No. 675,934. Patented June 11, 1901.

J. W. COLLINS.

SPINDLE HOLDER FOR SPINNING AND TWISTING MACHINES.

(Application filed July 14, 1900.)

(No Model.)

Fig. 1.

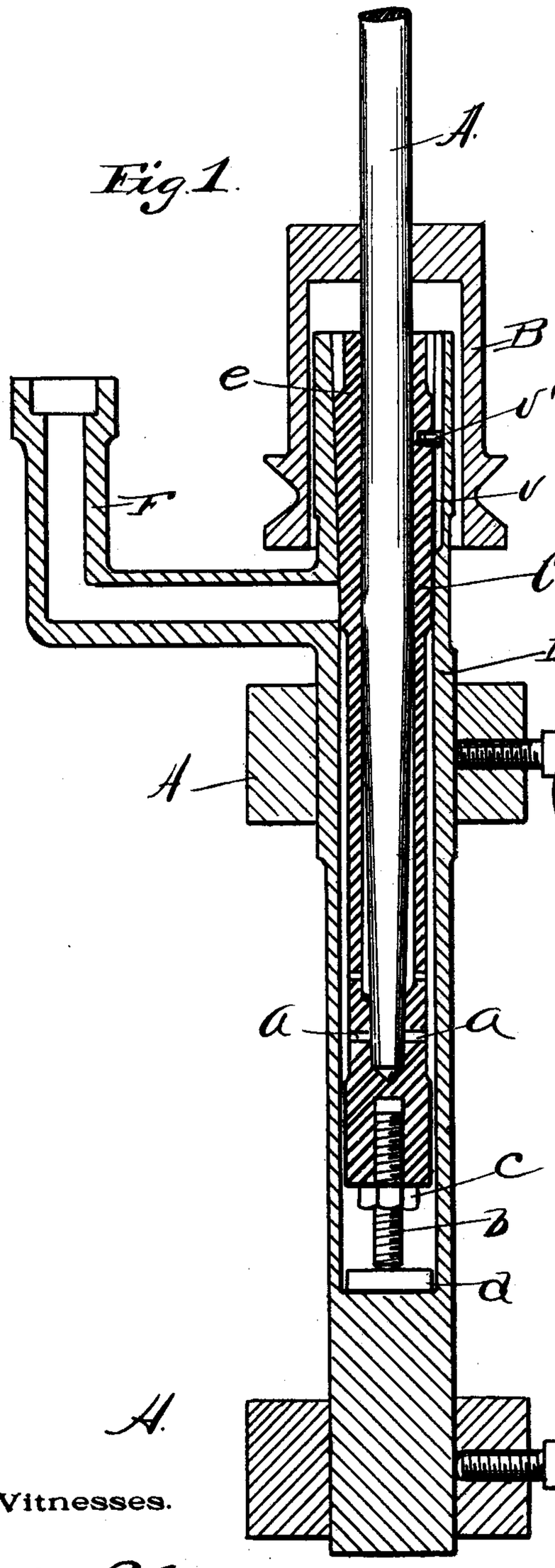


Fig. 3.

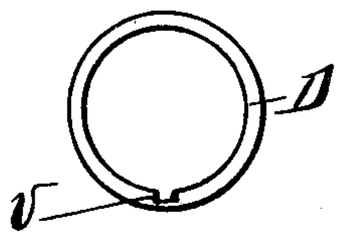


Fig. 5.

Fig. 2.

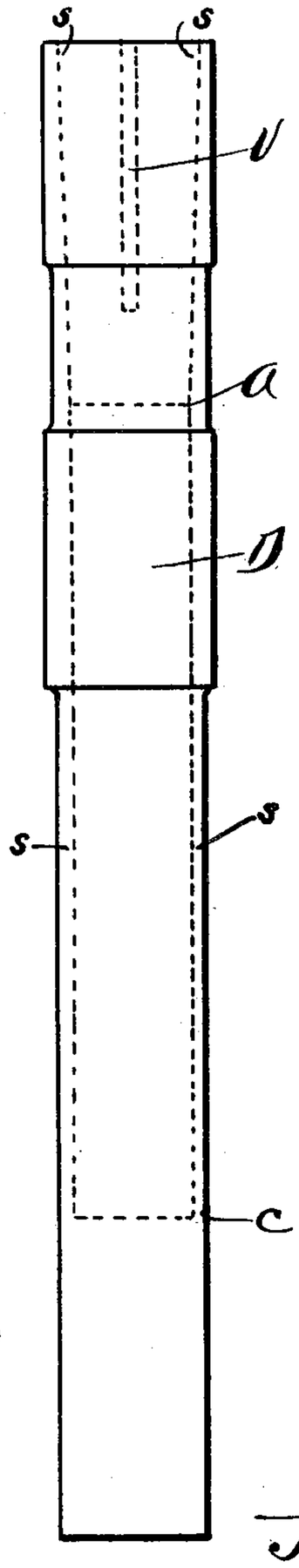
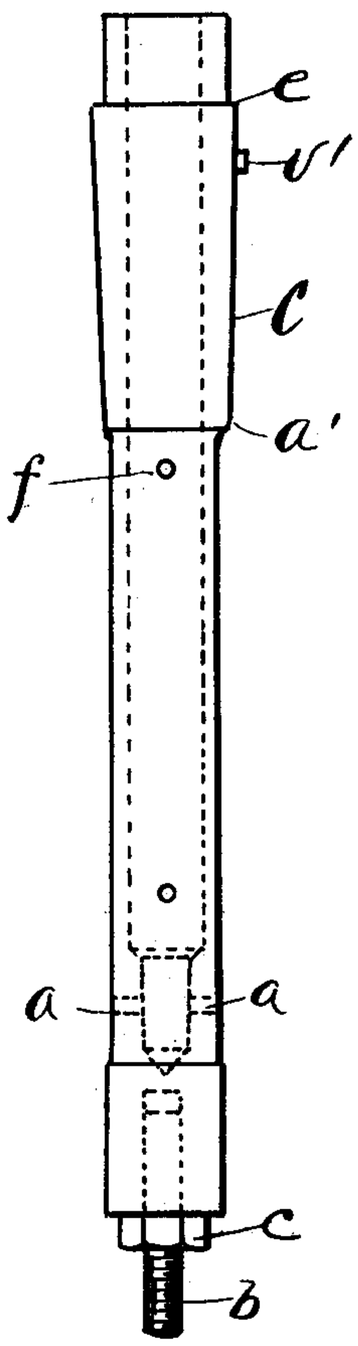


Fig. 4.



Witnesses.

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JOSEPH W. COLLINS, OF PAWTUCKET, RHODE ISLAND.

SPINDLE-HOLDER FOR SPINNING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 675,934, dated June 11, 1901.

Application filed July 14, 1900. Serial No. 23,643. (No model)

To all whom it may concern:

Be it known that I, JOSEPH W. COLLINS, a resident of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Spindle-Holders for Spinning and Twisting Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the mechanism devised for the purpose of holding spindles in spinning and twisting machines. It is fully explained and illustrated in this specification and the annexed drawings.

Figure 1 shows a vertical section taken down through the center of the bolster-socket and bolster with a portion of the spindle in elevation. Fig. 2 is a front elevation of the bolster-socket. Fig. 3 is a top view of the bolster-socket seen in Fig. 2. Fig. 4 represents the bolster in elevation. Fig. 5 is a top view of the bolster seen in Fig. 4.

The object of the invention is to furnish means for regulating the amount of lateral motion that a bolster may be allowed to have.

The socket D (shown separately in Fig. 2) is a cylindrical casting first bored out to a uniform size from its upper end down to the point *c* and then reamed out with a slightly-tapering tool from the upper end down to the point *a*, making a hole in it, as shown by the dotted lines *s s* in Fig. 2, slightly tapering from its upper end to the point *a* and of a uniform size from *a* to the point *c*. The bolster C (shown separately in Fig. 4) is also a cylindrical bar of metal turned down a little smaller from its upper end to the shoulder *e*, and from the shoulder *e* to the point *a'* it is turned to a size and taper to fit in the tapering hole in the socket D, from the point *a* upward, so that when the bolster C is put into the socket D, as shown in section in Fig. 1, the bolster will go in far enough for the point *a'* on the bolster to reach the point *a* in the socket. From the place *a* down to a place about opposite the end of the spindle A the bolster C is turned down to a less diameter than the remaining portion of it that engages the lower portion of the socket-bore, and this bearing portion of the bolster is preferably made of a slightly less diameter than the engaging portion of the socket-bore in order to permit a small amount of transverse or lateral movement of the bolster; but if the bolster is allowed to descend in the socket as far as the taper will allow it to do, it will be held too rigidly and will not be allowed to accommodate itself to the motion of the spindle. Therefore I put a small screw-rod *b* in the lower end of the bolster, and a check-nut *c* is put on the rod *b* to screw up against the end of the bolster and prevent the rod from turning in or out of the bolster except when being adjusted. The lower end of the rod *b* rests on a steel washer *d* at the bottom of the hole in the socket D, and by turning the rod *b* farther into the bolster C or out the bolster may be let down or raised, so that there will be less or more freedom of motion between the taper portion of the bolster and the taper portion of the hole in the socket D. Since the free extremity of the rod *b* bears on a flat hardened surface, it will have a free transverse movement limited only by the engagement of the lower cylindrical portion of the bolster with the adjacent wall of the socket-bore, and the rod being rigidly secured to the bolster by the jam-nut this lateral movement can in no wise affect the axial adjustment of the bolster in its socket. A pin *v'* is inserted in one side of the bolster C, and a groove *v* is made in one side of the socket to receive the pin and prevent the bolster from turning in the socket. The socket D is held in the two rails H H by means of the set-screw *h h*, and the height of the spindle in the machine can be regulated by easing these set-screws and raising or lowering the socket in the rails. The socket is provided with the usual feed-tube F, and a cap B, with a whirl of the common form, is shown in section in Fig. 1 attached to the spindle A. The bolster C is bored out to receive the spindle A and has two holes *a a* near its lower end and a hole *f* just above its middle to allow the oil to pass through to the spindle inside.

Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

1. In a spindle-holder, a socket, a bolster arranged in the socket, means for providing a greater or less transverse movement of the bolster in the socket by the axial adjustment of the bolster in relation to the socket, in combination with means on the bolster for effecting said axial adjustment, said means having a free transverse movement.

2. In a spindle-holder, a socket, a bolster arranged in the socket, means for providing a greater or less transverse movement of the bolster in the socket by the axial adjustment of the bolster in relation to the socket, in combination with an axially-adjustable step-bearing on the lower end of said bolster that has a free transverse movement.

3. In a spindle-holder, a socket, a bolster arranged in the socket, means for providing a greater or less transverse movement of the bolster in the socket by the axial adjustment of the bolster in relation to the socket, in combination with a step-bearing comprising said bolster having a threaded aperture in its lower end, a threaded rod engaging said threads, means for locking said rod in its positions of adjustment, and a bearing for said rod permitting free transverse movement of the same.

4. In a spindle-holder, a socket, a bolster arranged in the socket, means for providing a greater or less transverse movement of the bolster in the socket by the axial adjustment of the bolster in relation to the socket, in combination with a step-bearing comprising said bolster having a threaded aperture in its lower end, a threaded rod engaging said threads, a jam-nut on said rod engaging the end of the bolster, and an end bearing for said rod permitting free transverse movement of the same.

5. In a spindle-holder, a bolster having an enlarged cylindrical portion at its lower part and having an enlarged conical portion at its upper part, a socket having a bore that is cylindrical at its lower portion and of slightly-less diameter than said lower portion of the bolster and which bore is conical at its upper part corresponding to the said conical portion of the bolster, in combination with means on said bolster for effecting its axial adjustment, said latter means having a free transverse movement.

6. In a spindle-holder, a bolster having an enlarged cylindrical portion at its lower part and having an enlarged conical portion at its upper part, a socket having a bore that is cylindrical at its lower portion and of slightly-less diameter than said lower portion of the bolster and which bore is conical at its upper part corresponding to the said conical portion of the bolster, in combination with an axially-adjustable step-bearing on the lower end of said bolster having a free transverse movement.

7. In a spindle-holder, a bolster having an enlarged cylindrical portion at its lower part and having an enlarged conical portion at its upper part, a socket having a bore that is cylindrical at its lower portion and of slightly-less diameter than said lower portion of the bolster and which bore is conical at its upper part corresponding to the said conical portion of the bolster, in combination with a step-bearing comprising a bolster having a threaded aperture at its lower end, a threaded rod engaging said threads, a jam-nut on said rod engaging the end of the bolster, and an end bearing for said rod permitting a free transverse movement of the same.

8. In a spindle-holder, a bolster having an enlarged cylindrical portion at its lower part and having an enlarged conical portion at its upper part, a socket having a bore that is cylindrical at its lower portion and of slightly-less diameter than said lower portion of the bolster and which bore is conical at its upper part corresponding to the said conical portion of the bolster, in combination with a step-bearing comprising a bolster having a threaded aperture at its lower end, a threaded rod engaging said threads, means for locking said rod in its positions of adjustment, and an end bearing for said rod permitting a free transverse movement of the same.

In testimony whereof I have hereunto set my hand this 7th day of July, A. D. 1900.

JOSEPH W. COLLINS.

In presence of—
BENJ. ARNOLD,
E. S. MARSH.