(No Model.)

T. GORMAN.

SUPPORT FOR SPINNING SPINDLES.

No. 543,623. Patented July 30, 1895.

Fig. 1.

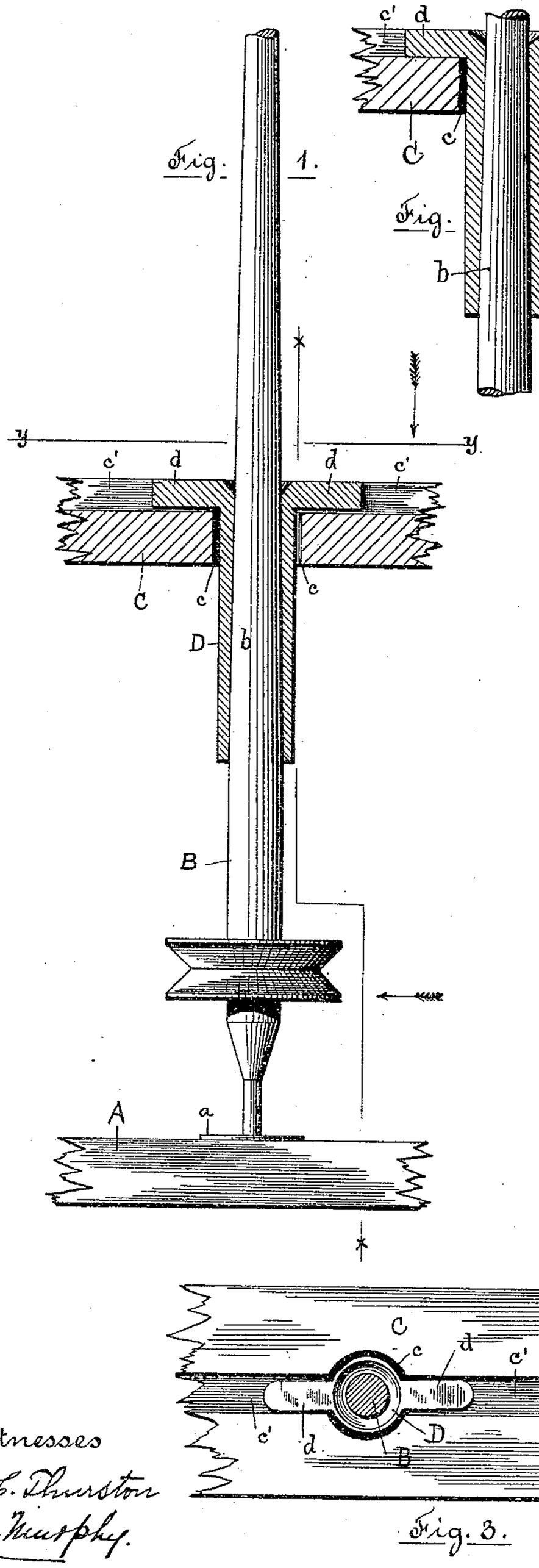

Fig. 4.

Fig. 2.

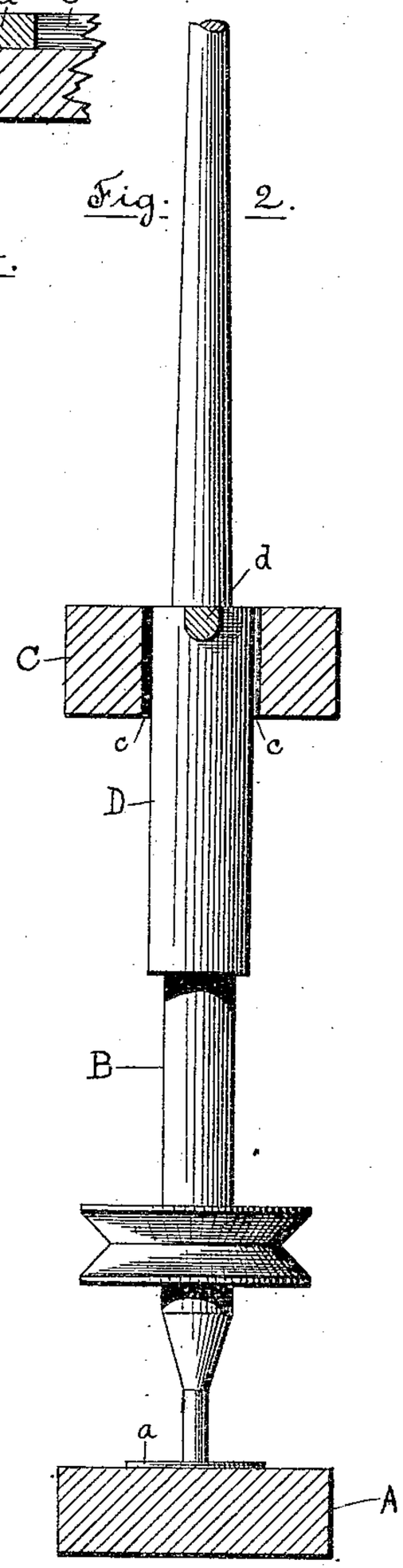

Fig. 3.

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SUPPORT FOR SPINNING-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 543,623, dated July 30, 1895.

Application filed March 26, 1891. Renewed March 28, 1895. Serial No. 543,590. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GORMAN, of Warren, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Supports for Spinning-Spindles; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

My invention relates to the manner of supporting the spindles of a spinning-machine, and more particularly to the manner of mounting the bolster in the bolster-rail.

The primary object of the invention is to give to the bolster freedom of movement in various directions, so as to enable said bolster and the spindle supported therein to accommodate themselves to all the varying conditions to which they may be subjected, whereby the spindle may be run at a high rate of speed without chattering.

A further object of the invention is to secure the self-adjustment of the bolster with relation to its spindle, whereby a close-running fit between the spindle and its bolster will be automatically maintained.

To these ends the invention consists in the combinations and arrangements of parts hereinafter described.

Referring to the drawings, Figure 1 is a front view, partly in section, of a spindle and portions of the step and bolster-rails of a spinning-machine. Fig. 2 is a section on the line *x x* of Fig. 1. Fig. 3 is a plan view of a portion of the bolster-rail, taken on the line *y y* of Fig. 1; and Fig. 4 is a modification of Fig. 3 and showing the bolster supported vertically by the bolster-rail.

A represents the step-rail, having steps *a* of ordinary construction.

B is a tapering spindle.

C is the bolster-rail, which is provided with holes or openings *c* to receive the bolsters for the spindles.

D represents the bolster, which, as shown in the drawings, is provided with a tapering bore corresponding with the tapered portion *b* of the spindle B. The hole *c* in the bolster-rail is made of somewhat larger diameter than the external diameter of the bolster D, as shown in the drawings, and so that said bolster may be free to move laterally in the bolster-rail. The upper end of the bolster D is, like the remainder of the bolster, of circular shape, but is provided with one or more lugs or projections *d*, which lugs, when the bolster is inserted in the bolster-rail, loosely enter a recess or groove *c'*, formed in the upper surface of the bolster-rail to receive said lugs, as shown in the drawings, and thereby prevent the bolster from rotating with the spindle. These lugs may, if desired, rest upon the bottom of the groove *c'* and the bolster D be thus supported vertically, as shown in Fig. 4. If it is desired, however, to have the bolster self-adjusting vertically to compensate for wear and to maintain a close-running fit between the spindle and bolster, the groove *c'* in the bolster-rail is cut somewhat deeper and so that the lugs *d* will not rest upon the bottom of the groove, the bolster being then supported vertically by the tapering portion *b* of the spindle, as shown in Fig. 1.

When it is intended to have the bolster D supported vertically by the lugs *d*, resting upon the bottom of the groove in the bolster-rail, it is preferred, in order to enable the bolster to swing easily within certain limits in the manner of a pendulum, to round the under side of each lug, so as to give to it more or less of a U form, as shown in the drawings. Cutting away the under side of each lug, so as to give it more or less of a V shape, which is an obvious equivalent, will serve the same purpose.

By the construction and arrangement of bolster and bolster-rail above described it will be seen that the bolster is free to move in various directions with relation to the bolster-rail. Thus the bolster is arranged loosely within the bolster-rail, so as to have a certain amount of lateral play therein. Again, the bolster is free to rise with relation to the rail. Again, the bolster, when supported vertically by the rail, is supported at or near its upper end and is thus suspended, so as to be capable of swinging, within certain limits, in the manner of a pendulum, such swinging movement being facilitated by the rounding or cutting away of the under side of the supporting-lugs. Again, the bol-

ster, while prevented from rotating with the spindle, is free to turn to some extent in the bolster-rail by reason of the fact that the projecting lugs are loosely arranged in the groove which receives them, such turning of the bolster being facilitated by the circular shape of the bolster at its upper end, and the construction of the parts is such that all danger of the bolster becoming cramped in the rail is avoided. As a result of the freedom of movement thus given to the bolster, said bolster and its spindle are thereby enabled to readily and quickly accommodate themselves to all the varying conditions to which they may be subjected, and said spindle may be run at a high rate of speed smoothly and without chattering, and especially so when the spindle is made to fit the bolster with a close-running fit. Furthermore, by employing a bolster with a tapering bore in combination with a correspondingly-tapered spindle and by so mounting the bolster in the rail that said bolster is not supported vertically by said rail the bolster will be self-adjusting, and in case of wear will serve to automatically maintain a close-running fit between the spindle and bolster.

The manner of combining the bolster with the bolster-rail above described not only leaves the bolster free to rise with relation to the rail in the operation of spinning but also permits the bolster to be readily inserted in and removed from the bolster-rail at any time, and likewise permits the spindle with its bolster to be readily raised out of its step for cleaning or any other purpose.

I do not wish to limit the main feature of my invention to a tapering spindle and a bolster having a correspondingly-tapered bore, since it is evident that the same may be likewise employed with a straight spindle and a bolster having a straight bore.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail and prevent said bolster from rotating in said rail, substantially as described.

2. The combination of a bolster rail having a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail so as to have lateral play therein, and so as to be free to rise with relation to said rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail, whereby said bolster will be prevented from rotating in said rail, but will be free to rise with relation to said rail, substantially as described.

3. The combination of a bolster rail provided with a groove or recess in its upper surface, and a bolster arranged loosely within said bolster rail, said bolster being provided at or near its upper end with one or more lugs or projections adapted to enter the groove in the bolster rail, said lugs being rounded or cut away on their under side, substantially as described.

4. The combination with a tapering spindle and a bolster rail, of a bolster provided with a tapering bore to fit said tapering spindle, said bolster being loosely arranged in the bolster rail and unsupported vertically by said bolster rail, and means for preventing the rotation of said bolster, whereby said bolster will be self-adjusting to secure and maintain a close running fit between said bolster and spindle, substantially as described.

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