

Machinery and Appliances.

USEFUL SPECIALITIES FOR SPINNERS.

MAKERS: MESSRS. E. JAGGER & Co., WERNETH,
OLDHAM.

With the development of the cotton trade it is astonishing how many subordinate industries have sprung up, called into existence by the wants of the great trade that has done so much to place this country in the forefront of the commerce and industry of the world. The number of these is really too great to enumerate, and their names would puzzle those who are strangers to the trades to which they are attached. Still, for the sake of justifying our statement, and, perhaps, opening out the ramifications of the parent industry into the bypaths of industrial life we may be permitted to name a few. In the early days of the business spinners and manufacturers made their own machinery, but that is long ago. We have now the great machine making industry for both branches of the trade; this employs many thousands of people. The machinist equips a mill with the principal machinery, but after that there is still much to do in the way of clothing it and making it ready for work. All the machinery must be furnished with driving belts, and their working parts must be lubricated; and these requirements bring in the belting manufacturer and the oil merchant. The driving gear must be lubricated, and the wheel-grease manufacturer provides the requisite. The cards must be clothed, and for this the carding-clothing manufacturer is always ready with his aid. The machinery must be provided with bobbins, on which the material in several processes must be wound. Bobbin manufacturers ready to supply these are to be found in plenty. The spindles of spinning machines are driven mostly by cotton bands, and the banding manufacturer will do the needful.

In spinning, considerations of economy have led, in many places, to spinning the yarn upon tubes to lessen waste, and the cop tube manufacturer comes to the front. But filling thousands of spindles by hand with cop tubes is a slow process and causes the waste of much valuable time, and to obviate this the maker of mechanical tubers comes to the front, a comparatively recent speciality, which is the cause of these remarks being penned. We may as well stop here at the end of the spinning division of the trade, as a similar list could be gone through in the manufacturing section, yet without exhausting the list in either division.

In one of the early issues of *The Textile Mercury* we gave a description of Messrs. E. Jagger and Co.'s cop-tubing apparatus, or rather one type of it, and promised to describe the others subsequently. It is convenient to redeem this promise at the present time, and we have much pleasure in doing so.

The type of tuber we then described and illustrated was the rotary one. The one we now notice is the segmental one.

Spindle tubes are of various lengths according to special requirement—short, medium, or long. The segmental pattern of tuber is designed more particularly for placing long tubes upon the spindles that will reach all through the cop; but it is also applicable for placing all lengths of shorter tubes with the same tuber. The illustration (Fig. 1) represents the tuber as it is placed upon a table or bench, and in position

for filling. The tubes are dropped into the holes in the carrier J, and are thus held in an upright position. Before putting the tubes into the holes, care should be taken to push the carrier as far back as it will go, and lock the slide G with the clasp for that purpose, to prevent the carrier moving and the tubes falling through the shoots by accident before they are required.

This type is constructed on the same principle and actuated in the same manner as the cylindrical one previously described.

When a tuber has thus been filled it may be hung on a rod or rail, steam or gaspipe, or on the faller shaft, by the hooks N N, as shown in Fig. 2. In the latter case in readiness for

forward the length of itself, the rear guide being placed on the spindle on which is the last or end tube of the previous delivery, and the slide G moved in the opposite direction, and so on until the end of the machine is reached. Whilst in this manner the tube carrier is being moved, the spiral spring attached to the compensating lever L, and to the hook H, holds it in position, preventing it from moving backward, the whole operation being performed with the greatest ease, and the tubes placed on to the spindles with perfect accuracy.

The use of these tubers in their various types is continually extending, and it only needs a short experience of their advantages to obviate

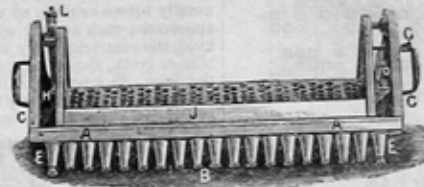


FIG. 1.

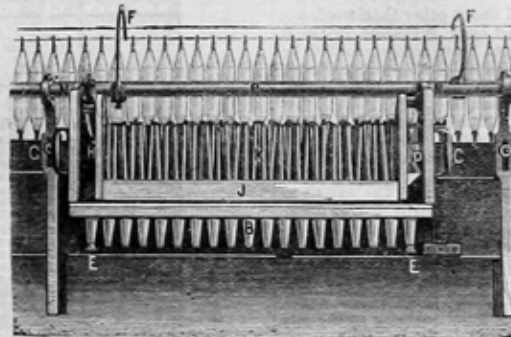


FIG. 2.

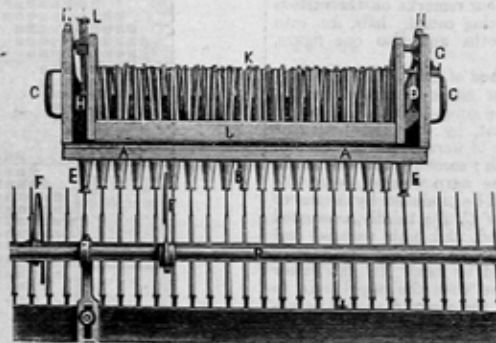


FIG. 3.

doffing time, the tubers being placed at a distance apart from each other, so that when one is emptied of its tubes, after placing them on the spindles, it can be hung on the faller shaft and the full tuber quickly taken up, and the process of tubing continued until the end of the machine is reached.

In Fig 3 we represent the tuber as when in use. It is carried by the handles C C, the two guides E E are placed on two corresponding spindles, the shoots B being thus held exactly over the intervening spindles; the operator then, after throwing back the clasp, moves the slide G, which movement actuates the lever D and causes the carrier to move a step forward, bringing a row of tubes over the shoots, which tubes all fall simultaneously through on to the spindles beneath. The tuber is then carried

all opposition and convince persons of the economy attending their use. They are made with their shoots of gauges to suit those of the spindles of the machines—whether mules, twiners, or rings—in connection with which they are intended to be used.

As showing how businesses have an irresistible tendency to grow when properly managed we may here incidentally notice the fact that Messrs. Jagger and Co. have just commenced the manufacture of tubes, having laid down new plant all constructed on their own premises, and having several improvements, one of which especially ensures the tubes being turned out with perfectly clean bottoms, and not as is often the case with such an excess of paste upon them as to impede their descent down the blade of the spindle. The processes to be gone through

in making the tubes are few and simple, consisting chiefly of cutting the paper into strips necessary for the respective sizes and shapes the tubes are intended to be made.

These are taken to the machine girls, who, with dexterity and rapidity, transform them into tubes on the machines, the latter delivering them to the attendant to place upon a tray, or otherwise upon wires for placing in racks. These filled they are taken to the stove and dried. Each tray or rack holds a given number, which greatly facilitates the counting. They are next packed and shipped to their destination, at home or abroad, as the case may be.

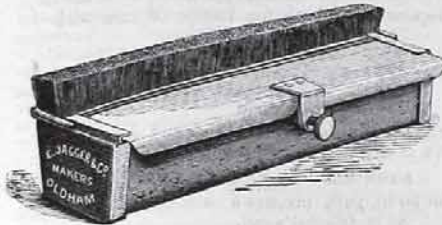


FIG. 4.

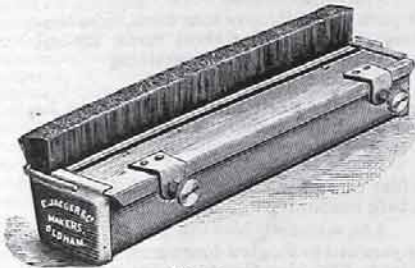


FIG. 5.

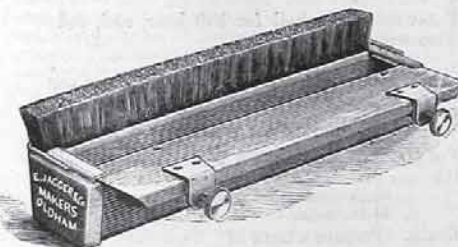


FIG. 6.

In spinning medium and low counts of yarn it is not often that tubes are used, especially if the yarn is destined for consumption in the home trade and has not to be much knocked about before it reaches its destination. In this case the cop bottoms are starched, or pasted as the process is called.

The utility of this process is so well known to spinners that it is needless here to go into its merits. There are, however, some disadvantages which render its careless use objectionable, and in most cases the objections will be found to arise from the style of paste box and brush used. The flowing of paste over the spindle board, and making up of the bolster steps (thus giving to the top of carriage a dirty unsightly appearance in the one case, and binding fast of the spindles in the other), are looked upon as co-existent with and inseparable from the use of paste. It will be clear to any thoughtful mind that where a substance is overflowing to waste there ought to be curtailment, and also, where the same runs short, that which would be wasted should be brought to its assistance. Formerly, anything seems to have been thought good enough, from a bucket and hand-brush to a square-shaped box with longitudinal brush attached to it; but little has been done to accomplish the work with

cleanliness, evenness of supply to each cop bottom, and for the general efficient achievement of the object in view.

Seeing that these objectionable results arose from an ill-regulated supply of the size to the spindles, Messrs. Jagger and Co., designed the combined box and brush illustrated herewith. Fig. 4 shows the box as constructed with one regulator and slightly opened for pasting. Fig. 5 shows it with two regulators, and in the same condition as the foregoing. Fig. 6 shows it with the sluice opened for filling.

The ordinary box is 10 in. long, 2½ in. wide, and 1½ in. deep (over all), the back of which slopes outward, forming an obtuse angle with the bottom, the division inside following the same course to enable the paste or starch to run down the slope to the brush when in use. The regulator at front of lid or sluice is of the most simple character, which, by screwing or unscrewing, the sluice or lid can be set to any size of opening for the outlet of paste or starch. This screw, however, does not interfere in the least with the re-filling of the box, as the lid or sluice can be opened, the box filled, and sluice replaced without interfering at all with the adjusting screw. The slides into which the sluice or lid works are so fixed to the flanges at the ends as to grip them tightly between, in addition to being soldered, thereby removing the possibility of slides coming off, as in almost all others is the case. The material is of extra strong sheet-brass, with steel wire across back, to strengthen and prevent the wear that would otherwise occur by sliding on the spindled board.

By the use of the paste box, as illustrated, all the foregoing difficulties can be overcome. It will be found handy to use, easy to regulate and re-fill, efficient in its work, durable in wear, and cheap at first cost.

Messrs. Jagger and Co. are makers of several other useful specialities, especially a cheap and efficient spindle footstep protector, which has proved its efficiency by having been adopted to the extent of between four and five millions. We trust to notice this briefly in our next. For information on any of these several matters the makers may be communicated with as above.

A large spinning establishment for combed wool is to be fitted up next spring at Gzenstochan, in Russia, by the exertions of some French gentlemen, M.M. Motte, Meillasoux, Bauliez, and Delaoutre. The buildings will cover a surface of 1,000 square toises, and the cost of construction will amount for 1890 to 300,000 roubles.

The prospects for the coming year in the machinery trade are very encouraging. Extensive additions are being made by various firms to meet the demands of the forthcoming seasons, amongst the number being Messrs. Hutchinson, Hollingworth and Co., Limited, the well-known firm of loom makers, of Dobcross, Yorkshire. During the past year they have been, we are informed, fully employed on the building of the Hollingworth and Knowles loom, upwards of 1,700 of these looms having been erected during the past twelve months. Some important additions to their foundry are almost completed, which, when finished, will cover a ground area of over 2,000 square yards. We also learn that preparations are being made for the further extension of their works in the form of a new erecting and machine shop, and suite of offices. The building, which will be fireproof, will be two storeys in height, with a total floor space of over 5,000 square yards. The railway company are also constructing for the firm a private siding, so that when the new portion of the works are completed there will be every facility for unloading and despatching goods. The additions are expected to be completed before the autumn, when 250 additional workmen will be required.

NEW PATENT STOP MOTION DOUBLING WINDING FRAME FOR BOBBINS OR COPS.

MESSRS. G. H. HOLDEN AND CO., CARR ST., BLACKFRIARS, MANCHESTER.

We have often stated that yarn winding is the simplest amongst the manufacturing processes, as it consists merely in securing a parallel arrangement of threads, as wound from the cops or bobbins of spinning machines. When, however, we consider that in some descriptions of manufactures it is necessary to wind together, for the purpose of subsequent twisting, two, three, or more threads, as the case may be, an element of complexity is introduced which removes the process a considerable distance from the simple form of single-thread winding. In winding more threads than one together it is highly essential that the breakage of one thread should be instantly detected, and immediately cause a stoppage of the winding of the remainder. Otherwise, a certain portion goes forward which will be defective, inasmuch as it will be weaker by the proportion that the one absent thread may bear to the remainder. Another requirement is that all the threads being wound shall be wound at a perfectly equal tension. Should this point not be attained, serious defects result. With these problems confronting machine makers, we need not particularly wonder at the fact that devices for overcoming them have been very numerous, all being more or less effective for their purpose; and beyond this, we need feel no surprise either that to the improvement of the winding machine there seems literally to be no end. Patents are being continually taken out securing ingenious improvements in details which constantly demand the notice of manufacturers.

We have pleasure in drawing the attention of our readers to a preliminary description to some important improvements just introduced by Messrs. G. H. Holden and Co., Manchester, in the winding frame. The improved machine this firm is introducing into the market is constructed on Messrs. Holden and Ashworth's patent. In it the inventors have discarded the usual mangle wheel, and are driving the traverse by a heart motion which is arranged to give a spreading traverse, the advantage of which is that it secures easier winding of the bobbin in subsequent processes. The machine frame is lower than usual, which is convenient, as it admits more readily of being attended by quite young girls. In setting a bobbin to work, all that is necessary is to give a slight push to the starting-lever, which brings the bobbins in contact with the drum, and gives a nice, easy, and soft start, preventing any jerking or breaking of the yarn that so often occurs when this point is not sufficiently considered. The speed attained in winding, on account of the simplicity of the details of the machine, has been greatly increased, being carried fully 25 per cent. higher than ordinary, or say from 3,000 to 4,000 inches per minute. We saw the machine running off 4,500 inches per minute.

A special feature consists of the introduction of a new and peculiar thread guide. This guide is a short tube which curves outward at both ends and is cut away underneath to admit of the reception of the thread. This outward curvature relieves the passing thread from friction against any sharp edge, and thus prevents the stripping off of the outstanding fibre upon the yarn that usually occurs with any yarn of which these outstanding fibres are a feature, and thus prevents waste. An appreciably better weight in yield will therefore be