

Machinery and Appliances.

THE SILENT SIMPLEX MULE

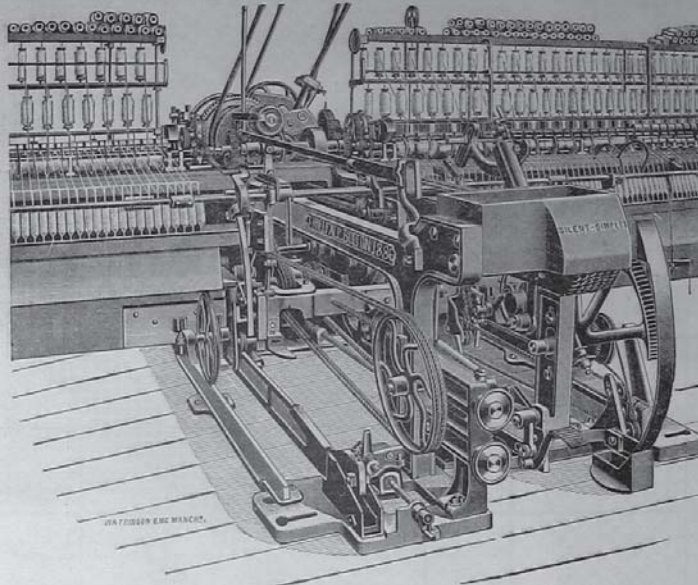
Mr. RICHARD THRELFALL, MAKER, BOLTON.
The machine making firm, founded about the beginning of the present century by the late Mr. Richard Threlfall, of which he was, for many years, the head, and which is still carried on in the same style and name by a member of the family, is widely and favourably known for its fine yarn mules, which are found in the leading establishments of both this country and the Continent, and also in several places in the United States. Still, as the field for the fine mule is a limited one, and, as progress is the order of the day, the present management,

We look upon a well constructed modern mule as the most wonderful and admirable piece of automatic machinery in existence, and in the careful examination which we made of this particular specimen, we experienced no drawback to the pleasureable sentiments such an investigation usually excites. To meet the requirements of the increased speeds now run, and to avoid vibration, the makers have furnished it with a strong and firm frame; the headstock being especially massive, obviating liability to fracture, particularly to that of the front buffet.

The rim shaft is made of steel, with cast iron bushes for journals running in cast iron bearings, and is fitted with an arrangement for expediting change of strap. The driving pulleys are 18in. diameter. The backing-off cone is made larger than usual, with teeth $\frac{1}{2}$ in pitch. The levers in connection with the

which prevents slipping, such an objectionable feature in cones of small diameter. The drawing-up arrangement is placed under facile control, by the minder, so that he can take it out of gear at any position of the carriage when it is going up. This is accomplished by means of levers, and a connecting rod terminating in a foot lever at the front of the headstock. This gives the minder power to prevent, it may be, serious or fatal accidents, as, should he discover anybody improperly in the way between the carriage and the roller beam, he can instantly arrest the inward movement of the carriage. The scrolls on the drawing-up shaft are of an improved construction, starting the carriage slowly, greatly accelerating its movement, and before it arrives at its destination diminishing its speed and finishing slowly.

The cam shaft is driven in the usual manner. The cam is worked by a cone, instead of a



FRONT VIEW.—THE SILENT SIMPLEX MULE.—MR. RICHARD THRELFALL, MAKER, BOLTON.

feeling themselves justified by the success already achieved, have determined to make a new departure, and enter the field of competition with makers of a mule for medium and low counts. They have, therefore, constructed a mule on these lines, incorporating therein such alterations, additions, and improvements, as their experience with the fine mule lead them to think will prove an advantage. The mule for this purpose, as turned out from the establishments of the best makers, is, however, so perfect, that no one need to look for a revolution in its construction from the hands even of the greatest inventive genius. The changes incorporated therein will, therefore, be found to consist of improvements in details, the addition of some motions that will fit the mule for spinning counts higher than the average, should circumstances, which they often do, render it advisable for the spinner to cater for the wants of people requiring higher numbers. These additions practically give the spinner another string to his bow.

The firm have accordingly constructed a model mule on these lines, to which they have given the name of the Silent Simplex Mule.

backing-off arrangement are keyed in their places.

The drawing-out wheel is mounted upon a radial arm, which obviates a considerable amount of labour in changing, as there is now only one wheel to adjust. The gearing on the front roller shaft is with bevel wheels. The stretching motion wheels are encased in a round box, instead of the usual oval one, which improves the appearance. The gain wheel is driven from a spur wheel from the front roller box, and is placed in or out of gear by the cam on the cam shaft through a suitable connection by a lever. The fixing that carries the gain wheel works in a grooved fixture, strong and firm, an arrangement which prevents the twisting that sometimes takes place.

The backing-off and drawing-up shaft is fitted with a flat pulley for strap driving. The shaft bearings are shrouded with cast-iron bushes running in cast-iron bushes. There is an arrangement on the backing-off lever that will not allow the taking-in motion to gear until the backing-off is completed.

The drawing-up cone is of enlarged diameter,

clutch box, which is put into and out of gear by steel pins running on the inclines. The cam lever is retained firmly in position by a very simple and novel arrangement: the horizontal lever end is rounded, and against this a bowl, mounted on a vertical lever, is made to constantly press, being held in position by a coiled spring. By this means the lever is firmly maintained in both its positions.

There is a motion for delivering rove when the spindles are twisting at the head. There is also a roller motion for delivering rove when the carriage is being taken in; it delivers about 34 inches. A second stretch motion is also supplied for use, if desired, when spinning finer counts than ordinary.

The quadrant is cast in a solid piece, wheel and trough combined. The teeth are of an improved construction, the bottom of the space between the teeth being curved to receive the crown of the tooth, instead of being made flat or round as when forming part of periphery of the wheel. This gives additional strength to the teeth. An improved governing arrangement has also been introduced.

An automatic arrangement is applied which puts the winding arrangement into gear when the mule has finished backing-off. The check-band is so arranged that provision is made to carry a small extra amount of rove, which in the event of the band breaking near the end, is available for use in making it sufficiently long for use again.

There is also an arrangement which, when the draw-out is nearly finished, will put the strap on a little earlier each time. It is an assistant to

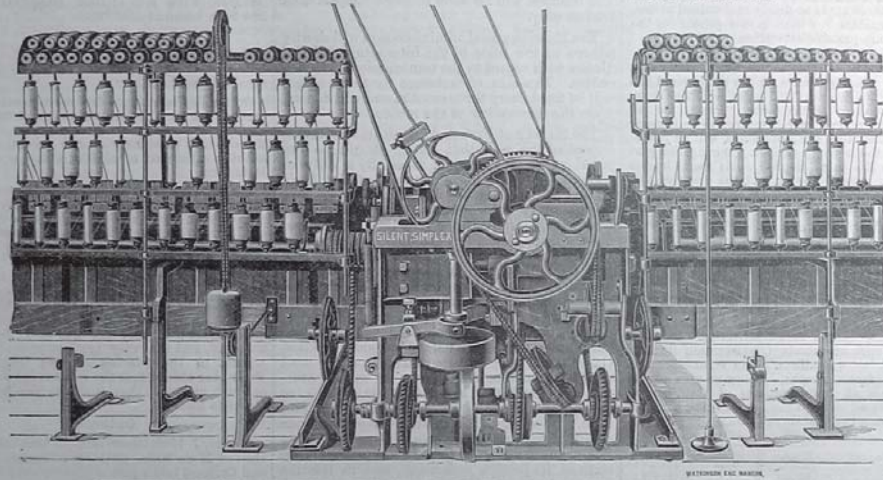
the winding motion, and accelerates the procedure.

Throughout the headstock the bearings carrying the different shafts are cast to the frame wherever possible, and where not, sockets are tongued and grooved, and in the cases which have not to be adjusted are pinned.

There are slips on each side of the headstock which are bolted on the headstock feet. The coping rail is a long one, and is also bolted to the headstock feet like the preceding.

The carriage square is about 6ft. 6in. long, and clips the carriage about 2ft. on each side of the headstock. The carriage is 22in. broad. We give two illustrations, a front and back view of this fine mule, which give a good idea of its general appearance.

In concluding, we can only repeat the sentiments of pleasure expressed above, the result of the makers' labours being the production of a mule apparently as perfect as mechanical skill can make it for its intended purposes. It is well worth the notice of the trade. The firm addressed as above will be pleased to reply to any communications.



BACK VIEW.—THE SILENT SIMPLEX MULE.—MR. RICHARD THRELFALL, MAKER, BOLTON.

Foreign Correspondence.

THE WOOL AND TEXTILE TRADES ON THE CONTINENT.

(FROM OUR OWN CORRESPONDENTS.)
ANTWERP.

The demand for River Plate wools continues active, but stocks being still small, transactions are only limited. Prices are firm at last auction's rates. The stock to-day is 3,432 bales River Plate, 1,250 bales Australian, and 270 bales Spanish and sundry wools. The wools of the new River Plate clip are generally satisfactory in condition, quality, and with few burrs, but there are many short fleeces in the clips from Monte Video, caused by epidemic. The top market, in futures, has been quiet during the past fortnight. The principal business done was again in River Plate tops, German combed, which are quoted at 1s. 6-25, 1s. 6-30 (27d. 26 1/2d. per lb.), for January-November delivery.

BERLIN.

The past year has not been unsatisfactory for several branches of the local textile trades. The rise in wool at the beginning had an important influence on the trade, and at the end of the year the stocks of raw material were so small that there is every prospect that late rates will be fully maintained. The yarn branch has been very active throughout, as well for home as for export demand, although great difficulty was frequently experienced in obtaining the advances in prices which spinners were compelled to demand in the face of the continued rise in values of all raw materials. This was the case for both combed and combed yarns. Manufacturers, with the exception of carpet, basket, and heavy woollen makers, have had reason to complain. The principal branch of the Berlin trade, which is stuffs, has been disappointing, mostly on account of the greatly diminished demand for ladies' mantles, especially for export. Then again the high prices of wool made it very difficult to work to remunera-

tion, so that on the whole the year 1899 cannot be said to have been a profitable one for this department. The hosiery trade was fairly satisfactory. Stocking and fancy manufacturers have been very busy all along. The hatting trade has also been very good, and the strikes, which at one moment threatened to extend to Berlin, passed over without difficulty. The new Berlin combed yarn spinning concern is expected to commence work early in the year.

CHEMNITZ.

There has been little notable change since our last report. The bulk of the spring orders have been placed, and as it is too early for any repeats, buying is not going on to any great extent at present. Makers of all descriptions are, however, fully employed, though they still complain of unremunerative prices. The glove industry is also fairly busy, though in some respects things are at present against it. Kid gloves are more in favour than they were, and the demand from America is declining, owing to the increase of production there. Some of the new worsted kinds are decided novelties, and prove very attractive to buyers.

FOURMIES.

Business has shown a slightly more favourable turn during the last few days, and some important orders, in both merinos and cashmeres, have been placed by export houses for the new season's trade. A few repeat orders in summer season's fancy dress fabrics have also come to hand, which will keep makers well engaged until next winter season's trade opens out, in view of which pattern ranges are in course of preparation, to be placed shortly in the hands of wholesale merchants. It is yet too early to form any correct opinion as to the issue, but it is reported that the demand for plain makes will predominate, and that orders will be numerous. The situation is satisfactory. Stocks are exceedingly reduced.

LYONS.

Transactions in velvets have, during the past week, been very dull. Only small sales can be reported in the qualities with silk pile. As to the shapette qualities, they have received very limited attention. In figured and striped velvets the same slackness prevails. Purches are selling very slowly. There is a better disposition to buy velvet ribbons

principally in black, but the comparatively low offers made by consumers render business somewhat difficult. Crapes are still much favoured. Plain or figured crapes de Chine are selling in rather large assortments. Loose crapes for riches find a good outlet. There is a regular demand for black English crapes. Mufflers are dull, and pockettes are disposed of only in small assortments.

The favourable situation of the raw silk market is maintained. Prices, during the past twelve months, have never been so high, and there is for nearly all classes of silks an improving tendency. Stocks in dealers' hands are not very heavy, manufacturers having bought largely, besides, production is not so extensive as before. In the piece goods market there has not been much doing, as usual, at this time of the year. The articles most in demand have been pongees, Batavias, and satins in the lowest qualities. All-silk makes have met but little inquiry, either for plain or figured sorts.

The following table shows the extent of French imports and exports of raw and twist silk, and textiles manufactured therefrom, during the first 10 months of the years 1881 to 1889:—

	Imports.	
	Raw and twist silk.	Silk textiles.
	Francs.	Francs.
1881	311,235,000	41,584,000
1882	250,446,000	35,059,000
1883	232,553,000	36,763,000
1884	217,336,000	35,413,000
1885	173,860,000	33,988,000
1886	222,113,000	35,155,000
1887	220,649,000	41,068,000
1888	152,830,000	42,276,000
1889	208,149,000	54,505,000
	Exports.	
	Raw and twist silk.	Silk textiles.
	Francs.	Francs.
1881	157,138,000	196,373,000
1882	170,106,000	253,293,000
1883	127,070,000	251,675,000
1884	137,350,000	183,550,000
1885	94,901,000	192,441,000
1886	113,745,000	210,778,000
1887	113,637,000	181,650,000
1888	98,551,000	191,012,000
1889	102,167,000	211,765,000