. Samples of Ideal's reclosable plastic bags obtained show use of a color line (CX-179, Exhibit B, Ex. 30 thereto; CX-6).

N 274. Respondent Lien Bien's current annual production capacity is 500 tons of reclosable plastic bags. Samples of Lien Bien's reclosable plastic bags contained a color line (CX-179, Ex. B, Ex. 30 thereto).

N275. Samples of Ta Sen's reclosable plastic bags obtained show use of a color line (CX-179, Ex. B, Ex. 30 thereto).

N276. Respondent Kwang Il's sales chief Mr. Lee met with Minigrip's Nocek and advised him that at full capacity the South Korean company could manufacture 16 million small sized reclosable plastic bags a month. The Kwang Il plant contained four extruders which each had an air jet directed at the profile, and bag making machines and 2 multicolor gravure presses to print colors on the bags. Lee indicated an interest to Nocek in exporting bags to the U.S., and that a color line bags are produced. Domestic (South Korean) demand consumed 90% of Kwang Il's present production of 8 million bags per month, according to Lee, but he indicated that production could be doubled and an additional 8 million bags per month produced by going to 24 hour shifts. Kwang Il already exports to Canada, Japan and other Asian countries and employs 30 workers (CX-179 at 6 & Ex. 9 thereto; RX-62).

N 277. Respondent Lim Tai's factory near Bangkok contained 4 reclosable bag extruders with adjustable air jets blowing air jets onto the profiles and color line extruding equipment on 3 of the 4 extruders. Lim Tai had 6 reclosable bag converting machines and a gravure printing press for multicolor printing on bags. This company indicated to Minigrip's Nocek a "keen interest in" and intent to export reclosable bags to the U.S. (CX-179 at 7; RX-66).

N 278. Respondent Rol-Pak of Malaysia advised Minigrip's Nocek that Rol-Pak presently makes approximately 20-25 million bags per month for export (occupying 2 and 1/2 to 3 20 foot sized containers) using air jets blowing on the extruded profiles to control their shape. It has five profiled tubing extruders, 2 color line extruders, 12 reclosable bag making converter machines, and 3 multicolor presses available for color printing of bags. It has 30 employees working in two shifts around the clock.

Rol-Pak now exports reclosable bags to the U.K., France, Denmark and West Germany where patents have recently expired. Rol-Pak is represented by an export trading company (CX-179 at 7 & Exhibit 13 thereto; SX-12; RX-69).

278a.

(CX-179 at Ex. 13).

N279. Minigrip's Nocek visited the Bangkok factory of Siam Import observing adjustable air jets directed at extruded profiles and color line extrusion on its 9 extrusion lines in two buildings. Siam Import has 20 bag converting machines. Siam Import has four gravure multi-color printing presses for providing printed bags. Eighty employees work three shifts a day in a six day work week (CX-179 at 7; RX-67).

279a. Siam Imports of Thailand has a new large and modern factory which, it reported to Minigrip's Nocek, currently exports 40% of its production and plans to increase this amount to 50% of its production. Siam Imports produces 750 million total reclosable plastic bags a year with 300 million in exports, expandible to 375 million in exports. In meeting with Minigrip's Nocek Siam Import's representatives stated a desire and intent to export to the U.S. (RX-67).

N 280. Focus Taiwan Corporation, the exclusive selling agent for and a division of now settled and terminated respondent Gideon Plastic, has solicited sales in the U.S. of imported reclosable plastic bags described as "plain minigrip bags." In its promotional literature Focus indicated that it has obtained modern extrusion,printing and conversion facilities and has a monthly production of nearly 300 metric tons of finished product.

Samples of Gideon reclosable plastic bags with a color line were obtained (CX-179 Ex. A. at 8, & Ex. 18 thereto, & Ex. B--30; SX-24; RX-93).

N 281. Focus sent to the U.S. correspondence soliciting orders of reclosable zipper "zip lock" bags. It indicated that Gideons had obtained modern facilities from West Germany and had a total monthly production of

nearly 300 metric tons of various plastic bags. It stated that its prices were for "plain minigrip bags", indicating use of a color line.

(CX-179, Ex. 18 thereto; SX-20 at 5).

282 to 289. (Deleted).

N 290. From 1983-1986 Nina Plastic has made seven entries through U.S. Customs of reclosable plastic bags and in 1985 it imported into the U.S. 5.7 million such bags from Hong Kong. There is no information of record concerning Nina Plastic's supplier or the process of manufacture for its bags. However, Minigrip has seen samples of Nina Plastic's bags containing a color line. From 1983-1986 Nina Plastic has

reclosable plastic bags and in 1985 it

Nina's product line includes anti-static bags, custom size polybags, printed bags, as well as its "easy-seal" recloseable bags, as indicated by its solicitation (CX-179, Ex. A at 9, Ex. 25; SX-21).

290a.

(CX-179, Ex. A, Ex. 25 thereto; SX-20 at 6-7).

290b. In a letter to the Commission Secretary Teck Keung sent samples of reclosable plastic bags, stating its (untimely) contention that the bags do not infringe the patent. Teck Keung candidly requests exemption from any exclusion order:

> If you will finally decide to extend the Exclusion Order, we wish to be excluded from the Exclusion Order. We will limit ourselves to ship to U.S.A. maximum 30,000 kgs. of bags per month. Kindly approve this request.

Teck Keung then has a production capacity of at least 30 thousand kilograms of bags per month, 360,000 kgs. per year. Respondent C.A.G.'s price list of record indicates that its medium sized 6x9 inch sized bags weigh 4.01 kgs. per thousand. Therefore Teck Keung's stated annual export capacity is at least approximately 89 million reclosable plastic bags. [360,000/4.01 = 89,775 bags in thousand units. C.A.G. bags range in a weight of .3 per thousand 2x2" bags, to 14.27 kgs per thousand 12x16" bags] (SX-28; CX-179, Ex. A, 1 thereto).

290c.

(SX-21 at 5-7).

N 291.

(SX-21; SPX-5; CX-179, Ex. B., Ex. 30).

292. (Deleted).

N 293. There is no information of record concerning the manufacturer of the reclosable bags imported by Insertion, or the process of their manufacture, or any use of the color line thereon. Insertion imported approximately $18,000 worth of reclosable plastic bags which were refused entry in 1984-1986 (SPX-5; SX-21).

N 294. Settled and now terminated respondent Euroweld has reclosable plastic bags with a color line. At least three shipments of imported bags have been imported by Euroweld. (SPX-5; CX-179 Ex. A at 8-9 & Ex 20, & Ex. B, Ex. 30; SPX-3).

295. Minigrip's Nocek testified concerning several Far East reclosable bag manufacturing equipment suppliers. A) Siusco Enterprise Ltd. of Hong Kong-- The Director of Siusco, Mr. Siu indicated that they had sold extrusion and bag making equipment to mainland China (3-4 units), East Africa (1 unit), and several Hong Kong manufacturers. Mr. Siu indicated that profile shape is controlled on its machines through the use of air jets directed at the profiles. Siusco's brochure indicates availability of an optional color line (most cases red) color line near the top. B) Lung Meung Machinery Co. of Taiwan-- Officials from Lung Meung advised Minigrip's Nocek that it has sold reclosable bag making equipment to Hong Kong, mainland China and India and a

video tape was shown of its equipment in operation showing color line extrusion and the use of adjustable air jets to control profile shape. Lung Meung advertized its machinery in a Taiwan newspaper as "Zipper (Minigrip) bag making machine" and sells an extruder and bag making machine for $ and a flexographic printing press for $. Lung Meng indicated that it had made one or two reclosable bag making machines per month in 1985 (CX-179, Ex. A at 10-11; RX-61; RX-63; RX-91A, Ex. 35 thereto).

N 296. Settled and now terminated respondent Meditech has imported at least sample reclosable plastic bags bearing a red color line (SPX-9).

297.

(Ausnit Tr. at 906).

298. Consumer reclosable plastic bags sold in grocery stores for consumer use are boxed in quantities of 25-60 (Ausnit Tr. at 907).

N 299.

(Ausnit Tr. at 902).

300.

(RX-75).

N 301.

(Ausnit Tr. 768-771; Nocek Dep. Rx-90 at 45, RX-91 at 142-143).

N 302.

(Ausnit Tr. at 769-773, 798-799; CX-180 at 16; Nocek Dep. 9X-91 at 170-171).

N 303.

(TR at 124-126).

N 304. Nocek and Ausnit, in their trips to manufacturing plants for reclosable bags in the Far East in 1986 and 1982, respectively, have firsthand seen a total of 103 extruder lines for producing profiled plastic tubing (RX-90 at 62-63).

N 305. All the Far East manufacturers which Nocek visited on his 1986 trip, Siam Import, Kwang Il, Chang Won, Lim Tai, Rol Pak, Hogn Ter, and Harbona, stated that they were not operating at full capacity (Nocek Dep. RX-90 at 68; Nocek CX-179, Ex. B, Ex. 27 thereto; SPX-5; SX-21; SX-24)).

305a.

(SPX-5 at 17).

N 306. Minigrip's price sensitive sales of stock reclosable bags in 1986 amounted to units and $ (RX-83).

307.

(Ausnit Tr. at 906).

308. Reclosable bags sold in grocery stores for consumer use are boxed in quantities of 25-60 (Ausnit Tr. at 907).

309. Ausnit testified that it is highly unlikely that its industrial distributors sell in the consumer market because those distributors do not deal with that type of customer (Ausnit Tr. at 902).

N 310.

(SX-20; CX-32).

310a.

(CX-38; SX-20).

N 311.

312. Minigrip's annual sales of domestically produced reclosable plastic bags and tubing were as follows:

(RX-83).

312a.

(RX-83).

313. Dow's annual sales of reclosable plastic bags are approximately $100 million sold through supermarket and similar establishments to retail customers. Bags are sold in four sizes: gallon, quart, sandwich, and jumbo storage bag (CX-1 at 16).

314. The vast majority of complainant's bag, tubing, and zippers contain color lines with the color red. Other colors used include blue, black, green, mauve, orange, brown, gold, and silver; these other colors are used if requested by a customer to match their printing, etc. (Ausnit Tr. at 788).

315. Minigrip's CEO Ausnit testified that its advanced extruding machinery for reclosable plastic bags generally costs Minigrip $ (Ausnit Tr. 755).

316.

317. For a five month period Minigrip's 1986 annual sales would be comparable to $.

318. Chung Kong has equipment to manufacture bags with a red color line, but has not yet exported bags to the U.S. with a color line (CX-65; CX-117; Taheri Tr. at 1019).

319.

Apart from documentary evidence that received sample boxes from there is no evidence that in this investigation have imported reclosable plastic bags suitable for consumer retail sale, in sizes, quantities or packaging suitable for retail sales (CX-106; CX-107; CX-108; CX-109; CX-100; CX-111; CX-112; CX-114; CX-115; -116).

320.

320a.

321. Meditech's Taheri testified that

has equipment for applying a color line to plastic tubing.

Taheri further testified that this process is "quite simple", that the equipment for applying the color line of "any color plastic, or plastic with no color," can be extruded onto the tubing. Taheri indicated that such an applied plastic line at the top of the bag "forms a slight rigid line area to make the opening of the bag easier." Now

aditionally has equipment for applying a color line to plastic bags (Taheri RX-6 at 9-11).

321a. The reclosable plastic bags of CAG and Siam Import, Hogn Ter and Harbona, as well as other importations and solicitations or record, are sold in particular sizes, number of sizes, quantities (sold in units of one thousand), white block or color printed bags, as comparably used by Minigrip for sale in the industrial reclosable bag market to distributors and business customers as packaging for their products. Printed bags contain a panel for packager name, description of contents, etc., such as shown in bags of record (RX-91A, Ex. 7 thereto), and such bags are adapted for industrial packaging applications. Apart from certain sample imports from Chung Kong of its "Pleasure Loc" boxes, imports in this investigation have not been offered or distributed in boxes, packages, or small quantities for consumer use (Nocek CX-179, Ex. A; RX-75; RX-50; CX-10; CX-109; CX-112; CX-114; CX-138; Keegan Tr. at 129-132).

332. (Deleted).

323. has imported reclosable plastic bags from respondent Gideons Plastic (through its agent Focus), and has purchased reclosable plastic bags from which were made from import cut profiled tubing (SX-24; Bruno Tr. at 1126; Taheri Tr. at 1019).

323a. Dow's Hessenaur stated ithat while it has not formally evaluated the effect foreign imports might have on its ZIPLOC bag business, it is anticipated that the initial impact of foreign imports on the reclosable bag business would fall on the private label sector rather than the franchised sector in which Dow and its Ziploc bags is involved, and that it can only be speculated as to the eventual impact imports of foreign made bags would have on the franchise sector of the consumer market. The ZIPLOC brand franchise is well recognized by consumers and large amounts are spend on advertizing and other promotion for the franchise (SX-27).

N 324.

(CX-183 at 3, 18-19; Keegan TR at 31-34, 36-38; Ausnit TR at 135).

N 325.

(CX-183 at 14-17; Keegan TR at 38-39; Ausnit TR at 127-130).

N 326. Dow competes in the consumer market against GLAD brand reclosable bags, as well as with generic type bags. GLAD brand bags made domestically by First Brands (formerly by Union Carbide) have several colored lines

First Brands is in the consumer market for reclosable bags (TR at 131-132).

N 327.

(CX-184; TR at 126-127).

N 328.

(TR at 120-121).

1. The Commission has in rem jurisdiction and subject matter jurisidiction.

2. The Commission has subject matter jurisdiction with respect to the '872 patent and the '120 trademark.

3. The Commission has in personam jurisidction over respondents Insertion, Ka Shing, Nina Plastic, Tracon, Siam Import, Teck Keung and Ideal.

4. Claims 1 to 5 of the '872 patent are not invalid.

5. Claims 1 to 5 of the '872 patent are not unenforceable.

6. The '120 trademark is not invalid.

7. Complainant has sustained its burden in establishing prima facie that respondents C.A.G., Siam Import and Hogn Ter infringe claims 1 and 3 to 5 of the '872 patent.

8. Complainant has sustained its burden in establishing prima facie that respondents Lim Tai and Rol-Pak infringe claims 1 and 5 of the '872 patent.

9. Complainant has sustained its burden in establishing prima facie that respondents Ideal, Ta Sen and Teck Keung infringe claim 1 of the '872 patent.

10. The record establishes prima facie that nonrespondent Harbona infringes claims 1 and 5 of the '872 patent.

11. Complainant has not sustained its burden in establishing prima facie that respondents Insertion, Ka Shing, Nina Plastic and Tracon infringe the '872 patent.

12. Complainant has sustained its burden in establishing prima facie that respondents C.A.G., Hogn Ter, Ideal, Ka Shing, Nina Plastic, Rol-Pak, Siam Import, Lim Tai and Ta Sen and nonrespondent Harbona infringes the '120 trademark.

13. Complainant has not sustained its burden in establishing primia facie that respondents Insertion, Tracon and Teck Keung infringe the '120 trademark.

14. There are two domestic industries involving certain reclosable plastic bags in issue, viz., a domestic industry under the '872 patent and a domestic industry under the '120 trademark.

15. Each of the domestic industries in the investigation is efficiently and economically operated.

16. Importation of certain reclosable plastic bags does have the tendency to injure substantially the domestic industries in issue.

17. There is a violation of section 337.

Based on the foregoing findings of fact, conclusions of law, the opinion, and the record as a whole, and having considered all of the pleadings and arguments presented orally and in briefs, as well as proposed findings of fact, it is the administrative law judge's determination that there is a violation of section 337 in the alleged unauthorized importation into, and sale in, the United States of certain reclosable plastic bags and tubing by reason of alleged infringement of certain claims of the '872 patent and infringement of the '120 trademark with the tendency to destroy or substantially injure an industry efficiently and economically operated in the United States.

The administrative law judge hereby CERTIFIES to the Commission the initial determination, together with the record in this investigation consisting of the following:

1. The transcript of the hearing; and

2. The ALJ Exhibits; and

3. The Exhibits admitted into evidence.

The pleadings of the parties are not certified, since they are already in the Commission's possession in accordance with Commission Rules of Practice and Procedure.

Further it is ORDERED that:

1. In accordance with Rule 210.44(b), all material heretofore marked in camera because of business, financial, and marketing data found by the administrative law judge to be cognizable as confidential business information under Rule 201.6(a), is to be given in camera treatment from the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the initial determination which contain confidential business information to be deleted from the public version of the initial determination no later than Wednesday February 10, 1988. If no comments are received from a party it will mean that the party has no objection in removing the confidential status, in its entirety, from this initial determination.

3. This initial determination shall become the determination of the Commission forty-five (45) days after the service thereof, unless the Commission, within forty-five (45) days after the date of filing of the initial determination shall have ordered review of the initial determination or certain issues therein pursuant to 19 C.F.R. 210.54(b) or 210.55 or by order shall have changed the effective date of the initial determination.

Paul J. Luckern
Administrative Law Judge

Issued: January 29, 1988

Administrative Law Judge Exhibits

ALJ Ex. 1 Photocopies of returned receipt cards received from respondents.

ALJ Ex. 2 Dockets Section records of returned mailings addressed to Chang Won and Kwang Il.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.
Before Paul J. Luckern
Administrative Law Judge

In the Matter of	)	
	)	
CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING	)	Investigation No. 337-TA-266
	)	

COMMISSION INVESTIGATIVE STAFF'S DOCUMENTARY AND PHYSICAL EXHIBIT LIST

Documentary Exhibits

Exhibit No.	Description
SX-1(C)*	Complainant Minigrip Inc.'s Response to the First Set of Interrogatories and Request for the Production of Documents of the Commission Investigative Staff of the United States International Trade Commission
SX-2	Response of Meditech International Inc. and Polycraft Corporation to the Complaint and Notice of Investigation
SX-3	Response of Euroweld Distributing to the Complaint and Notice of Investigation
SX-4(C)	Response of Respondents, Meditech International Co. and Polycraft Corporation, to the First Set of Interrogatories of the Commission Investigative Staff of the United States International Trade Commission
SX-5(C)	Response of Respondent, Euroweld Distributing Inc., to the First Set of Interrogatories of the Commission Investigative Staff of the United States International Trade Commission

*(C) Denotes Confidential

SX-6(C)	Minigrip's Answer to Question 31 of the First Set of Interrogatories and Request for the Production of Documents of the Commission Investigative Staff of the United States International Trade Commission
SX-7(C)	Invoice from Chung Kong Industrial Co., Ltd. to Meditech International Company dated 27 March 1985 No. 11216
SX-8(C)	Chung Kong's prices to Meditech
SX-9(C)	Letter dated January 15, 1986 to Mr. E.C. Bruno of Polycraft Corporation/Meditech, Denver, Colorado From Bob Leeper of R.E. Leeper Enterprises, Inc. Re. Sale of "Zip-Lock" Bags
SX-10(C)	Purchase Order Dated January 15, 1986 from R.E. Leeper Enterprises, Inc.
SX-11(C)	
SX-12(C)	
SX-13(C)	September 27 telex from Chung Kong to Meditech, Re. Width and Thickness of Reclosable Plastic Bags
SX-14(C)	Letter dated August 21, 1985 to Chung Kong Industrial Co. from Mic International Incorporated, Re. ITC litigation and order of additional bags
SX-15(C)	Telex from Meditech to Chung Kong Industrial, Re. Bags w/Red Strip
SX-16(C)	January 30 Telex from Meditech to Chung Kong, Re. Shipments of Bags
SX-17(C)	Purchase Order No. 1513 dated September 3, 1986 from RD Plastics to Meditech International Company
SX-18(C)	Letter dated June 25, 1987 to Dr. Cheri Taylor from Larry Klayman, Re. samples of reclosable plastic bags

SX-19(C)	Complainant Minigrip Inc.'s Response to the Second Set of Interrogatories of the Commission Investigative Staff of the United States International Trade Commission
SX-20(C)	Minigrip Price Lists
SX-21(C)	Letter dated June 9, 1987 to Peter Baish of the United States Customs from Dr. Cheri Taylor, Re. computer search; Memo dated July 2, 1987 to Dr. Cheri Taylor from Peter Baish, Re. results of computer search; and a two page document listing importers of reclosable plastic bags from 1984 to present.
SX-22(C)	Hold Harmless Agreement between Meditech and RD Plastics
SX-23(C)	Five invoices to RD Plastics for reclosable plastic bags from Meditech International Company for the period November 12, 1986 to June 23, 1987
SX-24(C)	Memo dated July 7, 1987 to United States International Trade Commission from Peter Baish, Re. search results; and a one page document listing importations of reclosable plastic bags done by RD Plastics and Euroweld Corporation
SX-25(C)	Response and Objections of Respondents Meditech International Company and Polycraft Corporation To Complainant's First Set of Interrogatories
SX-26(C)	First Set of Interrogatories of the Commission Investigative Staff of the United States International Trade Commission Propounded To All Respondents
SX-27	Version A (Public) of Lloyd Hessenaur Affidavit from Dow

SX-27(C)	Version (Conf.) of Lloyd Hessenaur Affidavit from Dow
*SX-27(B)(C)-ITC	ITC Version C of Lloyd Hessenaur Affidavit from Dow -- Under Protective Order ITC access only.
SX-28	Letter to the Commission Secretary from Teck Keung, dated August 12, 1987
SX-29	Exhibit List (Permanent Relief Hearing)

Physical Exhibits

SPX-1	Reclosable Plastic Bag Sample of Meditech
SPX-2	Reclosable Plastic Bag Sample of Meditech
SPX-3	Reclosable Plastic Bag Sample of Euroweld
SPX-4(C)	Deposition of Steven Ausnit
SPX-5(C)	Computer print-out from United States Customs
SPX-6(C)	Supplemental computer print-out from United States Customs
SPX-7	Reclosable Plastic Bag Samples of R.E. Leeper Enterprises, Inc.
SPX-8	Reclosable Plastic Bag Samples of RD Plastics
SPX-9	Reclosable Plastic Bag Samples, with colorline trademark, of Meditech
SPX-10	Sample of Teck Keung Reclosable Plastic Bag
SPX-11	Sample of Minigrip Reclosable Plastic Bag
SPX-12	Sample of Dow Reclosable Plastic Bag
SPX-13	1986 Annual Report of Dow Chemical Company
SPX-14	Clear Plastic Sheet Material

July 20, 1987

Inv. No. 337-TA-266
FINAL EXHIBIT
LIST OF RESPONDENTS MEDITECH

Exhibit No.	Description	Sponoring Witness
RX - 1	Witness Statement of Professor Charles A. Garris	Charles A. Garris
RX - 2	Resume of Charles A. Garris	Charles A. Garris
RX - 3	U. S. Patent No. 3,945,872 (Patent in Suit) with wrapper as attached to the Complaint	Charles A. Garris
RX - 4	Reexamination Certificate of Patent No. 3,945,872	Charles A. Garris
RX - 5	U.S. Patent No. 26,991 (Luca)	Charles A. Garris
RX - 6-C	Witness Statement of Nossi Taheri	Nossi Taheri
RX - 7-C	Handwritten memo dated August 2, 1985 to Ed Bruno from Bob Leeper	Nossi Taheri
RX - 8-C	Handwritten note dated February 7, 1986 to Ed Bruno from Bob Leeper	Nossi Taheri
RX - 9-C	Letter dated January 15, 1986 to Ed Bruno from Bob Leeper	Nossi Taheri
RX - 10-C	Letter to Nossi Taheri from Wilson Ip	Nossi Taheri
RX - 11-C	Hand drawing with handwritten notes dated September 18, 1985	Nossi Taheri

RX - 12-C	Letter dated April 23, 1986 to Leo Aubel from Nossi Taheri	Nossi Taheri
RX - 13-C	Letter dated May 5, 1986 to Leo Aubel from Nossi Taheri	Nossi Taheri
RX - 14-C	Letter dated May 8, 1986 to Leo Aubel from Nossi Taheri	Nossi Taheri
RX - 15-C	Handwritten notes dated July 30, 1986 regarding Chung Kong effort to produce non-infringing bags	Nossi Taheri
RX - 16-C	Letter dated September 6, 1985 to Wilson Ip from Nossi Taheri	Nossi Taheri
RX - 17-C	Letter dated November 17, 1986 to Leo Aubel from Nossi Taheri	Nossi Taheri
RX - 18-C	Handwritten letter dated February 6, 1987 to Leo Aubel from Nossi Taheri	Nossi Taheri
RX - 19-C	Note dated June 6, 1985 between Landmark National Bank and Small Business Administration	Nossi Taheri
RX - 20-C	Notice of Acceleration of Due Date of Note and Demand for Payment dated June 15, 1986 to Meditech from Small Business Administration to Meditech; Notice of Acceleration of Due Date of Note and Demand for Payment dated June 16, 1987 to Meditech from Small Business Administration	Nossi Taheri

RX - 21-C	Meditech balance sheet and income statement dated December 31, 1986	Nossi Taheri
RX - 22-C	Offer to Purchase dated June 27, 1987 between Meditech and Chung Kong Industrial Co., Ltd.	Nossi Taheri
RX - 23-C	Offer to Purchase dated June 26, 1987 between Meditech and Keron Industrial Co.	Nossi Taheri
RX - 24-C	Offer to Purchase dated June 27, 1987 between Meditech and Daewang International Corp.	Nossi Taheri
RX - 25-C	Agreement dated August 12, 1985 between Meditech and Chung Kong Industrial Co., Ltd.	Nossi Taheri
RX - 26-C	Telex dated February 27, 1987 to Wilson Ip from Nossi Taheri	Nossi Taheri
RX - 27-C	Agreement dated May 11, 1987 between Meditech and Keron Industrial Co., Ltd.	Nossi Taheri
RX - 28-C	Agreement dated May 6, 1987 between Meditech and Daewang International Corp.	Nossi Taheri
RX - 29-C	Photo - Chung Kong Industrial Co., Ltd.	Nossi Taheri
RX - 30-C	Photo - Keron Industrial Co., Ltd.	Nossi Taheri
RX - 31-C	Photo - Daewang Industrial Co., Ltd.	Nossi Taheri
RX - 32-C	Marked photo - Chung Kong Industrial Co., Ltd.	Nossi Taheri
RX - 33-C	Marked photo - Keron Industrial Co., Ltd.	Nossi Taheri

RX - 34-C	Marked photo - Daewang Industrial Co., Ltd.	Nossi Taheri
RX - 35-C	Current annual maximum capacity of Keron Industrial Co., Ltd.	Nossi Taheri
RX - 36	Letter dated June 22, 1986 to Governor Richard Lamm (Colorado) from Sergio Abara	Nossi Taheri
RX - 37	Letter dated February 26, 1986 to Nossi Taheri from the Honorable Patricia Schroeder	Nossi Taheri
RX - 38	Letter dated June 2, 1986 to distributors from Robert Nocek	Nossi Taheri
RX - 39-C	Handwritten notes by Gale Bender re: converstions with Jerry Schneiderman and Bob Curtis	Nossi Taheri
RX - 40-C	Witness Statement of E. C. Bruno	Edward C. Bruno
RX - 41	U.S. Patent No. 29,208	Edward C. Bruno
RX - 42	U.S. Patent No. 3,380,481 (Kraus); and retyped marked copy of Column 6, lines 54-75 and Claims 1 and 2	Edward C. Bruno
RX - 43	Photostatic copy of bag with colorline	Edward C. Bruno (Withdrawn, TR at 321)
RX - 44	Photostatic copy of bag with colorline and label	Edward C. Bruno (Withdrawn, TR at 321)
RX - 45	Sample of bag with yellow and blue color lines	Edward C. Bruno (withdrawn at 323)
RX - 46	Trademark Registration 946,120 (colorline)	Edward C. Bruno

RX - 47-C	Witness Statement of Wilson Ip	Wilson Ip
RX - 48-C	Telex to Chung Kong Industrial Co., Ltd. from Nossi Taheri	Wilson Ip
RX - 49-C	Fax memo dated March 31, 1987 to Nossi Taheri from Wilson Ip	Wilson Ip
RX - 50-C	Letter dated September 6, 1985 to Wilson Ip from Nossi Taheri	Wilson Ip
RX - 51-C	Telex dated January 30 to Wilson Ip	Wilson Ip
RX - 52-C	Letter dated March 11, 1987 to Wilson Ip from Nossi Taheri	Wilson Ip
RX - 53-C	Witness Statement of Darryl Chang	Darryl Chang
RX - 54-C	Witness Statement of S.Y. Lee	S. Y. Lee
RX - 55	Minigrip Affidavit of Robert S. Nocek in support of the Complaint of Minigrip, Inc.	Robert S. Nocek
RX - 56-C		Robert S. Nocek
RX - 57-C		Robert S. Nocek
RX - 58-C		Robert S. Nocek

RX - 59-C	Robert S. Nocek
RX - 60	Robert S. Nocek
RX - 61-C	Robert S. Nocek
RX - 62-C	Robert S. Nocek
RX - 63-C	Robert S. Nocek
RX - 64-C	Robert S. Nocek

RX - 65-C	Robert S. Nocek
RX - 66-C	Robert S. Nocek
RX - 67-C	Robert S. Nocek
RX - 68-C	Robert S. Nocek
RX - 69-C	Robert S. Nocek
RX - 70-C	Robert S. Nocek
RX - 71-C	Robert S. Nocek

RX - 72-C	Minigrip's current plant description attached as Exhibit L to Complaint	Robert S. Nocek
RX - 73-C		Robert S. Nocek
RX - 74-C	Minigrip Texas Plant Budget Building and Sitework	Robert S. Nocek
RX - 75-C		Robert S. Nocek
RX - 76-C	Minigrip Sales Figures attached as Exhibit R to Complaint	Robert S. Nocek
RX - 77-C	Minigrip Capital Investment Chart attached as Exhibit Q to Complaint	Robert S. Nocek
RX - 78-C	Minigrip Profit Figures attached as Exhibit P to the Complaint	Robert S. Nocek
RX - 79-C	Minigrip Production and Sales Figures attached as Exhibit O to the Complaint	Robert S. Nocek
RX - 80-C	Minigrip Price List attached as Exhibit N to the Complaint	Robert S. Nocek
RX - 81-C	List of Minigrip Employees attached as Exhibit M to the Complaint	Robert S. Nocek
RX - 82-C	Minigrip Plant Capacity Analysis	Robert S. Nocek
RX - 83-C	Minigrip Capacity Numbers of Bags attached as Exhibit K to the Complaint	Robert S. Nocek

RX - 84-C	Minigrip Corporate Charts	Robert S. Nocek
RX - 85-C		Robert S. Nocek
RX - 86-C		Robert S. Nocek
RX - 87	Photocopies of plastic bags and advertisements	Robert S. Nocek
RX - 88	Drawings - undated (5 pages)	Robert S. Nocek
RX - 89	Supplement to Nocek Affidavit	Robert S. Nocek
RX - 90	Deposition of Robert S. Nocek (Volume 1)	Robert S. Nocek
RX - 91-C	Deposition of Robert S. Nocek (Volume 2)	Robert S. Nocek
RX - 91-A-C	Exhibits to Deposition of Robert S. Nocek (Vols. 1&2)	Robert S. Nocek
RX - 92-C	Deposition of Steven Ausnit	Steven Ausnit
RX - 93-C		Steven Ausnit
RX - 94-C	Complainant's Response To Respondents' Request for Admissions	Robert S. Nocek Steven Ausnit
RX - 95	Associated Bag Company Document Entitled "Polyethylene Bags and Products" (Remarked - Was RX-93C)	Edward C. Bruno
RX - 96	Complainant's First Set of Interrogatories and Requests to Produce	Nossi Taheri

RX - 97	Letter of June 26, 1987 Forwarding Samples of Recloseable Plastic Bags of Keron Industrial Co., Ltd., and Daewang International Company (with samples).	Nossi Taheri

PHYSICALS EXHIBITS

Exhibit No.	Description	Sponsoring Witness
RPX - 1C	Video-Cassette of Chung Kong Industial Co., Ltd.	Wilson Ip (Not Accepted)
RPX - 2C	Video-Cassette of Keron Industrial Co., Ltd.	Darryl Chang
RPX - 2A-C	Still Photographs of Certain Frames Of Video-Cassette Of Keron Industrial Co., Ltd.	Darryl Chang
RPX - 3C	Video-Cassette of Daewang Industrial Co., Ltd.	S.Y. Lee (Not Accepted)
RPX - 4	Recloseable Plastic Bag With Multi-Colored Color Line Of Union Carbide (Glad Bag).	Steven Ausnit
RPX - 5	Recloseable Plastic Bag With Color Line, Provided By Complainant (Bates No. 000625).	Steven Ausnit

- Unless indicated, all exhibits have been entered into evidence, unless a notation indicates they are withdrawn. (See attached list of temporary relief hearing transcript notations concerning handling of exhibits, provided for the convenience of the parties.).

b:[3]Exhibit

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.
Before Judge Paul Luckern
Administrative Law Judge

----------X

In the Matter of

CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING

Investigation No. 377-TA-266

----------X

COMPLAINANT MINIGRIP'S EXHIBITS ADMITTED INTO EVIDENCE

KANE, DALSIMER, SULLIVAN, KURUCZ, LEVY, EISELE and RICHARD
420 Lexington Avenue, Ste. 2710
New York, New York 10170-0071
(212) 687-6000

OF COUNSEL:

GERALD LEVY, ESQ.
RONALD R. SANTUCCI, ESQ.
JAMES G. MARKEY, ESQ.

Documentary Exhibits

CX-1.	Complaint and Non-Confidential Exhibits A-I, S thereto.
CX-2.	Response of Meditech International Inc. and Polycraft Corporation to First Requests For Admission.
CX-3.	Response of Euroweld Distributing to the Complaint and Notice of Investigation.
CX-4.	Response of Certain Taiwanese Manufacturers to the Complaint and Notice of Investigation.
CX-5.	Certified Copy of Re-examination Certificate for U.S. Patent No. 3,945,872.
CX-6.	Statement of Capacity of Respondent Ideal Produced in Response to Investigative Staff's Motion to Supplement Responses by Counsel for Respondents Meditech and Polycraft.
CX-7.	Statement of Capacity of Respondent Keron Produced in Response to Investigative Staff's Motion to Supplement Responses by Counsel for Respondents Meditech and Polycraft.
CX-8.	Statement of Capacity of Respondent Lien Bin Produced in Response to Investigative Staff's.
	The following documents were produced by Counsel for Respondents Meditech, Polycraft and Euroweld. Respondents production number for the respective document is listed for the designated exhibit number:
CX-9.	Production No. 000056. Letter from Mr. Yip of Chung Kong to Mr. Taheri dated November 11, 1984.

Documentary Exhibits

CX-10. Production No. 000055. Telex from Mr. Taheri to Mr. Yip of Chung Kong dated December 29th.

CX-11. Production No. 000074. Chung Kong type A reclosable bags price quotations for various sizes dated February 1, 1985.

CX-12. Production No. 000075. Chung Kong types B and C reclosable bags price quotations for various sizes dated February 1, 1985.

CX-13. Production No. 000053. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated February 8th and February 14, 1985.

CX-14. Production No. 000254. The first page of a letter from Mr. Taheri to Mr. Ip of Chung Kong dated February 8, 1985.

CX-15. Production No. 000255. The second page of a letter from Mr. Taheri to Mr. Ip of Chung Kong dated February 8, 1985.

CX-16. Production No. 000052. Telex from Mr. Taheri to Mr. Ip of Chung Kong.

CX-17. Production No. 000051. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated February 19, 1985.

CX-18. Production No. 000050. Letter from Mr. Ip of Chung Kong to Meditech dated February 1, 1985.

CX-19. Production No. 000048. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated February 27th.

CX-20. Production No. 000148. Letter from Mr. Taheri to Mr. Leeper of Polycraft dated March 1, 1985.

CX-21. Production No. 000147. Letter from Mr. Taheri to Mr. Bruno.

Documentary Exhibits

CX-22. Production No. 000047. Handwritten purchase order from Mr. Leeper of Polycraft concerning reclosable bags dated March 5, 1985.

CX-23. Production No. 000049. Handwritten list of probable sizes for the first order.

CX-24. Production No. 000046. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated March 6, 1985.

CX-25. Production No. 000045. Telex from Mr. Ip of Chung Kong to Meditech dated March 12, 1985.

CX-26. Production No. 000216. Telex from Mr. Ip of Chung Kong to Meditech dated March 12, 1985.

CX-27. Production No. 000044. Telex from Chung Kong to Meditech dated March 14, 1985.

CX-28. Production No. 000215. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated March 15th.

CX-29. Production No. 000214. Handwritten prices for both f.o.b. Hong Kong and c.i.f. Long Beach dated March 18, 1985.

CX-30. Production No. 000212. Handwritten copy of telex sent from Mr. Taheri to Chung Kong of telex No. 78036698.

CX-31. Production No. 000205. List of reclosable P.E. bag sizes and quantities signed by Mr. Taheri and dated March 19, 1985.

CX-32. Production No. 000211. Telex from Chung Kong to Meditech dated March 18, 1985.

CX-33. Production No. 000210. Telex from Chung Kong to Meditech dated March 19, 1985.

Documentary Exhibits

CX-34. Production No. 000209. Invoice from Chung Kong to Meditech dated March 20, 1985.

CX-35. Production No. 000208. Letter from Mr. Ip of Chung Kong to Mr. Taheri dated March 21, 1985.

CX-36. Production No. 000202. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated March 25th.

CX-37. Production No. 000201. Letter from Mr. Taheri to Mr. Ip of Chung Kong.

CX-38. Production No. 000183. Invoice from Chung Kong to Meditech dated April 25, 1985.

CX-39. Production No. 000153. Invoice from Chung Kong to Meditech dated May 14, 1985.

CX-40. Production No. 000207. Confirmation Of Wire from the Hong Kong and Shanghai Banking Corporation re document of credit re reclosable bags consigned to Meditech dated March 27, 1985.

CX-41. Production No. 000206. Confirmation Of Wire from the Hong Kong and Shanghai Banking Corporation re document of credit applied for by Meditech to benefit Chung Kong dated March 27, 1985.

CX-42. Production No. 000129. Invoice from Chung Kong to Meditech dated March 27, 1985.

CX-43. Production No. 000199. Telex from Mr. Ip of Chung Kong to Meditech dated April 9, 1985.

CX-44. Production No. 000198. Telex from Meditech to Mr. Ip of Chung Kong dated April 10th.

Documentary Exhibits

CX-45. Production No. 000197. Telex from Mr. Ip of Chung Kong to Meditech dated April 11, 1985.

CX-46. Production No. 000195. Confirmation of Wire from the Hong Kong and Shanghai Banking Corporation re a document of credit to the benefit of Chung Kong regarding the shipment of reclosable bags.

CX-47. Production No. 000196. Telex from Mr. Ip of Chung Kong to Meditech dated April 12, 1985.

CX-48. Production No. 000194. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated April 12th.

CX-49. Production No. 000181. U.S. Customs Service Entry Summary re plastic bags imported by Meditech dated June 4, 1985.

CX-50. Production No. 000169. Certificate of Origin and Declaration by the Exporter re a shipment from Chung Kong to Meditech dated April 25, 1985.

CX-51. Production No. 000175. Certificate of Origin and Declaration by the Exporter re a shipment from Chung Kong to Meditech dated April 25, 1985.

CX-52. Production No. 000168. A Chung Kong Packing List re a shipment of P.E. bags to Meditech dated April 25, 1985.

CX-53. Production No. 000167. Invoice from Chung Kong to Meditech dated April 25, 1985.

CX-54. Production No. 000166. Chung Kong Packing List re a shipment of P.E. bags to Meditech dated April 25, 1985.

Documentary Exhibits

CX-55. Production No. 000165. Invoice from Chung Kong to Meditech dated April 25, 1985.

CX-56. Production No. 000121. Invoice from Chung Kong to Meditech dated April 25, 1985.

CX-57. Production No. 000191. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated April 29th.

CX-58. Production No. 000190. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated April 30, 1985.

CX-59. Production No. 000069. Letter from Mr. Taheri to Mr. Bruno containing price lists dated May 1, 1985.

CX-60. Production No. 000179. Distribution Services Ltd. cargo receipt for shipment from Chung Kong to Meditech dated May 1, 1985.

CX-61. Production No. 000178. Distribution Services Ltd. bill of lading for shipment from Chung Kong to Meditech dated May 3, 1985.

CX-62. Production No. 000171. Distribution Services Ltd. bill of lading for shipment from Chung Kong to Meditech dated May 3, 1985.

CX-63. Production No. 000164. First Interstate Bank of Denver Letter of Credit Negotiation Debit Advice re payment from Meditech to Chung Kong dated May 15, 1985.

CX-64. Production No. 000163. First Interstate Bank of Denver Letter of Credit Negotiation Debit Advice re payment from Meditech to Chung Kong dated May 15, 1985.

Documentary Exhibits

CX-65. Production No. 000043. Telex from Chung Kong to Mr. Taheri dated May 17, 1985.

CX-66. Production No. 000042. Telex from Mr. Taheri to Mr. Ip of Chung Kong.

CX-67. Production No. 000150. Letter from Mr. Taheri to Charles M. Schayer & Co. dated May 21, 1985.

CX-68. Production No. 000159. Chung Kong packing list re shipment of P.E. bags to Meditech dated May 24, 1985.

CX-69. Production No. 000160. Certificate of Origin and Declaration by the Exporter re shipment of P.E. bags from Chung Kong to Meditech dated May 24, 1985.

CX-70. Production No. 000155. Certificate of Origin and Declaration by the Exporter re shipment of P.E. bags from Chung Kong to Meditech dated May 24, 1985.

CX-71. Production no. 000154. Chung Kong packing list re shipment of P.E. bags to Meditech dated May 24, 1985.

CX-72. Production No. 000158. Invoice from Chung Kong to Meditech dated May 24, 1985.

CX-73. Production No. 000189. Telex from Mr. Ip of Chung Kong to Meditech dated June 1, 1985.

CX-74. Production No. 000157. Distribution Services Ltd. cargo receipt re shipment of P.E. bags from Chung Kong to Meditech dated June 1, 1985.

CX-75. Production No. 000156. Distribution Services Ltd. cargo receipt re shipment of P.E. bags from Chung Kong to Meditech dated June 1, 1985.

Documentary Exhibits

CX-76. Product No. 000141. U.S. Customs Service Notice of Redelivery of reclosable P.E. bags imported by Meditech dated June 4, 1985.

CX-77. Production NO. 000120. U.S. Customs service Notice of Redelivery of reclosable P.E. bags imported by Meditech dated June 4, 1985.

CX-78. Production No. 000119. U.S. Customs Service Transportation Entry and Manifest of Goods Subject to Customs Inspection and Permit re shipment of P.E. bags from Chung Kong to Meditech dated June 4, 1985.

CX-79. Production No. 000162. Distribution Services Ltd. combined transport bill of lading re shipment of P.E. bags from Chung Kong to Meditech dated June 6, 1985.

CX-80. Production No. 000143. Handwritten document re cost of P.E. bags to Meditech and sale of same dated June 6, 1985.

CX-81. Production No. 000176. Shipping order for DSL to transport P.E. bags for Meditech to Polycraft dated June 6, 1985.

CX-82. Production No. 000140. Packing list or bill of lading for shipment by Distribution Services Ltd. from Hong Kong to Meditech dated June 6, 1985.

CX-83. Production No. 000151. First Interstate Bank of Denver notification of debiting the account of Meditech dated June 20, 1985.

Documentary Exhibits

CX-84. Production No. 000145. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated June 24th.

CX-85. Production No. 000138. Immediate Delivery Application re P.E. bags purchased by Meditech in Hong Kong dated June 25, 1985.

CX-86. Production No. 000123. U.S. Customs Service Transportation Entry and Manifest of Goods Subject to Customs Inspection and Permit re P.E. bags imported by Meditech dated July 21, 1986.

CX-87. Production No. 000136. U.S. Customs Service Notice of Redelivery re reclosable P.E. bags imported by Meditech dated June 4, 1985.

CX-88 Production No. 000144. Telex from Chung Kong to Mr. Taheri dated June 26, 1985.

CX-89. Production No. 000149. Invoice from Meditech to Polycraft re polyethylene reclosable bags dated July 1, 1985.

CX-90. Production No. 000081. Invoice from Meditech to Polycraft re polyethylene reclosable bags.

CX-91. Production No. 000033. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated July 23rd.

CX-92. Production No. 000032. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated July 30th.

CX-93. Production No. 000029. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated July 31, 1985.

Documentary Exhibits

CX-94. Production No. 000030. Telex from Chung Kong to Mr. Taheri dated July 31, 1985.

CX-95. Production No. 000080. Distributor price list for reclosable poly bags dated August 1, 1985.

CX-96. Production No. 000027. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated August 1, 1985.

CX-97. Production No. 000036. Page 1 of a handwritten letter from Mr. Leeper to Mr. Bruno dated August 2, 1985.

CX-98. Production No. 000037. Page 2 of a handwritten letter from Mr. Leeper to Mr. Bruno dated August 2, 1985.

CX-99. Production No. 000038. Page 3 of a handwritten letter from Mr. Leeper to Mr. Bruno dated August 2, 1985.

CX-100. Production No. 000039. Page 4 (last page) of a handwritten letter from Mr. Leeper to Mr. Bruno dated August 2, 1985.

CX-101. Production No. 000040. List of bag sizes, possible inventory numbers and possible test results.

CX-102. Production No. 000041. Inventory and price list for various size bags.

CX-103. Production No. 000251. Page 1 of an Agreement between Chung Kong and Meditech dated August 12, 1985.

CX-104. Production No. 000252. Page 2 of an Agreement between Chung Kong and Meditech dated August 12, 1985.

Documentary Exhibits

CX-105. Production No. 000006. Sales letter written by Mr. Leeper dated August 14, 1985.

CX-106. Production No. 000021. Letter from Mr. Taheri to Mr. Ip of Chung Kong dated August 21, 1985.

CX-107. Production No. 000023. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated August 21st.

CX-108. Production No. 000022. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated August 22nd.

CX-109. Production No. 000020. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated August 27, 1985.

CX-110. Production No. 000019. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated September 4th.

CX-111. Production No. 000018. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated September 5th.

CX-112. Production No. 000017. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated September 5th.

CX-113. Production No. 000128. Lien Notice from Distribution Services Ltd. to Meditech International Co. dated September 6, 1985.

CX-114. Production No. 000253. Letter from Mr. Taheri to Mr. Ip of Chung Kong dated September 6, 1985.

CX-115. Production No. 000016. Telex from Mr. Ip of Chung Kong to Mr. Taheri dated September 9th.

CX-116. Production no. 000015. Letter from Mr. Ip of Chung Kong to MIC Incorporated International dated September 2, 1985.

Documentary Exhibits

CX-117. Production No. 000014. Telex from Chung Kong to Mr. Taheri dated September 13th.

CX-118. Production No. 000134. Letter from Rene LaRue, Import Specialist, to Mr. Taheri of Meditech International Corp. dated September 16, 1986.

CX-119. Production No. 000013. Telex from Chung Kong to Mr. Taheri dated September 17th.

CX-120. Production No. 000228. Page 2 of letter from Bob Leeper to Mr. E.C. Bruno dated January 15, 1986.

CX-121. Production No. 000226. Page 1 of letter from Bob Leeper to Mr. E.C. Bruno dated January 15, 1986.

CX-122. Production No. 000001. Purchase Order of R.E. Leeper Enterprises, Inc. re zip-lock type bags in various sizes dated January 15, 1986.

CX-123. Production No. 000065. P.E. Roll Material Cost Sheet from Meditech International Co. dated January 20, 1986.

CX-124. Production No. 000067. Blue Star Stock Bags Cost Sheet from Meditech International Co. dated January 22, 1986.

CX-125. Production No. 000066. Quoted Costs of P.E. Zip Bags, Open Grip, as provided by Chung Kong to Meditech International Co. dated January 23, 1986.

CX-126. Production No. 000012. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated September 17th.

CX-127. Production No. 000011. Page 1 of telex from Chung Kong to Mr. Taheri dated September 26th.

Documentary Exhibits

CX-128. Production No. 000010. Page 2 of telex from Chung Kong to Mr. Taheri dated September 26th.

CX-129. Production No. 000009. Telex from Chung Kong to Mr. Taheri dated September 27th.

CX-130. Production No. 000008. Telex from Mr. Taheri to Mr. Ip of Chung Kong dated September 30th.

CX-131. Production No. 000007. Letter from Mr. Taheri to Bob dated September 30, 1985.

CX-132. Production No. 000057. Page 1 of handwritten price list and quotations from Bob to Ed dated February 7, 1986.

CX-133. Production No. 000058. Page 2 of handwritten price list and quotations from Bob to Ed dated February 7, 1986.

CX-134. Production No. 000079. Price List of Blue Star Stock Bags from Meditech International Co. for David Huseman dated Janaury 20, 1986.

CX-135. Production No. 000064. Price List of Red Stripe Bags from Meditech International Co. for David Huseman dated September 4, 1986.

CX-136. Production No. 000092. Descriptions of Inner Box and Outer Carton markings for M.I.C. International Inc. from CP Group dated January 30, 1986.

CX-137. Production No. 000106. Telex from Mr. Taheri to Mr. Ip of Chung Kong.

CX-138. Production No. 000105. Telex from Chung Kong to Mr. Taheri dated January 23rd.

CX-139. Production No. 000104. Telex from Mr. Taheri to Mr. Ip of Chung Kong.

Documentary Exhibits

CX-140. Production No. 000103. Telex from Chung Kong to Mr. Taheri dated January 24, 1986.

CX-141. Production No. 000101. Telex from Chung Kong to Mr. Taheri dated January 28, 1986.

CX-142. Production No. 000098. Application and Agreement for Commercial Letter of Credit for the benefit of M.I.C. International dated January 28, 1986.

CX-143. Production No. 000100. Merchandise description attachment from Mr. Taheri dated January 28, 1986.

CX-144. Production No. 000095. Telex from Chung Kong to Mr. Taheri dated January 30th.

CX-145. Production No. 000094. Telex from M.I.C. to Mr. Ip of Chung Kong dated January 30th.

CX-146. Production No. 000091. Drawings re Inner Box and Outer Carton of M.I.C. International Inc. from CP Group dated January 30, 1986.

CX-147. Production No. 000085. Statement No. 68809 of First Interstate Bank to M.I.C. International Inc. dated January 31, 1986.

CX-148. Production No. 000087. Page 1125 of Confirmation of Wire to Hong Kong and Shanghai Banking Corp. dated January 31, 1986.

CX-149. Production No. 000086. Page 1121 of Confirmation of Wire to Hong Kong and Shanghai Banking Corp. dated Janaury 31, 1986.

CX-150. Production No. 000084. Telex from M.I.C. to Mr. Ip of Chung Kong dated February 10th.

Documentary Exhibits

CX-151. Production No. 000132. Inventory Transfer from Polycraft Corp. to Meditech dated March 10, 1986.

CX-152. Production No. 000131. Bill of Lading from Meditech International to Chung Kong dated August 6, 1986.

CX-153. Production No. 000219. Page 17 of telex from Mr. Ip of Chung Kong to Mr. Taheri.

CX-154. Production No. 000220. Page 18 of telex from Mr. Ip of Chung Kong to Mr. Taheri.

CX-155. Production No. 000126. City Distribution Services Customs Warehouse #14 Statement Receipt dated July 21, 1986.

CX-156. Production No. 000059. Request for Quotation from C.T. Armstrong-Bey to Meditech dated September 15, 1986.

CX-157. Production No. 000002. Purchase Order from R D Plastics Co., Inc. to Meditech dated September 3, 1986.

CX-158. Production No. 000114. Letter from Mr. Taheri to Messrs. Ip and Keung of Chung Kong dated October 6, 1986.

CX-159. Production No. 000222. U.S. Customs Service Notice of Penalty & Demand for Payment to Meditech re case #87270420417 dated November 13, 1986.

CX-160. Production No. 000130. U.S. Customs Service Notice of Penalty & Demand for Payment to Meditech re case #87270420415 dated November 13, 1986.

CX-161. Production No. 000062. Price List of Seal Top Bags of Elkay Plastics Co. effective January 5, 1987.

CX-162. Production No. 000112. Invoice from Chung Kong to M.I.C. Incorporated dated January 23, 1987.

Documentary Exhibits

CX-163. Production No. 000111. United Airlines Waybill to M.I.C. Inc. from Chung Kong dated January 24, 1987.

CX-164. Production No. 000110. Commercial Invoice from Daewang International Corp to Meditech dated January 28, 1987.

CX-165. Production No. 000109. U.S. Customs Service Entry Sumamry dated February 21, 1987.

CX-166. Production No. 000108. United Airlines Waybill from Daewang International Corp. to Meditech dated January 28, 1987.

CX-167. Production No. 000218. Letter from Mr. Taheri to Mr. Ip of Chung Kong dated March 11, 1987.

CX-168. Production No. 000217. Fax Memo from Mr. Ip of Chung Kong to Mr. Taheri dated March 31, 1987.

CX-169. Production No. 000004. Purchase Order from Euroweld to Meditech dated April 7, 1987.

CX-170. Production No. 000247. Page 1 of Agreement between Meditech and Daewang dated May 6, 1987.

CX-171. Production No. 000248. Page 2 (last page) of Agreement between Meditech and Daewang dated May 6, 1987.

CX-172. Production No. 000249. Page 1 of Agreement between Meditech and Keron dated May 11, 1987.

CX-173. Production No. 000250. Page 2 (last page) of Agreement between Meditech and Keron dated May 11, 1987.

CX-174. Production No. 000003. Purchase Order from Euroweld to Meditech dated May 12, 1987.

Documentary Exhibits

CX-175.	Production No. 000068. Formula used by Meditech for Calculating Yield for Zip-Lock Material.
CX-176.	Production No. 000088. Drawings of Meditech's Blue Star Open-Reclosable Poly Bags.
CX-177.	Response of Respondents Meditech International, Inc., Polycraft Corporation, and Euroweld Distributing, Inc. to Complainant's Second Set of Interrogatories and Request for Production of Documents.
CX-178-C.	Witness Statement of Dr. Warren J. Keegan.
CX-179.	Witness Statement of Robert S. Nocek.
CX-180-C.	Witness Statement of Steven
CX-181-C.	Confidential Exhibits J-R, T Accompanying the Complaint.
CX-182.	Second Supplemental Response of Respondents, Meditech International, Inc. and Polycraft Corporation, to Commission Investigative Staff's Motion to Require Certain Respondents to Supplement Responses to the Complaint or, in the Alternative, Motion to Strike.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, James G. Markey, hereby certify that copies of the attached COMPLAINANT MINIGRIP INC.'S EXHIBITS ADMITTED INTO EVIDENCE were served upon the following via First Class Mail and Express Mail, where necessary, on August 7, 1987.

James G. Markey
James G. Markey

Hon. Judge Paul J. Luckern
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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.
Before Judge Paul Luckern
Administrative Law Judge

----------X

In the Matter of

CERTAIN RECLOSABLE PLASTIC BAGS AND TUBING

Investigation No. 337-TA-266

----------X

COMPLAINANT'S DIRECT EXHIBITS

CX-1 through CX-182	Complainant's Exhibits admitted into evidence at TEO hearing (copy already provided at TEO hearing).
CX-183-C	Witness Statement of Dr. Warren J. Keegan dated November 25, 1987.
CX-184-C	Supplemental Witness Statement of Steven Ausnit.
CX-185	Witness Statement of Mitchell A. Sieminski.
CX-186	Original Photographs of Exhibit 2 to Nocek Affidavit Marked As Respondent's Exhibit 6 at Nocek Deposition.
CX-187	Blueprint drawing of Heat-Seal-O-Scope.

CX-188	Complainant's First Set of Interrogatories to Respondents.
CX-189	Complainant's First Request for Production of Documents to Respondents.
CX-190	Complainant's Second Set of Interrogatories to Respondents Euroweld Distributing Inc., Meditech International Inc., Polycraft Corporation and Certain Taiwanese Manufacturers.
CX-191	Complainant's Second Request for the Production of Documents to Respondents Euroweld Districuting, Inc., Meditech International Inc., Polycraft Corporation and Certain Taiwanese Manufacturers.
CX-192	Complainant's First Request for Admission to Respondents.
CX-193	Order No. 27.
Cx-194	Order No. 29.
CX-195	Notice of Deposition of Ideal Plastic.
CX-196	Request for Inspection and Production to Ideal Plastic.
CX-197	Order No. 44.
CX-198	Order No. 46.

PHYSICAL EXHIBITS cont'd

CPX-6	Physical Exhibit 17 to the Nocek affidavit (Exhibit G to the Complaint), which is a sample of Siam bag, the original of which was submitted to the Commission.
CPX-7	Physical Exhibit 20 to the Nocek affidavit (Exhibit G to the Complaint), which is a sample of a Euroweld bag, the original of which was submitted to the Commission.
CPX-8	Physical Exhibit 23 to the Nocek affidavit (Exhibit G to the Complaint), which is a sample of Ka Shing bag, the original of which was submitted to the Commission.
CPX-9	Withdrawn.
CPX-10	Sample of an Ideal Plastics bag.
CPX-11	Sample of a Ta Sen bag.
CPX-12	Heat-Seal-O-Scope device.
CPX-13A and B	Respective Pieces of Polorizers

Respectfully submitted,

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I hereby certify that the foregoing **COMPLAINANT'S DIRECT EXHIBIT LIST** has been served upon the following parties as indicated on December 17, 1987:

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I, Kenneth R. Mason, hereby certify that the attached Public Version (Initial Determination) was served upon Cheri M. Taylor, Esq, and Jeffrey L. Gertler, Esq., and upon the following parties via first class mail, and air mail where necessary, on February 18, 1988.

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United States Patent [19]
Noguchi

[11] 3,945,872
[45] Mar. 23, 1976

[54] MAKING PLASTIC FILM WITH PROFILES AND OPENING MEANS FOR BAGS

[76] Inventor: Takashi Noguchi, Tokyo, Japan

[22] Filed: Dec. 26, 1973

[21] Appl. No.: 428,433

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 178,086, Sept. 7, 1971, Pat. No. 3,787,269.

[52] U.S. Cl. 156/244; 156/498; 156/500
[51] Int. Cl.² B32B 31/30
[58] Field of Search ..... 156/66, 91, 244, 497, 498, 156/500; 150/3; 264/176 R

[56] References Cited

UNITED STATES PATENTS

2,415,644	2/1947	Leonhard et al.	156/497
3,462,332	8/1969	Goto	156/244
3,780,152	12/1973	Kriesner	156/244

Primary Examiner—Caleb Weston
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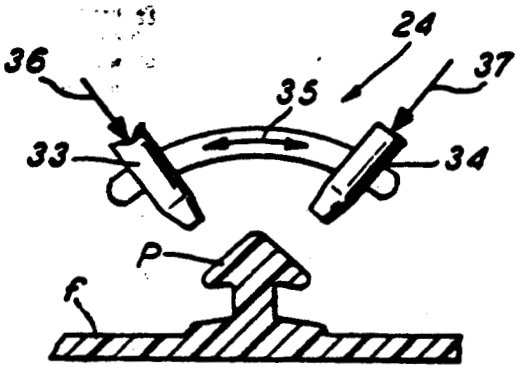
[57] ABSTRACT

A method and mechanism for continuously making a plastic film with shaped profiles on the surface including extruding a continuous length of interlocking profiles from a die shaped with a precise shape for interlockingly engaging with another profile and directing a flow of coolant on the profile from a stationary coolant means and adjusting the direction of flow of coolant relative to the direction of movement of the profile or controlling the pressure and temperature of the flow of coolant to control the cooling rate and the shape of the profile.

8 Claims, 7 Drawing Figures



MAKING PLASTIC FILM WITH PROFILES AND OPENING MEANS FOR BAGS

This application is a continuation-in-part of my copending application, U.S. Ser. No. 178,086, filed Sept. 7, 1971 U.S. Pat. No. 3,787,269.

BACKGROUND OF THE INVENTION

The invention relates to improvements in plastic extrusion equipment and methods for forming film with shaped profiles on the surface where such film is eventually used in making reclosable bags or similar products.

More particularly, the invention relates to improvements in forming the profiles such that the shape can be more completely controlled at relatively high extrusion speeds so that a precise shape can be maintained to accurately and strongly interlock with another mating profile. One type of film having profiles on the surface is formed by supplying a continuous sheet of film and simultaneously extruding a profile which is laid on the film while hot so that it integrally attaches itself to the film to form a completed profile sheet. Mechanisms and processes for forming such sheets are shown in the copending applications of Takashi Noguchi, U.S. Ser. No. 178,086, filed Sept. 7, 1971 and U.S. Ser. No. 178,087, filed Sept. 7, 1971. It will be understood that the features of the invention find advantage in forming profiles by other methods and other mechanisms, but the invention will be primarily described in connection with an environment such as that shown in the above referred to copending applications, the disclosures of which are embodied herein by reference. The features described herein may be employed, for example, in an extrusion arrangement wherein the profile is not formed separately and applied to a film white hot, but wherein the profile and film are extruded simultaneously out of a single die opening. It is also contemplated that the features of the invention may be employed in an arrangement wherein the film and profile are extruded separately, but substantially immediately joined to each other.

In the formation of profile sheets with the improvement of extrusion techniques and profile and film designs, it has become possible to form a very thin film of only a few mils of thickness and to make the profile very small and yet obtain interlocking profiles which will join to each other with a strength that approaches or surpasses the strength of the film. To obtain an efficient highly effective interlocking profile depends upon the accuracy thereof, and this accuracy is hard to maintain at high extrusion speeds. It has been discovered that an important factor in maintaining the shape of the profile is in controlling the cooling thereof.

It is accordingly an object of the present invention to provide an improved mechanism and method for the production of profiled film obtaining more accurate and better control of profile shape and/or higher extrusion rates.

A still further object of the invention is to provide an improved method and mechanism for accurately controlling the shape of extruded plastic profiles during continuous extrusion.

Other objects, advantages and features, as well as equivalent mechanisms and methods which are intended to be covered herein, will become more apparent with the disclosure of the preferred embodiments in the specification, claims and drawings, in which:

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a somewhat schematic elevational view of a mechanism for making profile film constructed and operating in accordance with the principles of the present invention;

FIG. 2 is a vertical sectional view taken through a film strip with profiles illustrating the type of construction formed in accordance with the invention;

FIG. 3 is a vertical sectional view taken through the top of a bag formed from the film of FIG. 2;

FIG. 4 is a somewhat schematic enlarged fragmentary sectional view showing a portion of the cooling mechanism;

FIG. 5 is a fragmentary enlarged side elevational view of another form of the cooling mechanism;

FIG. 6 is a fragmentary detailed view of a further form of the invention; and

FIG. 7 is another fragmentary schematic view of a further form of the invention.

DESCRIPTION

FIG. 1 illustrates a mechanism for attaching a profile to a traveling strip of film. The structure is somewhat similar in principle to the mechanism shown in the copending application, Ser. No. 178,086 but other variations may be employed. In accordance with the type of mechanism generally illustrated, a flat thin strip of film is delivered traveling along a path and a freshly extruded profile is positioned on the film to be bonded thereto by the heated plastic of the profile adhering to and solidifying with the film.

In FIG. 1 a strip of thin plastic film such as a laminate with one polyethylene surface travels over a guide roll 10 and successive rolls 11, 12 and 13 to pass upwardly in the nip between a pair of press rolls 14 and 15. The press roll 15 has a recess so as to admit a freshly extruded heated plastic profile P. The profile emerges from the die opening of an extruding head 16 which is supplied with heated plastic from an extruder 17. The die 16 and extruder 17 may be of various conventional designs which will be fully recognized by those versed in the art.

The film sheet F is preferably heated such as by passing over the heated roll 14 so that the profile will more readily adhere to the surface and form a firm bond. The plastic of the profile P being freshly extruded is relatively hot and must be cooled so that it will solidify for subsequent interlocking or for rolling up the profile film on a roll in a continuous operation. For this purpose a coolant jet mechanism 24 is provided directing a flow of coolant against the heated profile to remove heat therefrom. The film sheet is guided upwardly over a series of guide rolls 19, 20, 21 and 22.

The coolant jet 24 may be referred to as a control coolant jet because it has been discovered that this jet can control the shape of the resultant profile on the film. The profile after being adhered to the film, is in the somewhat plastic formative stage, and it has been found that the coolant jet 24 can influence the shape of the profile by controlling the location where the coolant fluid is directed and the direction at which it engages the profile as well as the pressure or velocity at which it engages the profile. The coolant employed is preferably air, but other gases or water may be used.

An additional cooling means 23 further along the path of travel of the strip may be employed for completing the cooling operation. The primary or the control coolant jet 24 removes the majority of heat and controls the shape of the profile, and the secondary coolant means 23 completes the operation, but usually has no effect on the size and shape of the profile. Also, to increase the cooling operation, a cooling means 23a may be placed in opposing relationship to the cooling means 23.

The extruder head 16 may be designed to extrude one or more profiles and, for example, a rib profile and a groove profile may be simultaneously extruded. The profiles must be accurately sized and shaped to be able to interlock when pressed together and to hold together with maximum strength. To accomplish this with the smallest profile possible and to thereby save the amount of plastic required and to be able to do so at as high a speed as possible, preciseness and accuracy in the shape of the profile is mandatory. In accordance with the present invention, it has been discovered that this shape can be controlled by controlling the direction and/or pressure of coolant directed against the profile after it has been placed on the sheet.

A sheet of the type formed with the mechanism illustrated is shown in FIG. 2 wherein the plastic film 26 has profiles 27 and 28 bonded to the surface. A use for this type of film is shown in the structure of FIG. 3 wherein the film sheet is doubled to form a doubled closed bag with a top 30 and a bag interior 29 and a bottom 30*b*. The top of the bag has interlocking profiles 27 and 28. For use the bag will be slit along the top 30, and the profiles can be pulled apart by the flanges located above them for access to the interior of the bag. For reclosing the bag the profiles 27 and 28 will be pressed together by applying a lateral pressure along the top of the bag on either side of the profiles.

A typical set of profiles will consist of a general arrowhead shape for one profile as shown schematically at 27 in FIG. 2, and a complementary groove shape with overlapping side jaws for the other profile as shown schematically at 28 in FIG. 2.

FIG. 4 illustrates the relationship between the profile P on the film F and the cooling head 24. The cooling head is shown as having one or more jets illustrated by the air jets 33 and 34. Air supply lines 36 and 37 are connected to the jets. The jets are mounted on a movable adjustment piece 35 so that their angle can be altered in a direction transversely of the direction of travel of the profile. By shifting the jets in an arcuate path through 180° relative to the profile, more or less heat will be removed from one side of the profile than the other in the initial cooling which will change the shape of the resultant profile. During operation, the position of these jets can be changed to obtain the optimum shape in the profile. Thus this shape may be changed to correct, for example, unequal size jaws in the female profile. This feature may be also used to correct resultant unequal size barbs of the male profile due to inaccuracies in the shape of the die 16. Additionally, if at different speeds of extrusion, the plastic tends to flow so that the head or jaw of the male or female profile is smaller on one side than on the other side, then compensation can be made by adjusting the position of the air jets.

Fig. 5 shows an arrangement wherein a coolant jet 38 is adjustable through 180° so that the jet can be directed from a position facing the oncoming moving

profile P to a position where its direction is parallel with the movement of the profile. This arrangement tends to control the profile height and its general shape. The adjustment arrangement wherein the coolant jet direction is adjusted in the direction of movement of the profile or normal to the direction of movement of the profile may be combined or may be used individually.

FIG. 6 shows an arrangement wherein a plurality of individual jets 40, 41, 42 and 43 are used such as with a female profile F. These jets will be individually adjustable and also adjustable as a block in both of the directions illustrated in FIGS. 4 and 5 so as to be able to vary the direction and position of engagement of the coolant with the moving profile. Adjustment means are shown at 48, 49, 50, 51 and 52.

A further variation may be introduced in control of the pressure of the flow of coolant. As shown in FIG. 7, a traveling profile has a jet 45 directed thereagainst supplied with a flow of coolant through a line 46 controlled by a pressure control valve 47. By varying the valve 47, the rate of flow of the coolant through the jet 45 is altered which will have an effect on the resultant shape of the profile P. The pressure control arrangement of FIG. 7 may be employed alone or simultaneously with the arrangement shown in FIGS. 4 through 6.

An additional variation may also be introduced by controlling the temperature of the coolant by passing it through a heat transfer mechanism 53 wherein the coolant can be brought to and maintained at a predetermined optimum temperature for satisfactorily cooling the profiles.

I claim as my invention:

1. In the method of making plastic film with shaped profiles on the surface comprising the steps of:

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;

and directing a flow of coolant onto the extruded profile of warm plastic and adjusting the direction of flow of coolant relative to the direction of movement of the profile for controlling the cooling rate and shape of the profile.

2. In the method of making a plastic film with shaped profiles on the surface in accordance with claim 1.

wherein said direction is adjusted through an arc of 180°.

3. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1.

wherein the flow of coolant is adjusted in an arc extending in the direction of travel of the profile length.

4. In the method of making plastic film with shaped profiles on the surface in accordance with the steps of claim 1.

wherein the flow of coolant is adjusted in an arc extending transversely of the direction of movement of the profile length.

5. In the method of making plastic film with shaped profiles on the surface comprising the steps of:

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;

and directing a flow of coolant against the heated profile and adjusting the pressure of coolant flow for controlling the cooling rate and shape of the profile.

6. In the method of making plastic film with shapes profiles on the surface, the steps of:

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;

directing a flow of coolant onto the extruded profile of warm plastic;

and varying the temperature of the coolant flow for controlling the cooling rate and shape of the profile.

7. In the method of making plastic film with shaped profiles on the surface, the steps of:

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;

directing a first flow of coolant against the heated profile length in a small jet shape;

and directing a second flow of coolant in a small jet shape against the heated profile length;

said first flow being directed laterally relative to the axis of the profile and said second flow being directed in a direction laterally opposing the first flow of coolant.

8. In the method of making plastic film with shaped profiles on the surface, the steps of:

extruding a continuous length of an interlocking profile from a die opening with the profile having a precise shape for interlockingly engaging with another profile;

directing a first flow of coolant in a small jet shape against the heated profile length;

and directing a second flow of coolant in a small jet shape against the heated profile length;

said second flor of coolant being positioned after the first flow of coolant in the direction of profile lenth movement.

* * * * *

Fig. 1

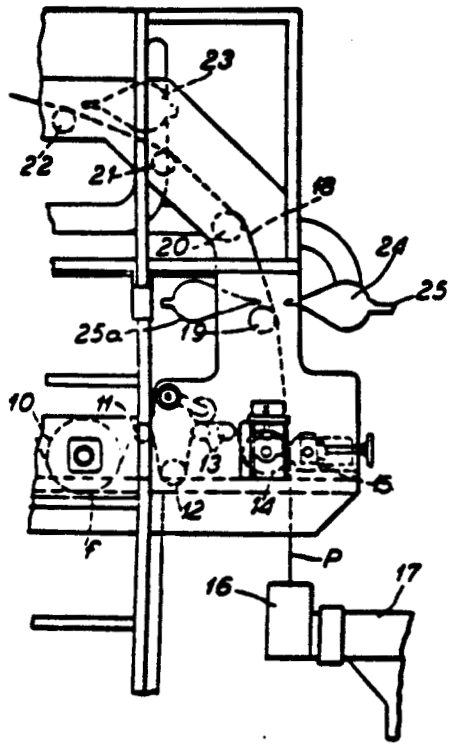
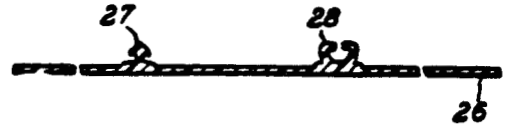


Fig. 2



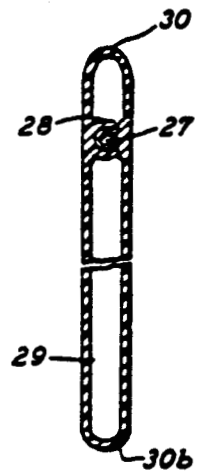


Fig. 3

Fig. 4

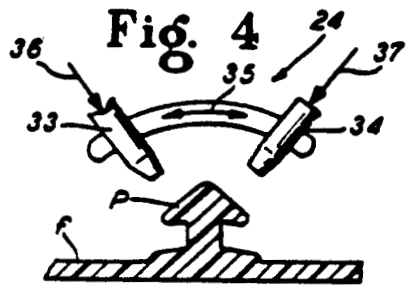
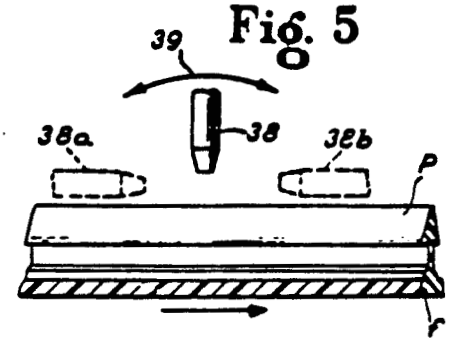


Fig. 5



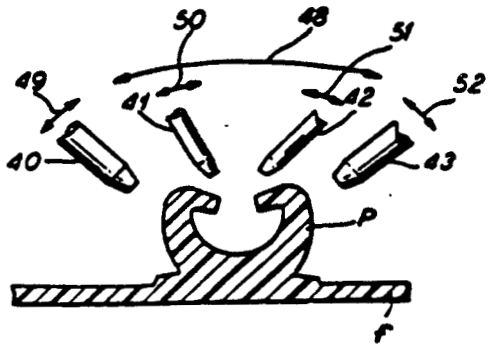


Fig. 6

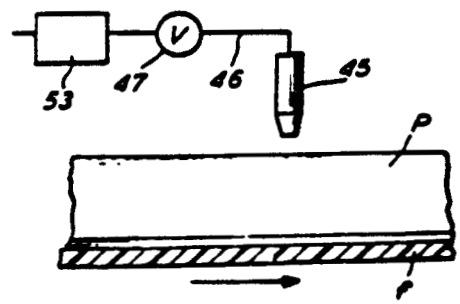


Fig. 7

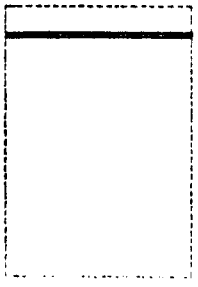
C2-302-2237-248.

United States Patent Office

946,120
Registered Oct. 31, 1972

PRINCIPAL REGISTER
Trademark

Ser. No. 374,045, filed Oct. 22, 1970



Minigrip, Inc. (New York corporation)
Route 303
Orangeburg, N.Y. 10962, by merger from
Flexigrip, Inc. (New York corporation)
Orangeburg, N.Y.

For: PLASTIC BAGS, in CLASS 2 (INT. CL. 16).
First use Mar. 26, 1959; in commerce Mar. 26, 1959.
The mark consists of a horizontal stripe adjacent the bag top lined for the color red. However, applicant makes no claim to any specific color apart from the mark as shown.
Owner of Reg. No. 853,436.

R. S. KOLAKOSKI, Examiner

REGISTERED FOR A TERM OF 20 YEARS FROM Oct. 31, 1972

COMB. AFF. SEC 8 & 15

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