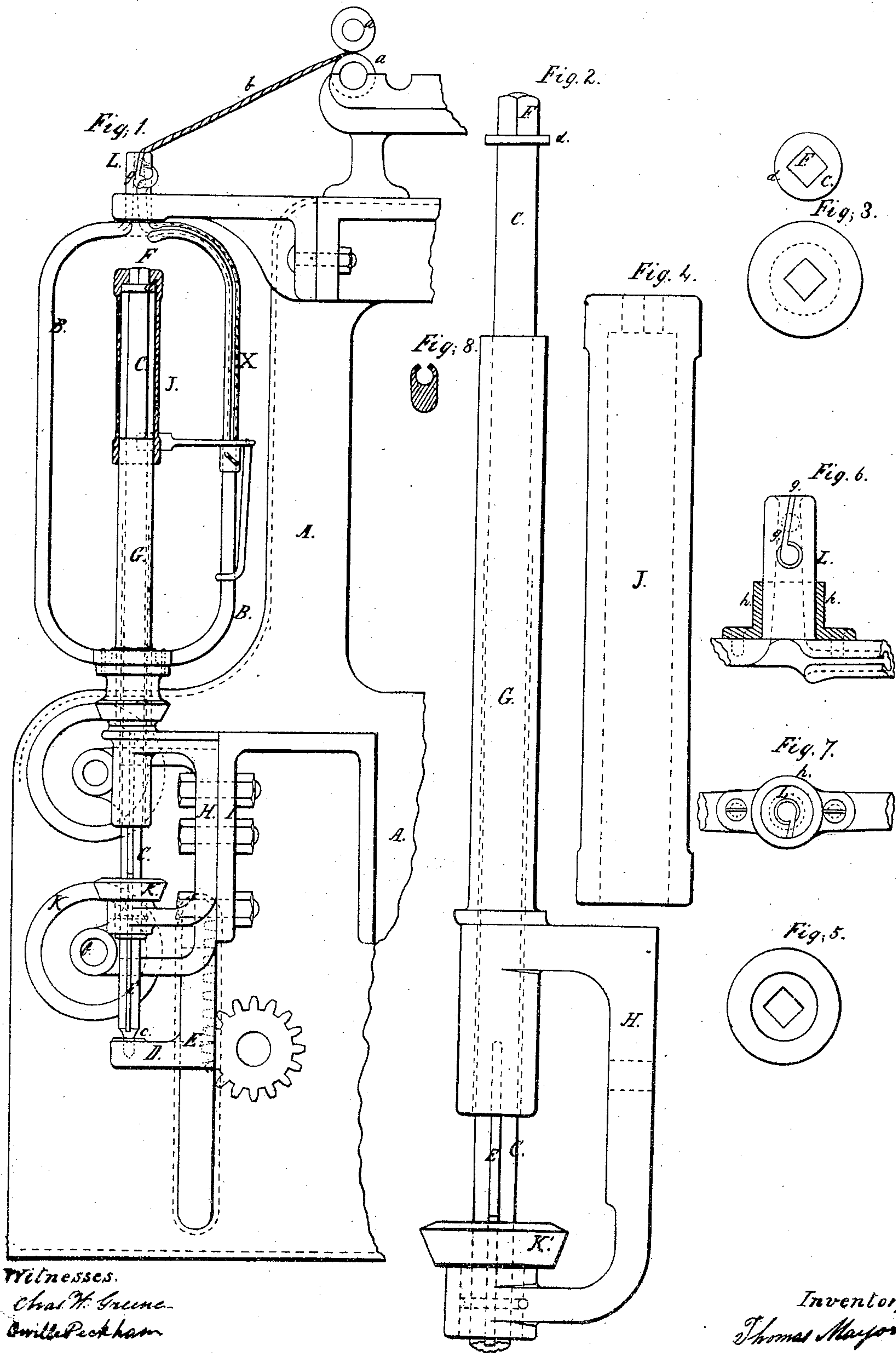


*T. Mayor*  
*Speeder for Spinning &c.*

*N<sup>o</sup> 72859.*

*Patented Jul. 20. 1869.*



*Witnesses.*  
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# United States Patent Office.

THOMAS MAYOR, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO ORVILLE PECKHAM, TRUSTEE; AND SAID TRUSTEE ASSIGNS TO SAID MAYOR AND GEORGE CHATTERTON, OF SAME PLACE.

Letters Patent No. 92,859, dated July 20, 1860

## IMPROVEMENT IN SPEEDERS FOR SPINNING AND TWISTING ROVING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS MAYOR, of the city and county of Providence, in the State of Rhode Island, have invented a certain new and useful Improvement in Speeders for Spinning and Twisting Roving; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is an end view of a portion of the machine.

Figure 2 is a view of one of the spindles and its bolster.

Figures 3, 4, and 5, are views of the peculiar bobbin employed.

Figures 6, 7, and 8, are sectional views of the flier.

The first part of my invention relates to a new construction of the spindle and means of driving and steadying the bobbin, whereby I am enabled to reduce the length of the spindle and its extent of traverse; and, at the same time, to so combine the bobbin with its spindle and bolster, that perfect steadiness of movement is secured for the bobbin at all positions of the lifting-rail.

Incidental to these improvements, other important advantages result in reference to the arrangement of the machine, which will be hereafter stated.

A, fig. 1, represents a portion of the frame.

*a a* are feeding-rollers, delivering the roving *b* to the flier B.

The spindle is shown at C, and upon a larger scale at fig. 2.

It is stepped at *c*, fig. 1, in a foot-rest, D, projecting from the lifting-rail E, which rail, it is to be supposed, is made to traverse by any suitable mechanism in some one of the ways in use.

The spindle is peculiar in its construction, in this: its upper end is furnished with a square, F, and flange, *d*, in order to furnish a means for driving the bobbin, by the application of the driving-power to its upper instead of to its lower end. It is not essential that this precise form should be given to the end of the spindle, and any mechanical construction which will effect the driving of the bobbin at this point, will enable the invention, which results from such application of the driving-power, to be employed.

The spindle is mounted in a long stationary bolster or tube, G, which may be cast in one piece with the yoke H, which latter is firmly bolted, as seen in fig. 1, to a girt, I, running from end to end of the frame.

The bobbin J is of the usual length, but its axis is bored out, so as to fit the bolster, but its head is closed, all but a square opening, into which the squared end of the spindle fits.

When the bobbin is placed upon the spindle, its

head will rest upon the flange *d*, and be supported by it, while its lower end, (the bobbin being longer than the length of the spindle above the bolster,) will take a bearing against the outside of the bolster, as seen at fig. 1, and therefore encase both the spindle and the end of the bolster.

The necessary result of this method of driving the bobbin and combining it with the bolster, is to insure almost perfect steadiness of movement to the bobbin, notwithstanding that it is made to traverse to the extent of its length, past the end of the flier-arm, by the movement of the lifting-rail, there being, at all times, a bearing for it at both of its ends.

As an incident, too, of this manner of constructing the bobbin, nearly all dust and particles of cotton are excluded from entering the bolster, in consequence of the protection which the bobbin affords.

The spindle is driven by the bevel-gear K, which engages with the bevel-gear *k*, connected with the spindle by means of the long feather *e*, fitted to slide through the hub *k*, as the spindle is lifted and lowered by the traverse-rail E.

This arrangement for giving motion to the spindle, enables the driving-gear K to be mounted upon a shaft, *f*, fig. 1, extending from end to end of the frame, and elevated above the foot-bearing of the spindles, and in front of such spindles.

It will be observed that the yoke H, to which the long bolster G is attached, is formed, at its lower extremity, into a bearing for the spindle, between the long bolster G and the step-rail D. (See fig. 1.)

This intermediate bearing affords a rest for the bevel-gear K', and is in place of the rail sometimes used.

The gear K' is, by this arrangement, enabled to be placed with its bevel-face downwards, and the fellow bevel-gear K can thereby be located nearer the floor than would be practicable were a rail employed. Consequently, the height of the machine, by this change in the customary location and arrangement of the driving-gear, is materially reduced, and the usual raised platform, for the operator to stand upon to reach the bobbin, is dispensed with.

Moreover, this arrangement of the driving-gear greatly simplifies the structure of the machine.

It is easily accessible, not readily deranged, and is peculiarly adapted to a machine employing a double row of spindles.

Another improvement relates to the construction of the flier.

The neck L of the flier is constructed with the usual axial hole, and also with two lateral orifices, one above the other, in opposite sides of the neck, leading into the axial hole, as described in the Letters Patent granted to me, March 21, 1865.

The additional improvement consists in connecting



the axial hole, through the neck of the flier, with the lower one of the two orifices, through the side of the neck, by a slit, *g*.

The object of this is not only to make it more convenient for the operator to piece up broken ends either from above or from below, but also to furnish a device for breaking the yarn, in case the roving has not been properly conducted to the flier, by being entered into the axial hole, then led through the uppermost of the two lateral orifices, and then wound partially around the outside of the neck, and entered into the lower orifice, as it should be, in order to insure its being properly twisted. So long as the roving is conducted to the flier in this path, the slit *g* will not produce any effect, but if, by neglect, the roving has not been put through both holes, as described, it will work into the slit, and be instantly broken.

I have found it advisable to surround the neck of the flier, at the upper bearing, with a collar or bushing, *h*, which may be of cast-iron, mineral, glass, or other suitable material, and which is made removable from the flier, so that it can readily be replaced when it has become worn.

The machine hereinbefore described can be constructed, without radical alteration, to work either as a speeder or as a flier-frame, and speeders of the old forms in use, can be readily changed, so as to employ the means of driving the bobbin, and the arrangement to insure its steadiness of movement above described.

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

1. The method, substantially as herein specified, of driving and steadying a bobbin, by combining the bobbin *J* with the driving-spindle *C* and the stationary bolster *G*, so that while the bobbin is driven by the former, it shall, in all positions, be steadied by the latter, as herein set forth and described.

2. In combination with the neck *L* of the flier, where such neck is constructed with two lateral orifices, for the passage of the roving, as described, the employment of a slit, *g*, connecting the axial hole in the neck of the flier with the lower one of such lateral orifices, as herein described, for the purpose of breaking the yarn, whenever the roving has not been properly led to the flier.

3. The arrangement, with reference to the long bolster *G* and step-rail *D*, of an intermediate spindle-bearing, attached to the same yoke or frame which supports the bolster *G* for the purpose of furnishing a rest for the bevel driving-gear *K'*, and, also, the arrangement of the fellow bevel-gear *K* with such driving-gear *K'* and intermediate bearing, substantially as shown, whereby the height of the machine and the length of the spindle are enabled to be reduced, as herein set forth.

THOMAS MAYOR.

Witnesses:

CHARLES W. GREENE,  
ORVILLE PECKHAM.