L. SCHORSCH.

DRAWING TUBE OF RING SPINNING MACHINES.

APPLICATION FILED AUG. 8, 1912.

1,404,165.

Patented Jan. 17, 1922

2 SHEETS—SHEET 1.

Fig. 2

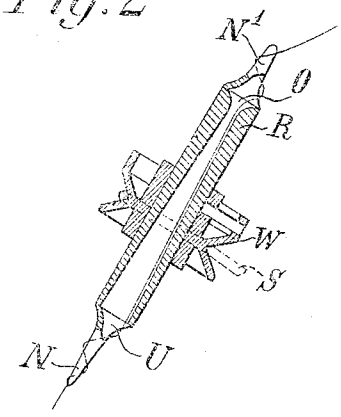


Fig. 1

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Fig. 3

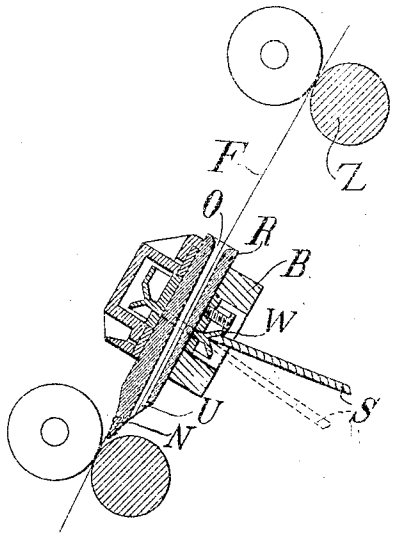
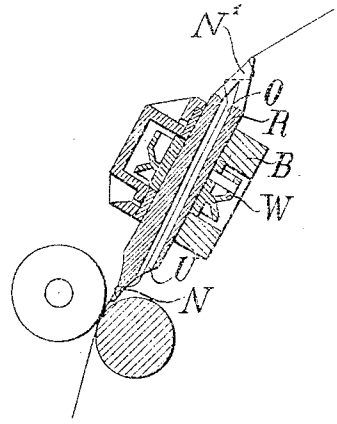


Fig. 4



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UNITED STATES PATENT OFFICE.

LUDWIG SCHORSCH, OF BIALA, AUSTRIA, ASSIGNOR TO FIRM G. JOSEPHY'S ERBEN, OF BIELITZ, AUSTRIA.

DRAWING TUBE OF RING-SPINNING MACHINES.

1,404,165. Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed August 8, 1912. Serial No. 714,104.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that I, LUDWIG SCHORSCH, subject of the Emperor of Austria, residing at Biala, Galicia, Austria, have invented certain new and useful Improvements in Drawing Tubes of Ring-Spinning Machines, (for which I have made application in Austria Aug. 24, 1911, and July 2, 1912, patents numbered 54,399 and 61,801, respectively; in Great Britain July 15, 1912, and July 16, 1912, patents numbered 16,495 of 1912 and 16,585 of 1912, respectively; in France July 19, 1912, Patent No. 446,256, and in Belgium July 20, 1912, Patent No. 247,754,) of which the following is a specification.

The use of the ring spinning machine for spinning carded yarn requires highly skilled operators when it is desired to work the ring spinning machine in an economical manner with the smallest possible number of operators, because it is difficult to insert broken roving into the drawing tube whilst the machine is working.

This is the chief reason why the ring spinning machine has up till now been employed only to a comparatively limited extent for working on carded yarn. Consequently the designers of ring spinning machines have been directed to producing a drawing tube which will feed the yarn automatically to the drawing rollers.

Now the present invention has for its object to provide an improved drawing tube for ring spinning machines working on carded yarn which feeds the yarn automatically to the drawing rollers, so that it is no longer necessary to draw the roving with a hook through the drawing tube, but it is sufficient to introduce the roving by hand into the upper opening of the drawing tube.

The automatic drawing of the roving through the drawing tube is effected by providing the drawing tube according to this invention with a conical bore instead of the usual axial cylindrical bore, said conical bore increasing in diameter from the inlet opening towards the yarn outlet opening. Or it is provided with a bore inclined towards the axis of the drawing tube.

In the accompanying drawings four constructions of drawing tubes are illustrated by way of example in longitudinal section and viz. Figs. 1 and 3 show a drawing tube for yarns with small draw and Figs. 2 and 4 show a drawing tube for yarns with large draw.

As can be seen from Figs. 1 and 3 the roving F delivered by the feed rollers Z passes through the inlet aperture O into the drawing tube R which is mounted in the tube stand B. The drawing tube is rotated by means of the cord S passing around the whorl W.

The bore of the drawing tube instead of being cylindrical as usual, is made of conical shape enlarging from the upper aperture O towards the needle N, as shown in Figs. 1 and 2, or the bore of the drawing tube is inclined to the axis of the tube, as shown in Figs. 3 and 4. By this means the end of the roving which enters the upper aperture O is carried round by its friction against the side of the drawing tube.

The centrifugal action produced by the rotation of the roving, imparts to the latter a tendency to increase its radius of rotation and thus move away from the axis of rotation of the tube. The result of this is to cause the end of the roving to follow the downwardly increasing bore of the tube (Figs. 1 and 2) or the bore which is gradually receding from the axis of the tube (Figs. 3 and 4), and thus pass through the latter, whereupon on issuing from the lower aperture U the roving is caught by the needle N and fed to the drawing rollers V. For yarns which are being spun with small draw, such as waste cotton, waste linen and the like, the arrangement of the drawing tube according to Figs. 1 and 3 is sufficient. For woollen yarns however which are spun with a larger draw it is necessary to impart to the roving that vibrating motion which is attained, when spinning with the selfactor, by the turning of the roving over the point of the rotating spindle, and which enables to attain the large draw.

For this purpose the upper end of the drawing tube is not truncated but is provided in the same manner as the lower end with a needle N' (Figs. 2 and 4) over which the roving is compelled to turn once at each revolution of the drawing tube in a similar manner as it does over the point of the spindle of the selfactor.

The improved drawing tube constitutes an important improvement in ring spinning

machines working on carded yarn, the manufacture is rendered more easy and is increased, because it allows of dispensing with the drawing of the roving by means of a hook through the tube, which operation takes up a great deal of time and requires skilled operators. The attendance on the machine is thus considerably simplified.

Besides by this construction of the drawing tubes the applicability of the machine and the quality of its yield is increased because both materials with a large draw and such with a small draw can be spun in a profitable manner.

Claims.

1. A drawing tube comprising a whorl, a tube on which the whorl is mounted, said tube having a central conical passage, a needle extension at the larger end of said passage, there being a hole at the base of the needle communicating with said passage and arranged laterally thereof to permit the roving to pass in a straight line from the smaller end of said passage and hole, and then pass around said needle.

2. A drawing tube comprising a whorl, a tube on which the whorl is mounted, said tube having a central conical bore, a concentric conical needle extension at the lower end of said tube, having a hole at its base communicating with the larger lower end of said bore and arranged laterally thereof to permit the roving to pass in a straight line entirely through said bore and hole, a concentric needle extension at the upper end of said tube having a hole at its base to permit the entrance of the roving to the bore.

3. A drawing tube comprising a whorl in combination with a tube on which the whorl is mounted and having a conical bore which is enlarged continuously from the entrance to the delivery end of the tube portion, said bore having a laterally arranged hole at its base, and a needle forming a concentric extension of said tube.

4. A drawing tube comprising a whorl in combination with a tube on which the whorl is mounted, said portion having a conical bore which is enlarged continuously from the entrance end to the delivery end of the tube and terminates in a laterally arranged hole through which the roving passes without bend, and a pointed end forming a needle at the delivery end of the tube portion.

5. A drawing tube comprising a whorl, in combination with a tube on which the whorl is mounted, said tube having a conical bore which is enlarged continuously from the entrance end up to the delivery end of the tube and terminates in a laterally arranged hole, and pointed ends forming a needle at the entrance and at the delivery end of the tube portion.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LUDWIG SCHORSCH.

Witnesses:
JOSEF RUBINSKI,
AUGUST FUGGER.