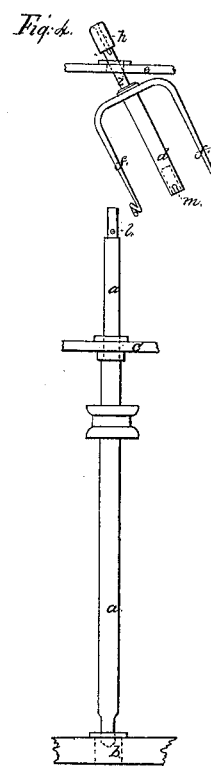
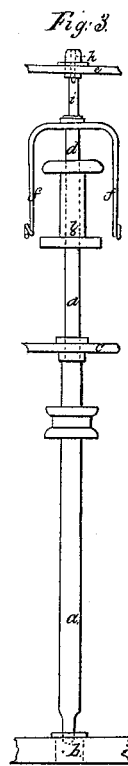
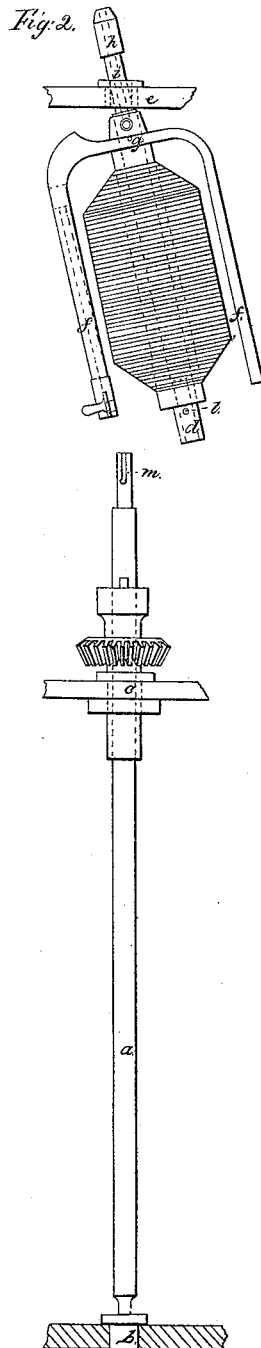
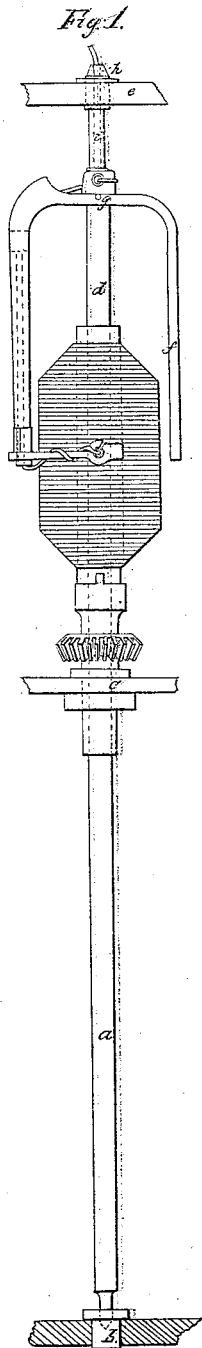


Mac Lardy & Lewis.
Spindle and Flyer.

N^o 6572.

Patented Jul. 3, 1849.



Witnesses.
John Davis.
John Cook.

Inventors.
William Mac Lardy.
Joseph Lewis.

UNITED STATES PATENT OFFICE.

WILLIAM MAC LARDY AND JOSEPH LEWIS, OF MANCHESTER, ENGLAND.

LIVE-SPINDLE AND FLIER.

Specification of Letters Patent No. 6,572, dated July 3, 1849.

To all whom it may concern:

Be it known that we, WILLIAM MAC LARDY and JOSEPH LEWIS, of Manchester, in the county of Lancaster, England, subjects of the Queen of Great Britain, have invented certain Improvements in Machinery or Apparatus Applicable to the Preparation and Spinning of Cotton, Wool, Silk, Flax, and Other Fibrous Substances; and we do hereby declare that the following is a full and exact description of our said invention—that is to say:

Our improvements in machinery of apparatus applicable to the preparation and spinning of cotton, wool, silk, flax, and other fibrous substances apply to those well known machines used in the preparation of cotton, &c., called "slubbing frames" and "roving frames" or "jack frames" and also to those machines used for spinning cotton &c., called "throstle frame" and to all other machinery used for twisting cotton, &c., whereon spindles are employed.

Our invention relates solely to the spindle and flier employed in such machinery, the principal objects of the same being to increase the productive powers of such machinery by so forming and arranging the spindles as to allow of their being driven at a much higher velocity than those hitherto in use.

Our improvements consist, firstly, in forming the spindle in two separate parts and connecting the two parts together by a joint or coupling so that they may revolve together as one solid spindle and admitting of the upper part being readily disconnected from the lower part when necessary; secondly, our improvements consist on fixing the flier permanently upon the upper part of the spindle; thirdly, in the employment of a rigid bearing at the top of the spindle above the flier (in connection with the spindle formed of two parts) in addition to the bearings usually employed and fourthly, in making that portion of the spindle between the top bearing and the flier of a smaller diameter than the part of the spindle forming the said top bearing so that when the upper part of the spindle is disconnected from the lower part and raised upward the upper portion of the said spindle can be held at such an angle as will admit of the full bobbin being taken off the spindle and replaced by an empty one.

The practical application of our invention

will be better understood by referring to the drawing accompanying these presents and the following explanation thereof.

The drawing is made half-size and is marked with figures and letters of reference corresponding with those in the description.

Figure 1 is an elevation of a "slubbing spindle" and flier in working position and Fig. 2 is a similar view with the upper part of the spindle disconnected and raised from the lower part showing the angle at which the upper part of the spindle may be held while doffing the full bobbin and Figs. 3 and 4 are similar views of a "throstle spindle."

The lower part *a* of the spindle is supported by the foot rail *b* and bolster or coping rail *c*. The upper part *d*, of the same being supported by the rigid bearing *e*, fixed to the roller beam of the machine. The upper and lower parts of the spindle may be connected as shown in the drawing by a slip socket joint, one part fitting in the other with a pin (*l*) on one either a groove *m* in the other or by means of a left hand screw or in any other convenient manner which will admit of the lower part driving the upper and of their being easily disconnected. The flier *f*, is fixed permanently upon the upper part *d*, of the spindle by means of the pin *g*, or otherwise.

It will be seen that between the top part *h*, of the spindle which forms the upper bearing and the flier *f*, the diameter of the spindle is reduced so as to form a neck *i* of smaller diameter than the part *h*, which when raised allows of the upper part of the spindle being held at an angle whilst doffing as shown in Figs. 2 and 4. It will also be seen that the upper part of the spindle above the flier is formed tubular for the passage of the cotton &c.

Having now described the nature and object of our said improvements together with the method of carrying the same into practical effect we would remark in conclusion that we are aware that a top bearing for spindles has been used although not in the manner or combination in which we employ it, we do not therefore claim the use or employment of a top bearing except for spindles formed or constructed as above described but

We do claim as our invention

The construction and application (to the preparation and spinning of cotton &c.)

of a live spindle formed in two parts as
above described and having the flier per-
manently fixed to the upper part thereof.
The upper part of the said spindle being
5 supported in a fixed bearing and so con-
structed and arranged as to allow it (when
disconnected from the lower part and raised)

to be held at an angle while doffing the full
bobbin, substantially as described.

WILLIAM MAC LARDY.

JOSEPH LEWIS.

Witnesses:

JOHN DAVIES,

JOHN COOP.