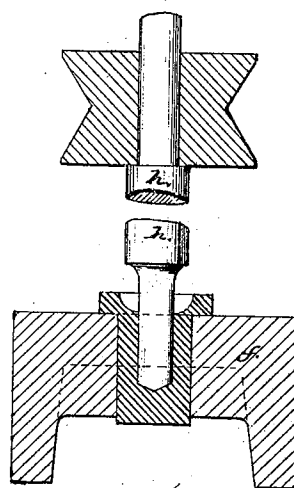
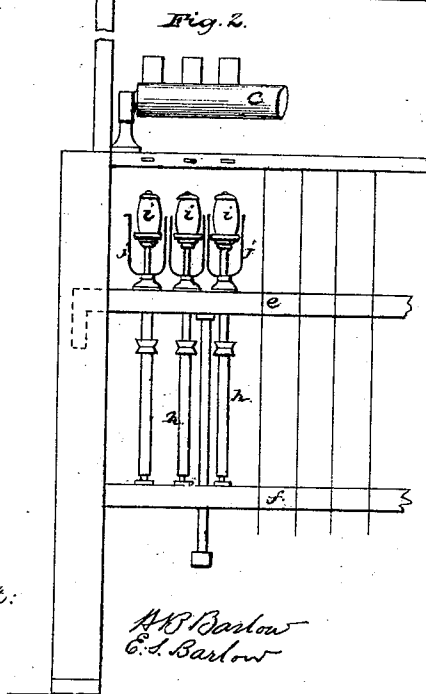
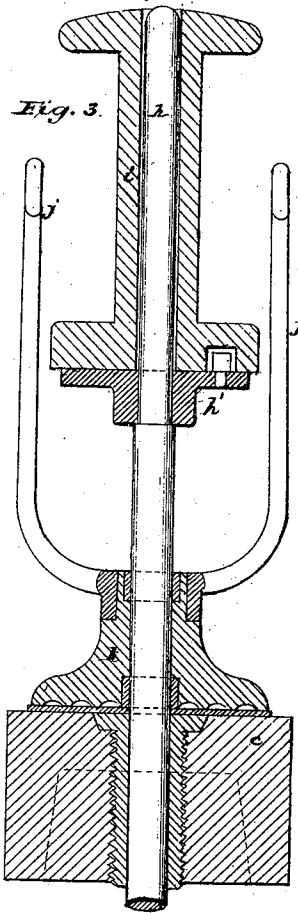
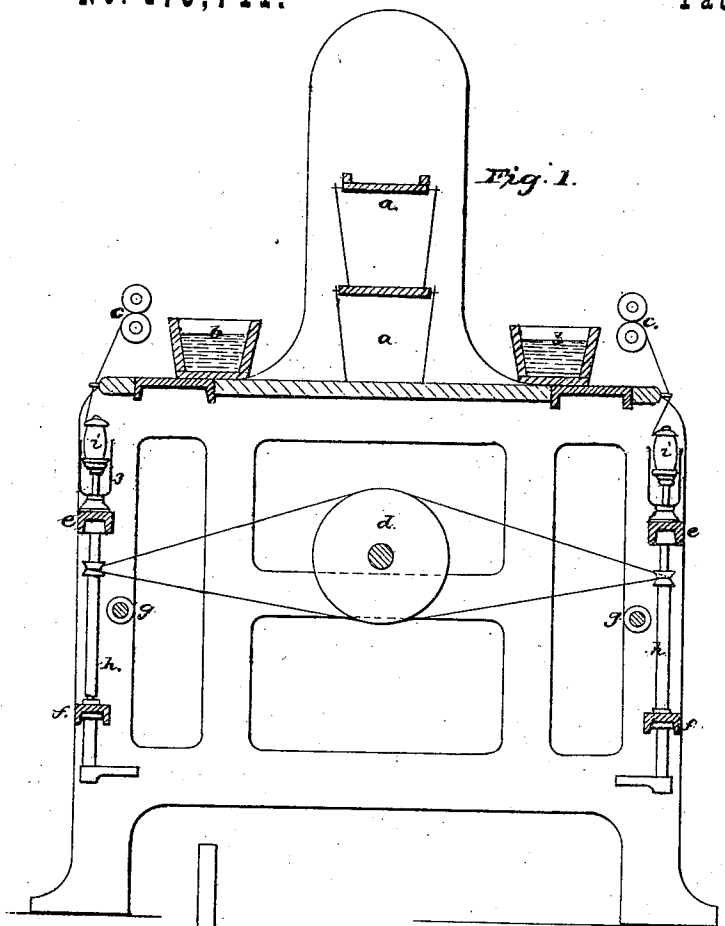


J. L. TAYLOR & R. RAMSDEN.

SPINNING AND DOUBLING MACHINERY.

No. 179,741.

Patented July 11, 1876.



Inventors;

John Leigh Taylor
Robert Ramsden

Attest:

H. P. Barlow
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UNITED STATES PATENT OFFICE.

JOHN L. TAYLOR AND ROBERT RAMSDEN, OF BOLTON, ENGLAND.

IMPROVEMENT IN SPINNING AND DOUBLING MACHINERY.

Specification forming part of Letters Patent No. **179,741**, dated July 11, 1876; application filed June 7, 1876.

To all whom it may concern:

Be it known that we, JOHN LEIGH TAYLOR, of Bolton, in the county of Lancaster, England, and ROBERT RAMSDEN, of the same place, have invented certain new and useful Improvements in Machinery for Spinning and Doubling Cotton, Silk, Worsted, Woolen, Linen, and other fibrous materials; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, forming part of this specification.

Our invention relates to the machines known as "throstle spinning and doubling frames;" and it consists in imparting a positive motion to the bobbin on which the yarn or thread is wound, and a variable motion to the inverted flier, which is fixed to a bush, bearing upon a flannel or other washer placed on the lifting-rail.

Figure 1 is an elevation, in section, of an ordinary throstle doubling-frame to which our improvements are applied. Fig. 2 is a front view of one end of the same, and Fig. 3 is a full-sized view of our improved spindle and flier.

In Figs. 1 and 2, *a* is the creel; *b*, the troughs; *c*, the press-rollers; *d*, the driving-drum; *e*, the lifting-rails; *f*, the footstep-rails, and *g* the shafts for the lifting-pulleys. All these parts are made in the usual manner.

h is the spindle, (see Fig. 3,) which is supported below in a footstep, and above in a bolster, in the rails *f* and *e*, as usual; and *i* is the ordinary bobbin, which bears upon the plate *h'*, connected to the spindle by a key or otherwise, so that it can be easily removed, when required. In this plate is a stud, fitting into a hole in the under side of the bottom flange of the bobbin. By this means the bobbin is carried round by the spindle, which is driven, as usual, from the drum *d*, as shown in Fig. 1.

The inverted flier *j* is fixed to the bush *k*, which is made of metal, wood, or other suitable material; and the lower surface of this bush bears upon a flannel or other washer, resting on the lifting-rail *e*.

The drag produced by the weight of the flier and the bush on the washer causes the flier to wind the yarn or thread onto the bobbin at the requisite tension; and this tension can be regulated, as required by the strength or fineness of the yarn or thread, by increasing or reducing the weight of the bush, or by

varying the size of the washer or the material of which it is made.

In order to reduce the friction of the bush on the spindle, it may be desirable to apply small brass tubes at the upper and lower ends of the bush, as shown in the drawing.

When the machine is at work, the rising and falling of the lifting-rail *e* causes the fliers *j* to wind the yarn evenly over the whole length of the bobbin, the bobbins remaining at the same level.

In applying our improvements to throstle spinning-frames it is evident that the troughs *b* and pressing-rollers *c* are dispensed with, and in lieu thereof the ordinary drawing-rollers are employed.

The advantages obtained by our improvements are: First, no oil is required for the spindle to lubricate the bobbin after doffing, as heretofore; secondly, no snarling of the yarn on the top of the spindle can take place; thirdly, no friction of thread against the flier-leg; fourthly, no removing of fliers when doffing; fifthly, a great saving of waste is effected, and of time in doffing, and the bobbins can be doffed while the frame is going; and, lastly, as the bobbins bear upon metal plates, they are not liable to be saturated with oil, and consequently no oil can penetrate to the yarn on the bobbin, as heretofore.

Having thus stated the nature and particulars of our invention, we declare that what we claim herein as new, and desire to secure by Letters Patent of the United States as our improvements in machinery for spinning and doubling cotton, silk, worsted, woolen, linen, and other fibrous materials, is—

The combination of a bobbin, which is carried round by the spindle, with an inverted flier, which is carried round by the yarn or thread, the requisite drag being obtained by the friction of a flannel or other washer, as shown and described.

In testimony whereof we have hereunto set our hands before two subscribing witnesses.

JOHN LEIGH TAYLOR.
ROBERT RAMSDEN.

Witnesses:

H. B. BARLOW,
Manchester.
E. S. BARLOW,
Manchester.