

H. ASHWORTH. Spinning-Machines.

No. 139,755.

Patented June 10, 1873.

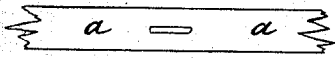


FIG. 1.

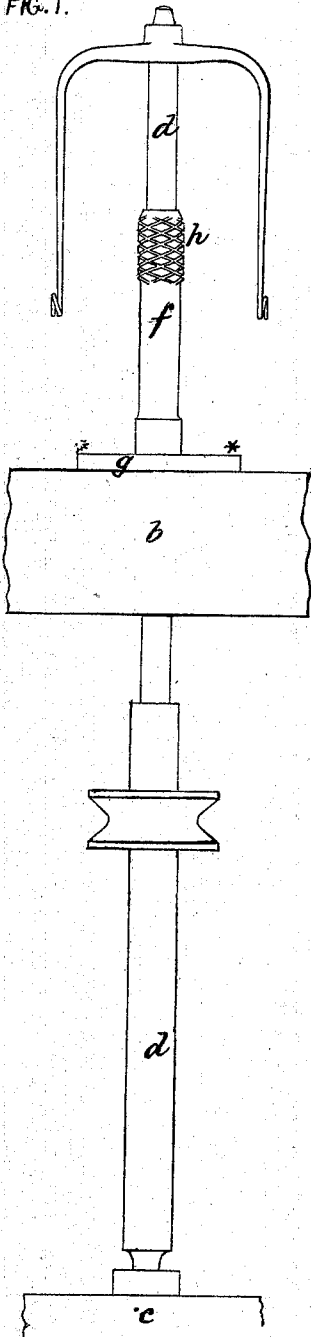


FIG. 2.

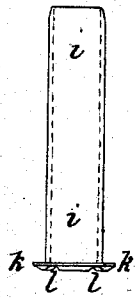


FIG. 2⁺

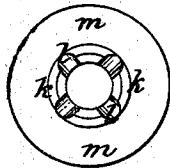


FIG. 4.

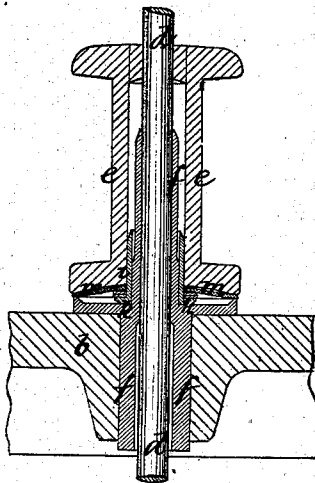
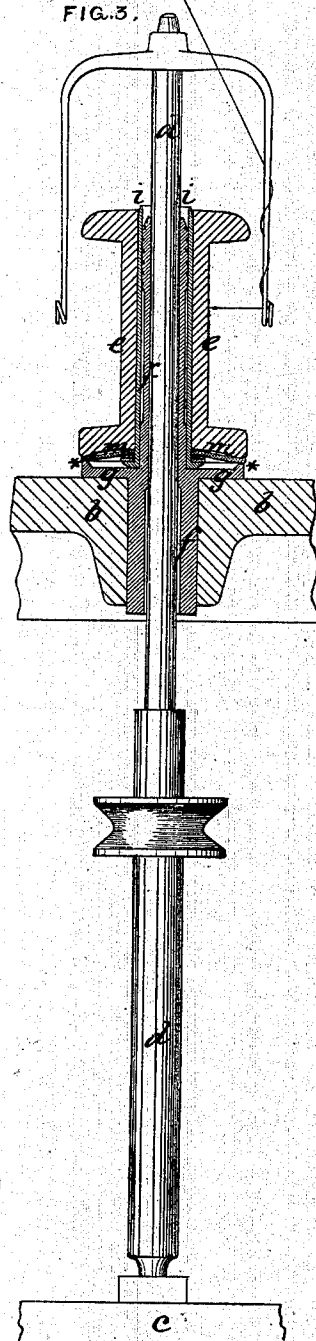


FIG. 3.



Witnessed { *George Davis*
John Hughes

Henry Ashworth

UNITED STATES PATENT OFFICE.

HENRY ASHWORTH, OF WALSDEN, ENGLAND.

IMPROVEMENT IN SPINNING-MACHINES.

Specification forming part of Letters Patent No. **139,755**, dated June 10, 1873; application filed October 26, 1872.

To all whom it may concern:

Be it known that I, HENRY ASHWORTH, of Walsden, in the county of Lancaster, Kingdom of Great Britain and Ireland, have invented Improvements in Apparatus for Spinning and Doubling Cotton and other Fibrous Substances, of which the following is a specification.

This invention relates to improvements upon a former invention, for which Letters Patent for Great Britain were granted to me, bearing date the 19th day of January, A. D. 1870, No. 165. I employ the ordinary throstle and doubling spindle with a fixed wharve, and with the flier screwed onto the top in the usual manner as in the former case. I also use the fixed and loose tubes as described in the specification of the Letters Patent before mentioned, but with the following alterations and improvements, which are designed with a view of allowing the drag upon the bobbin to be regulated at will, and also to accommodate itself to the variation in speed and in the tension of the thread produced by the increasing diameter of the bobbin, as the spinning or doubling proceeds.

Such being the nature and object of the said invention for improvements in apparatus for spinning and doubling cotton and other fibrous substances, I will now proceed to describe more in detail the manner in which the same is to be or may be performed or carried into practical effect; and in order to enable others skilled in the art to make and use the same, I have hereto annexed a sheet of drawings illustrative thereof, and have marked the same with figures and letters of reference corresponding with those in the following explanation thereof.

Figure 1 in the annexed drawing is an elevation of a throstle or doubling-spindle showing the fixed tube or bolster in its place. Fig. 2 is an elevation of the loose tube, and Fig. 2* is an underneath view of the same, showing also the cloth-washer. Fig. 3 is a sectional view showing the fixed and loose tubes and the cloth-washer in their respective places.

a a is the guide-rail, *b b* the lifting-rail, *c c*

the spindle-rail, *d d* the spindles, and *e e* the bobbin. The fixed tubes or bolsters *f f* carried by the lifting-rail, are provided, just above the level of the rail, with a circular flange or disk, *g g*, about the same diameter as the bottom of the bobbin, and having a raised rim, ****, all around the outer edge. Above this flange the tube is reduced in external diameter or formed with a long neck, so that the loose tube only bears at the top and bottom, and the top bearing is grooved spirally with both a right and a left hand thread crossing each other, as shown at *h h*, in order to retain the oil or lubricating matter.

This tube may be either the full length of the bobbin so that the latter does not touch the spindle at all, as shown at Figs. 1 and 3, or it may be shorter so that the upper part of the bobbin has a bearing on the spindle, as shown at Fig. 4. The lower end of the loose tube *i i* has a narrow flange, *k k*, and bears upon the center of the disk or flange of the fixed tube, notches *l l* being cut in the underneath part of the former to reduce the friction, as seen at Figs. 2 and 2*. The top of this smaller flange is about level with the outer rim of the larger flange, or slightly higher, and the feet or other washer, *m m*, which gives the drag rests upon the upper surface of both.

The bottom of the bobbin, which is dished or hollow, bears only on the outer rim with the washer *m m* intervening, no pin being required for driving the bobbin. As the central part of the washer is slightly higher than the outer edge upon which the bobbin rests, it follows that when the bobbin revolves at a high velocity the centrifugal force causes the outer edge of the washer to rise slightly and thus diminish the drag upon the raised rim of the fixed tube. On the contrary, when the speed of the bobbin is less, the weight of the bobbin increases the drag by pressing the outer edge of the washer *m m* down onto the rim ****. The drag may be still further reduced for spinning and doubling fine numbers by raising the central part of the washer by means of a small leather or other washer placed between it and the flange of the loose tube.

I claim—

The combination, with a rotating spindle and bobbin, of a flange, *g*, and a dished washer higher at the center than at the outer edge, on which the bobbin bears, and arranged so that by the action of centrifugal force it may approach a horizontal position, raising the bobbin, all as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY ASHWORTH.

Witnesses:

GEORGE DAVIS,
JOHN HUGHES.