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UNITED STATES TARIFF COMMISSION

TEXTILE MACHINERY PARTS:
HERR MANUFACTURING CO., INC.

Report to the President
on Investigation No. TEA-F-62
Under Section 301(c)(1) of the Trade Expansion Act of 1962



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May 1974

UNITED STATES TARIFF COMMISSION

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REPORT TO THE PRESIDENT

U.S. Tariff Commission,
May 7, 1974.

To the President:

In accordance with sections 301(f)(1) and (f)(3) of the Trade Expansion Act of 1962 (TEA) (76 Stat. 872; 19 U.S.C. 1801), the U.S. Tariff Commission herein reports the results of investigation No. TEA-F-62 made under section 301(c)(1) of the act to determine whether, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with textile machinery parts (of the types provided for in items 670.68 and 670.74 of the Tariff Schedules of the United States (TSUS)) produced by the Herr Manufacturing Co., Inc. are being imported into the United States in such increased quantities as to cause, or threaten to cause, serious injury to the firm.

The investigation was instituted on March 15, 1974, on the basis of a petition for adjustment assistance filed by the firm on March 8, 1974, under section 301(a)(2) of the act. No public hearing was requested.

Notice of the institution of the investigation and hearing was published in the Federal Register of March 21, 1974 (39 F.R. 10671).

In the course of its investigation, the Commission obtained information from officials of Herr Manufacturing Co., Inc, and its customers, importers and domestic producers of textile machinery parts, official Government statistics, and the Commission's files.

Finding of the Commission

On the basis of its investigation, the Commission 1/ finds unanimously that articles like or directly competitive with spinning and twisting ring travelers, spinning and twisting rings, flyers, flyer wires, and traveler inserts (of the types provided for in items 670.68 and 670.74 of the Tariff Schedules of the United States) produced by Herr Manufacturing Co., Inc., are not, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause, or threaten to cause, serious injury to such firm.

1/ Chairman Bedell and Commissioner Leonard did not participate in the decision.

Views of Vice Chairman Parker and Commissioners Moore,
Young, and Ablondi

This statement sets forth the reasons whereon the Commission has made a unanimous determination of no injury under section 301(c)(1) of the Trade Expansion Act of 1962 (TEA). The investigation was instituted on petition of the Herr Manufacturing Co., Inc., of Tonawanda, N. Y., a manufacturer of textile machinery parts.

Under section 301(c)(1) of the TEA, the Commission in order to make an affirmative decision must find that:

- (1) Articles like or directly competitive with those produced by the firm are being imported in increased quantities;
- (2) The increased imports are a result in major part of concessions granted under trade agreements;
- (3) The petitioning firm is being seriously injured or threatened with serious injury; and
- (4) The increased imports resulting in major part from trade-agreement concessions are the major factor causing or threatening to cause the serious injury.

We have concluded that, regardless of the extent of any injury to the Herr Manufacturing Co., imported articles like or directly competitive with those produced by such company are not the major factor causing or threatening to cause serious injury to that firm. Therefore, we have made a negative determination.

As indicated in the finding, the products herein considered are spinning and twisting rings, ring travelers, flyers, flyer wires, and

traveler inserts, all produced by the Herr Manufacturing Co., Inc., in their Tonawanda, N.Y., plant. The investigation revealed, however, that only spinning and twisting rings and ring travelers are being imported into the United States. In 1973 import penetration attained by ring travelers did not exceed 1 percent of apparent consumption. Spinning and twisting rings on the other hand increased from 5 percent of apparent consumption in 1969 to 7 percent of apparent consumption in 1973. The total increase in imports amounted to only 300 rings between 1969 and 1973.

Several factors adversely affected the Herr Manufacturing Co., during the period covered by the Commission's investigation. Primarily the demand for fabric and apparel of manmade fibers by the American consumer has increased 41 percent since 1969, while at the same time the demand for woolen and worsted goods declined 55 percent. These changes have, in effect, eliminated a large part of the Herr company market as their rings and many of the ring travelers are used solely on spinning and twisting machinery producing yarn made of wool.

Second, there has been a decided trend to the use of sintered metal rings over the high quality steel rings produced by the Herr Manufacturing Co. Sintered metal rings now constitute about three-fourths of the domestically produced rings. Such acceptance is based on technical factors which appear to overshadow the oftentimes higher asking price for sintered metal rings.

Third, more advanced spinning and twisting techniques are being introduced, such as "open ended" and "2 for 1" spinning, which have attracted some customers. This, coupled with the fact that some yarn producers have switched out of natural fiber yarns, has resulted in a decrease in the overall market for Herr-type spinning and twisting rings and ring travelers.

Finally, the Herr Manufacturing Co. serves an industry historically known for its cyclical nature. The evidence shows that this cyclical pattern is closely identified with the production and sales of the Herr Manufacturing Co. At a time when the textile industry generally faced both an economic recession and a bottoming out of its natural cycle, the petitioning firm experienced its greatest difficulties.

Based on the foregoing considerations, we conclude that increased imports resulting in major part from trade-agreement concessions are not the major factor causing or threatening to cause serious injury to the Herr Manufacturing Co.

INFORMATION OBTAINED IN THE INVESTIGATION
Description and Uses of Articles Under Investigation

* * * * *

Spinning and twisting rings

Spinning and twisting rings are essential parts of spinning and twisting equipment used in the manufacture of yarn, cord, and thread. The rings are circular bands of steel or sintered metal, produced in diameters measuring from 2 to 10 inches in increments of at least a quarter of an inch, in many thicknesses, and in several distinctive styles. Smaller rings are used principally for spinning yarn and thread for cloth, while larger sizes are often used in twisting yarn for carpet, asbestos fiber, or cord for tires.

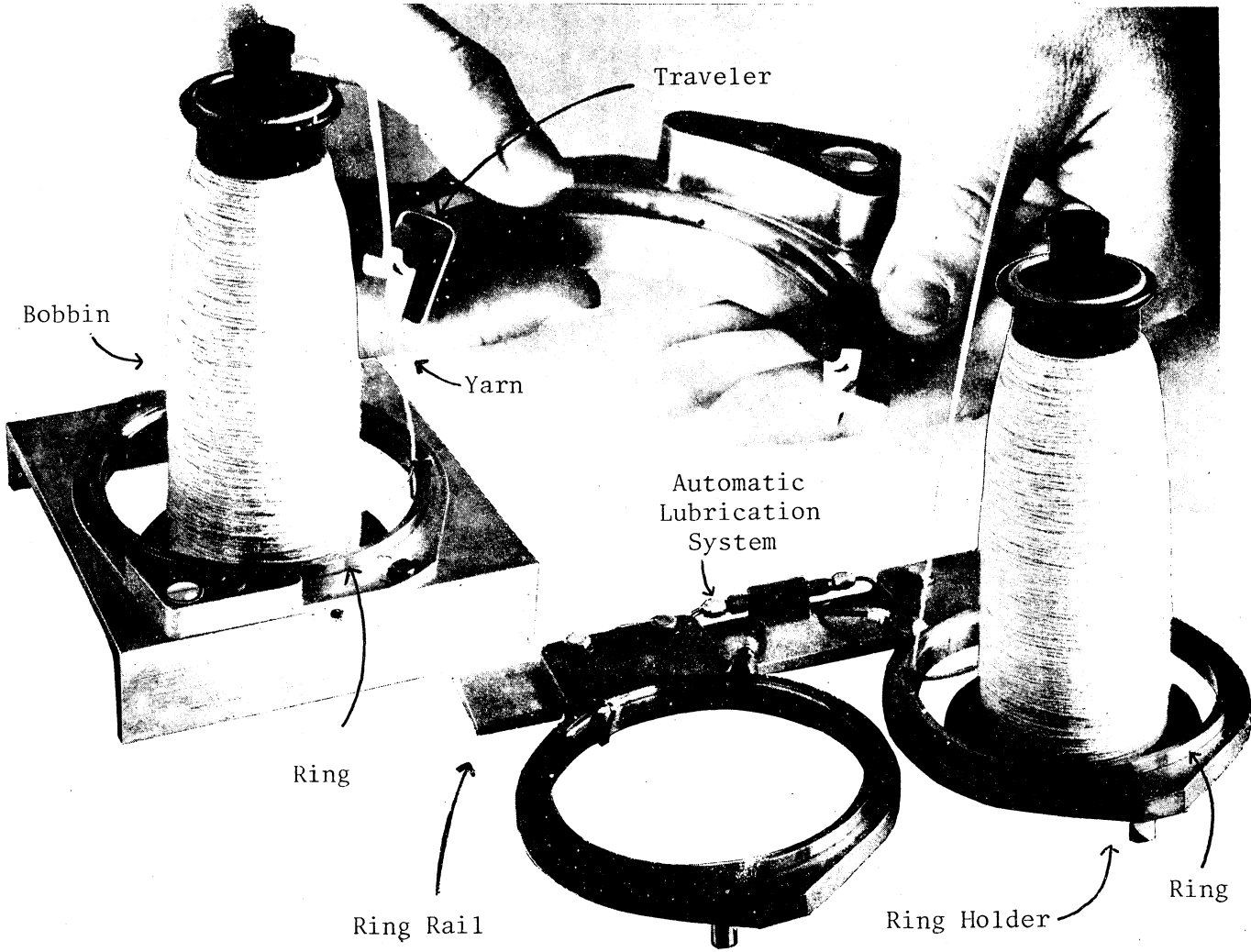
Rings are supplied with or without a metal holder that is attached to the spinning or twisting machine frame; in some machines the rings fit directly into the ringrail of the machine. From 90 to 315 rings are

required for each machine. The holder and ring often include a lubrication system that may be filled periodically by hand or fed automatically by an electrically controlled lubrication system (see picture on following page). This system would replace regular wiping of an oil-less "dry" ring with an oil-soaked cloth. Rings may also be used "dry," without lubrication.

A ring may be made of either steel or iron powder. It can begin as a steel bar forged into a band, or a cut from a steel tube. It is then machined to the necessary shape and dimensions. In a lubricated ring, ducts are drilled or an insert is added to provide a channel for the oil. Sintered metal rings are produced by compacting and sintering iron powder. This produces a ring that is physically similar to the steel ring, but is essentially porous. The lubrication, instead of being drawn through a duct, permeates the ring and is released evenly through the voids in the metal.

Rings are divided into categories by shape rather than by function. "Conical" rings and "vertical" rings are functional substitutes for each other, but neither of them would necessarily fit into the ring rail or holder that had been installed for the other. The surface of the conical ring forms the inside diameter of the ring, and cannot be turned over in the holder to extend its useful life. A "vertical" ring has a perpendicular inner wall, and might be turned over in the proper holder. The "dry", double-flanged, ring which is used on both sides for longer wear is used primarily in the spinning and twisting of cotton. The Herr rings are used principally in the processing of wool, worsted, and blended yarns and do not compete with double-flanged rings. The average life of a ring and holder when used on a one shift basis is 5 to 7 years.

Textile machine parts: Spinning and twisting ring frame with manual and automatically lubricated rings; ring holders, ring travelers, and bobbin



Ring travelers and traveler inserts

Ring travelers are small open rings made of metal or plastic; they are produced in 22,000 different shapes and sizes. Teamed with the spinning spindle and ring, travelers form the heart of the yarn preparatory spinning process. In operation, the ends of the traveler are hooked over the edges of the ring and slide freely around its inner periphery. The yarn is threaded through the traveler (see diagram on preceding page) and onto the bobbin. The action of the spinning bobbin, size, shape of the traveler, and friction between the ring and traveler exert a twisting action on the yarn while guiding its winding on to the bobbin. Moving at a very high rate of speed, the traveler seems to float around the ring. Instead of being propelled by the machine, it is activated and controlled by the stock in process. The traveler is precisely balanced; and in quality control checks, the weight of any 10 metal travelers cannot vary more than half a grain. If the weight of a traveler is off, the traveler will foul the twisting or spinning of the yarn.

Travelers are subject to great wear because they run at speeds of up to 15,000 revolutions per minute; they have to be replaced frequently, every 48 hours or less, and both textile mills and the domestic manufacturers of travelers maintain large stocks of them. They are made to extremely close tolerances by highly skilled workers and, while the item is small and inexpensive it is an essential component.

A traveler insert is a metal component of nylon or plastic travelers. Some, but not all, of the nylon travelers often used on the

larger rings contain this piece, bridging the two nonmetal ends. This piece is located where the chance of friction between the traveler and the ring is the greatest, thus reducing friction and wear. The metal piece also acts as a stiffener, holding the shape of the softer plastic traveler as it bends under the heat generated by its tremendous speed.

* * * * *

Flyers and flyer wires

A flyer is part of a spinning machine that prepares thread for the weaving and knitting of hose and lingerie. Its function is similar to that of the spinning ring and traveler in that it spins thread and rewinds it on the bobbin. The core of the flyer is made from a metal stamping; other metal and plastic pieces are inserted, and wires extend from this core. A flyer wire is straight with a double curl at the end that holds the thread. The wires act like the traveler, producing tension and guiding the thread onto the bobbin as the flyer core spins. These items are generally made to order, rather than premade and held in stock. The Herr Manufacturing Co., Inc. is the only producer of flyers in the United States.

Open-end spinning and two-for-one twisting

There are alternatives to the use of rings for spinning and twisting. Open-end spinning is a ringless spinning method that is used primarily to spin cotton. The advantage of this system is that it processes larger bundles of fiber, and thus cuts handling time. The disadvantages of open-end spinning include the necessity of large capital outlays to purchase the machinery and the coarseness of the spun yarns produced on these machines. Two-for-one twisting, a high speed ringless twisting process, can generally be used only with continuous, manmade fibers. ^{1/} It also reduces handling of the fiber, thus reducing costs, but as in ringless spinning, the capital requirements are large. It is presently used to produce yarn and cord of a coarse quality, for example, for carpets and tire cords.

The potential market for ringless spinning and twisting machines will depend on improvements in the quality of the end product, although some producers of textile machinery believe it promises to dominate some areas of textile production within 5 to 10 years. Neither process is as yet applicable for the processing of wool, worsted, or blended yarns, the areas of production in which Herr's rings are most used.

U. S. Tariff Treatment

Spinning and twisting ring travelers are provided for in items 670.68 of the Tariff Schedules of the United States (TSUS). Such parts were previously provided for in paragraph 372 of the Tariff Act of 1930,

^{1/} Conventional twisting and spinning frames average \$85 per spindle where as the new machines cost from \$350 to \$900 per spindle.

at a rate of 40 percent ad valorem. The rate was reduced to 35 percent ad valorem in 1947 and was subsequently reduced to 17.5 percent ad valorem, effective January 1, 1972, pursuant to the Kennedy Round negotiations.

Flyers and flyer wires and spinning and twisting rings were also dutiable, at 40 percent ad valorem, under paragraph 372 of the Tariff Act of 1930. Under the TSUS, such articles are dutiable at the rate applicable to the machines of which they are parts. Accordingly, flyers, flyer wires, and spinning and twisting rings are classifiable under item 670.74 and are dutiable at the rate provided for item 670.02 if the machinery in question is used to process vegetable fibers, at rate for 670.04 if they are for wool fibers, and at the rate for item 670.06 if for machine processing fibers not elsewhere classified. As indicated in the tabulation on the following page, the rates of duty for items 670.02, 670.04, and 670.06 have been reduced from the statutory rate (40 percent ad valorem) to 4 percent, 7 percent, and 6 percent ad valorem, valorem, respectively, pursuant to trade agreements.

Spinning and twisting machine parts: U.S. rates of duty
in 1930 and changes through 1972

(Rates of duty in percent ad valorem)

Effective date	Vegetable fiber machine parts	Wool machine parts	Other machine parts	Ring travelers	Authority
Paragraph 372					
June 18, 1930--	40	40	40	40	Tariff Act of 1930.
Jan. 1, 1948--	20	20	20	35	GATT <u>1</u> / ₁
June 30, 1956--	-	19	-	-	GATT
June 30, 1957--	-	18	-	-	GATT
June 30, 1958--	-	17	-	-	GATT
July 1, 1958--	18	-	18	-	GATT
July 1, 1963--	17	-	17	-	GATT
	TSUS item: 670.02	TSUS item: 670.04	TSUS item: 670.06	TSUS item: 670.68	
Aug. 31, 1963--	8	14.5	12	35	Tariff Classification Act of 1962.
Jan. 1, 1968	7	13	10.5	31	GATT
Jan. 1, 1969--	6	11.5	9.5	28	GATT
Jan. 1, 1970--	5.5	10	8	24	GATT
Jan. 1, 1971--	4.5	8.5	7	21	GATT
Jan. 1, 1972--	4	7	6	17.5	GATT

1. General Agreement on Tariffs and Trade.

U.S. Consumption

The data in this report on U.S. consumption of spinning and twisting rings, ring travelers, and traveler inserts, flyers, and flyer wires are from information obtained by questionnaires sent to all known distributors. It is believed all major producers and importers of articles like or directly competitive with those produced by the petitioning firm, Herr Manufacturing Co., Inc., were identified and contacted. Since the flyer is a product produced only by Herr, and the traveler insert is merely a component of a ring traveler, tables will show domestic consumption of only spinning and twisting rings and ring travelers.

Spinning and twisting rings

Apparent annual U.S. consumption of spinning and twisting rings, excluding the double flanged "dry" type used primarily in spinning cotton, declined from an estimated * * * rings in 1969 to * * * rings in 1971, then rose slightly in 1973 to * * * (table 1). Annual U.S. production also declined in the period.

It is noted, however, that these data exclude the number of rings that may be attached as original equipment on imported textile machinery, data for which are not available. Rings imported separately were equivalent to 5 percent of the apparent market in 1969, of 2 percent in 1970 and 7 percent in 1973.

Textile plant managers and ring producers generally agree that the development of ringless spinning and twisting machinery has cut

into the spinning and twisting ring market which is highly cyclical. Still another point made was that because the life cycle of such parts is 5 to 7 years, a producer, once having lost an order to a competitor, will not have an opportunity to recover the account for the life of the rings.

Textile plant managers and ring producers were asked about the future of the market for rings in the course of the investigation. They generally replied that, although technological advances in ringless spinning and twisting had cut into the spinning and twisting ring market, a market does exist, even if it is a declining one. A second point often made was that the cyclical character of the textile business has a direct impact on the demand for spinning and twisting rings.

Ring travelers

U.S. consumption of ring travelers has increased every year in the period 1969-1973, from a low of \$6.2 million worth of ring travelers in 1969 to \$8.4 million in 1973 (table 2). Annual estimated U.S. production also increased during this time. Imports account for less than 1 percent of apparent U.S. consumption, and domestic products are generally preferred due to the convenience of being close to the source of supply.

U. S. Industry, Shipments, and Exports

Spinning and twisting rings

The domestic spinning and twisting ring industry consists of three producers: the petitioner, Herr Manufacturing Co., Inc., of Tonawanda, N. Y.; Whitinsville Spinning Ring Co., Whitinsville, Mass.; and Merriman, Inc., Hingham, Mass. Both Herr and Whitinsville are small family-owned firms dealing solely in the supply of metal parts to the textile industry. Whitinsville also produces double flanged rings (for cotton spinning) in a second plant in Gastonia, N. C., and imports sintered metal rings from the Eadie Bros. and Co. of Scotland. Merriman, Inc., a division of Litton Industries, is by far the major ring producer with * * * percent of the total domestic units shipped in 1973 (Merriman produces sintered metal rings). Herr is the smallest producer with * * * percent of 1973 domestic shipments. 1/ * * *.

1/ The percentage figures do not include the sale of imported rings by the Whitinsville Spinning Ring Co.

* * *.

Total shipments of domestically produced rings declined * * * 31 percent (table below and 3). Shipments in 1973 increased slightly to * * * units--a 5 percent increase over 1972--in response to increased use of old equipment requiring rings while the textile mills await new equipment (machine builders are currently working on a 2-year backlog of machine orders).

The following table shows the shipments of three domestic producers of spinning and twisting rings:

Spinning and twisting rings: U.S. producers' shipments of spinning and twisting rings, 1969-73

* * * * *

Ring travelers

Ring travelers are currently produced by seven of the eight firms shown in the table below. One firm, the National Ring Traveler Co. of Pawtucket, R.I., ceased production in 1972, but sold from inventory in 1973. Herr Manufacturing Co., Inc., and Merriman, Inc., are the only ring traveler producers who also manufacture rings. As explained elsewhere in this report, ring travelers are very small items sold by the thousand, often from the manufacturers' inventory; as such, shipment data are maintained on a dollar basis. The following table shows the eight producers' shipments during the 1969-73 period.

Ring travelers: U.S. producers' shipments of ring travelers, 1969-73

* * * * *

The value of total shipments increased approximately 20 percent between 1969 and 1973 (table on previous page). This increase, with some consideration for change in product mix, indicates a sizable increase in shipments since prices appear to have been relatively stable throughout the period.

Exports of ring travelers have increased since 1971, from \$840,000 in 1971 to \$1,393,000 in 1973. This increase was attributed by producers to the recent changes in the value of the dollar with respect to foreign currencies. Five firms participate in the export market; * * *.

Ring travelers: U.S. producers' exports of ring travelers, 1969-73

* * * * *

Flyers and flyer wires

Only one firm, Herr Manufacturing Co., produces flyers and flyer wires (see Herr Manufacturing Co. p. A-5); the Herr Manufacturing Co. does not export any of these products.

U.S. Imports

In recent years imports of flyers and flyer wires entered separately for textile machinery have been small. Thus, competition between the imported and domestic products has been confined primarily to spinning and twisting rings and travelers. During the period 1967-73, the imports of rings entered separately have been less than 10 percent of the apparent consumption based on value. The imports of ring travelers entered separately have been less than 1 percent of consumption.

Spinning and twisting rings

Only two importers have been identified: Whitinsville Spinning Ring Co., previously mentioned, and Watson & Desmond, Inc., Charlotte, N.C., importing English and West German rings, respectively.

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Ring travelers

With the exception of 1970, imports of ring traveler have increased in quantity and value in each year from 1969-73 (table 4). Though such imports, primarily from the United Kingdom and West Germany, have increased from 832 pounds valued at \$4,200 in 1969 to 10,000 pounds valued at \$82,500 in 1973 (a 12-fold increase) such imports represent less than 1 percent by value of apparent consumption.

* * *

Other competitive imports

The petition for assistance cites imports of spinning and twisting machine and textiles (wool, worsted, and blends) as causing back pressure in the channel of distribution resulting in decreasing sales of spinning and twisting machine parts. The following sections provide some insight into these assertions.

The volume of imports of spinning and twisting rings on preassembled machines cannot be estimated from data available. On an average 2,300 machines of varying designs enter the United States annually. However, they consist of a wide variety of models using from

95 to 315 rings and in many instances, no rings at all, 1/ or rings of a type (double flanged) which are uncompetitive with the Herr ring. According to importers of rings and ring travelers, many machines using rings are imported without rings because numerous American buyers specify that their new machines be fitted with domestic rings only. Thus, a considerable number of rings might be entered affixed to machines, but there is no way to determine the number of rings actually imported in this manner.

Imports of woolen textile goods, including yarn and wearing apparel, of the type produced from yarns spun with Herr style rings and ring travelers have generally declined since 1969. Domestic production of these items has declined similarly as shown in the following table:

Textile imports and production: U.S. imports for consumption and domestic production by type of material, 1969-73

(In millions of pounds)

Fiber type	1969	1970	1971	1972	1973
	Imports				
Wool-----	90.8	80.0	61.8	56.8	60.8
Manmade fiber-----	290.8	448.0	680.4	706.8	748.7
Total-----	381.6	528.0	742.2	763.6	809.5
	Domestic production				
Wool-----	332.7	206.0	129.0	133.0	<u>1/</u>
Manmade fiber-----	1,825.7	1,874.0	2,121.0	2,664.0	<u>1/</u>
Total-----	2,158.4	2,080.0	2,250.0	2,797.0	-

1/ Unavailable

Source: Table 5 - 6 in appendix A.

1/ A considerable number of new and advanced spinning and twisting machines are of the "2 for 1 Twister" and "Open-end" machine type which do not use rings.

Data from the preceding table indicates that while the combined imports and production of woolen goods fell from 423.5 million pounds in 1969 to 189.8 million pounds in 1972 (55 percent decrease), total manmade fiber imports and domestic products of manmade fiber increased from 2,116.5 million pounds to 3,370.8 million pounds--an increase of 41 percent.

The Herr Manufacturing Co., Inc.

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STATISTICAL APPENDIX

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Table 2.--Spinning and twisting ring travelers: U.S. shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1969-73

Year	Domestic shipments	Exports	Imports	Apparent consumption	Ratio of imports to consumption
	<u>1,000 dollars</u>	<u>1,000 dollars</u>	<u>1,000 dollars</u>	<u>1,000 dollars</u>	<u>Percent</u>
1969-----	7,117	903	4	6,218	<u>1/</u>
1970-----	8,163	900	3	7,266	<u>1/</u>
1971-----	8,214	841	19	7,392	0.3
1972-----	8,954	1,136	28	7,846	.4
1973-----	9,737	1,393	82	8,426	.9

1/ Less than 1/10 of 1 percent.

Source: Compiled from responses to U.S. Tariff Commission questionnaires.

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Table 4.--Spinning and twisting ring travelers: U.S. imports for consumption, by principal sources, 1969-73

Sources	1969	1970	1971	1972	1973
	Quantity (pounds)				
United Kingdom-----	718	501	4,116	1,592	8,131
France-----	-	60	364	121	109
West Germany-----	-	-	-	2,924	2,627
Salvador-----	114	-	-	-	-
Japan-----	-	-	12	-	-
Total-----	832	561	4,492	4,637	10,867
	Value				
United Kingdom-----	\$2,066	\$1,387	\$16,951	\$10,515	\$69,519
France-----	-	1,268	1,488	1,320	1,325
West Germany-----	-	-	-	16,652	11,651
Salvador-----	2,172	-	-	-	-
Japan-----	-	-	840	-	-
Total-----	\$4,238	\$2,655	\$19,279	\$28,487	\$82,495

Source: Compiled from official statistics of U.S. Department of Commerce.

Table 5.--Textile: U.S. imports, exports, and domestic consumption, by fiber, 1960-73

Year	Imports				Exports				Domestic consumption ^{1/}				Ratio of imports to domestic consumption			
	Total	Man-made fibers	Cotton	Wool	Total	Man-made fibers	Cotton	Wool	Total	Man-made fibers	Cotton	Wool	Total	Man-made fibers	Cotton	Wool
	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Million pounds	Percent	Percent	Percent
1960	367.9	31.3	252.3	84.3	327.3	90.8	233.3	3.2	6,591.4	1,815.2	4,215.1	561.1	5.6	1.7	6.0	15.0
1961	286.2	23.5	188.9	73.8	328.5	86.4	239.2	2.9	6,601.7	1,991.7	4,058.1	551.9	4.3	1.2	4.7	13.4
1962	435.4	30.6	309.8	95.0	313.7	90.5	220.3	2.9	7,230.5	2,352.9	4,282.0	595.6	6.0	1.3	7.2	16.0
1963	435.0	36.2	304.3	94.5	308.5	97.1	207.8	3.6	7,416.9	2,714.1	4,125.4	577.4	5.9	1.3	7.4	16.4
1964	438.8	50.0	300.2	88.6	325.4	108.5	213.2	3.7	7,993.8	3,103.7	4,373.9	516.2	5.5	1.6	6.9	17.2
1965	544.7	79.0	360.7	105.0	308.3	129.1	173.7	5.5	8,760.1	3,564.0	4,639.6	556.5	6.2	2.2	7.8	18.9
1966	733.8	123.1	510.3	100.4	334.4	140.0	189.5	4.9	9,438.4	3,973.2	4,941.8	523.4	7.8	3.1	10.3	19.2
1967	665.8	138.8	443.4	83.6	326.7	133.0	188.4	5.3	9,365.2	4,251.1	4,669.2	444.9	7.1	3.3	9.5	18.8
1968	771.4	193.3	473.8	104.3	322.9	129.0	188.2	5.7	10,236.5	5,369.8	4,389.7	477.0	7.5	3.6	10.8	21.9
1969	841.6	257.5	487.9	96.2	383.5	146.2	232.1	5.2	10,337.8	5,663.5	4,228.4	445.9	8.1	4.5	11.5	21.6
1970	878.3	329.3	463.1	85.9	351.2	147.1	199.2	4.9	10,075.3	5,683.5	4,037.5	354.3	8.7	5.8	11.5	24.2
1971	1,009.9	451.1	492.6	66.2	382.5	146.7	226.4	9.4	11,341.9	6,834.5	4,231.3	276.1	8.9	6.6	11.6	24.0
1972	1,154.2	480.5	610.7	63.0	498.6	177.6	290.4	30.6	12,315.3	7,865.9	4,170.1	279.3	9.3	6.1	14.6	21.4
1973	1,083.2	462.9	559.5	60.8	642.3	286.2	325.3	30.8	12,916.9	8,828.6	3,875.9	212.4	8.4	5.2	14.4	28.6

^{1/} Domestic consumption equals mill consumption plus imports less exports of semimanufactured and manufactured products.

Source: Textile Organon, March 1974, p. 24.

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Table 6.--Wearing apparel of cotton, wool, and manmade fibers: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1965-73

(In millions of pounds, raw-fiber equivalent)					
Year and fiber	Production	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
1965:					
Cotton-----	1,890.7	119.9	18.0	1,992.6	6.0
Wool-----	372.2	35.4	.9	406.7	8.7
Manmade-----	1,205.6	30.8	7.5	1,228.9	2.5
Total-----	3,468.5	186.1	26.4	3,628.2	5.1
1966:					
Cotton-----	1,872.1	123.1	20.4	1,974.8	6.2
Wool-----	358.0	33.0	.9	390.1	8.5
Manmade-----	1,387.5	37.6	7.6	1,417.5	2.7
Total-----	3,617.6	193.7	28.9	3,782.2	5.1
1967:					
Cotton-----	1,690.4	133.1	23.2	1,800.3	7.3
Wool-----	330.8	30.8	1.0	360.6	8.5
Manmade-----	1,512.7	61.1	8.0	1,565.8	3.9
Total-----	3,533.9	225.0	32.2	3,726.7	6.0
1968:					
Cotton-----	1,629.7	140.0	27.5	1,742.2	8.0
Wool-----	345.2	41.4	1.0	385.6	10.7
Manmade-----	1,842.5	91.6	9.7	1,924.4	4.7
Total-----	3,817.4	268.0	38.2	4,047.2	6.6
1969:					
Cotton-----	1,642.2	142.7	35.8	1,749.1	8.2
Wool-----	332.7	41.5	1.0	373.2	11.1
Manmade-----	1,825.7	144.0	12.6	1,957.1	7.4
Total-----	3,800.6	328.2	49.4	4,079.4	8.0
1970:					
Cotton-----	1,535.0	142.7	30.0	1,647.7	8.7
Wool-----	206.0	38.1	1.0	243.1	15.7
Manmade-----	1,874.0	190.8	13.8	2,051.0	9.3
Total-----	3,615.0	371.6	44.8	3,941.8	9.4
1971:					
Cotton-----	1,602.0	149.4	30.2	1,721.2	8.7
Wool-----	129.0	31.2	1.0	159.2	19.6
Manmade-----	2,121.0	256.0	16.1	2,360.9	10.8
Total-----	3,852.0	436.6	47.3	4,241.3	10.3
1972:					
Cotton-----	1,732.0	177.9	34.3	1,875.6	9.4
Wool-----	133.0	27.5	1.3	159.2	17.2
Manmade-----	2,664.0	283.6	20.8	2,926.8	9.6
Total-----	4,529.0	489.0	56.4	4,961.6	9.8
1973:					
Cotton-----	1/	161.8	29.9	1/	1/
Wool-----	1/	27.2	2.3	1/	1/
Manmade-----	1/	285.8	24.8	1/	1/
Total-----	1/	474.8	57.0	1/	1/

1/ Not available.

Source: Production compiled from Textile Organon; other data compiled from official statistics of the U.S. Department of Agriculture.

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