

(No Model.)

J. WARRENER.
BOBBIN SPINDLE OR SKEWER.

No. 414,930.

Patented Nov. 12, 1889.

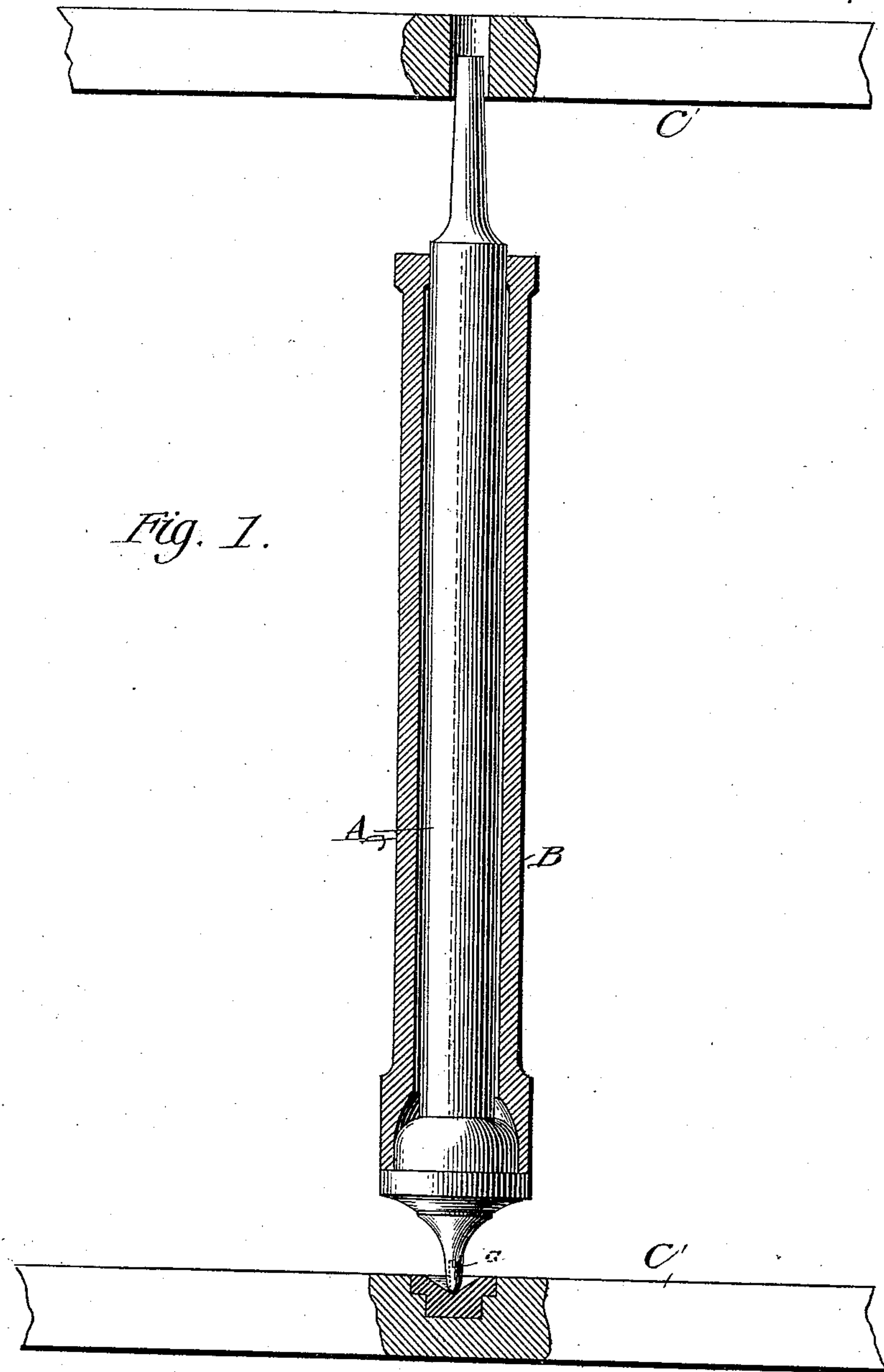


Fig. 1.

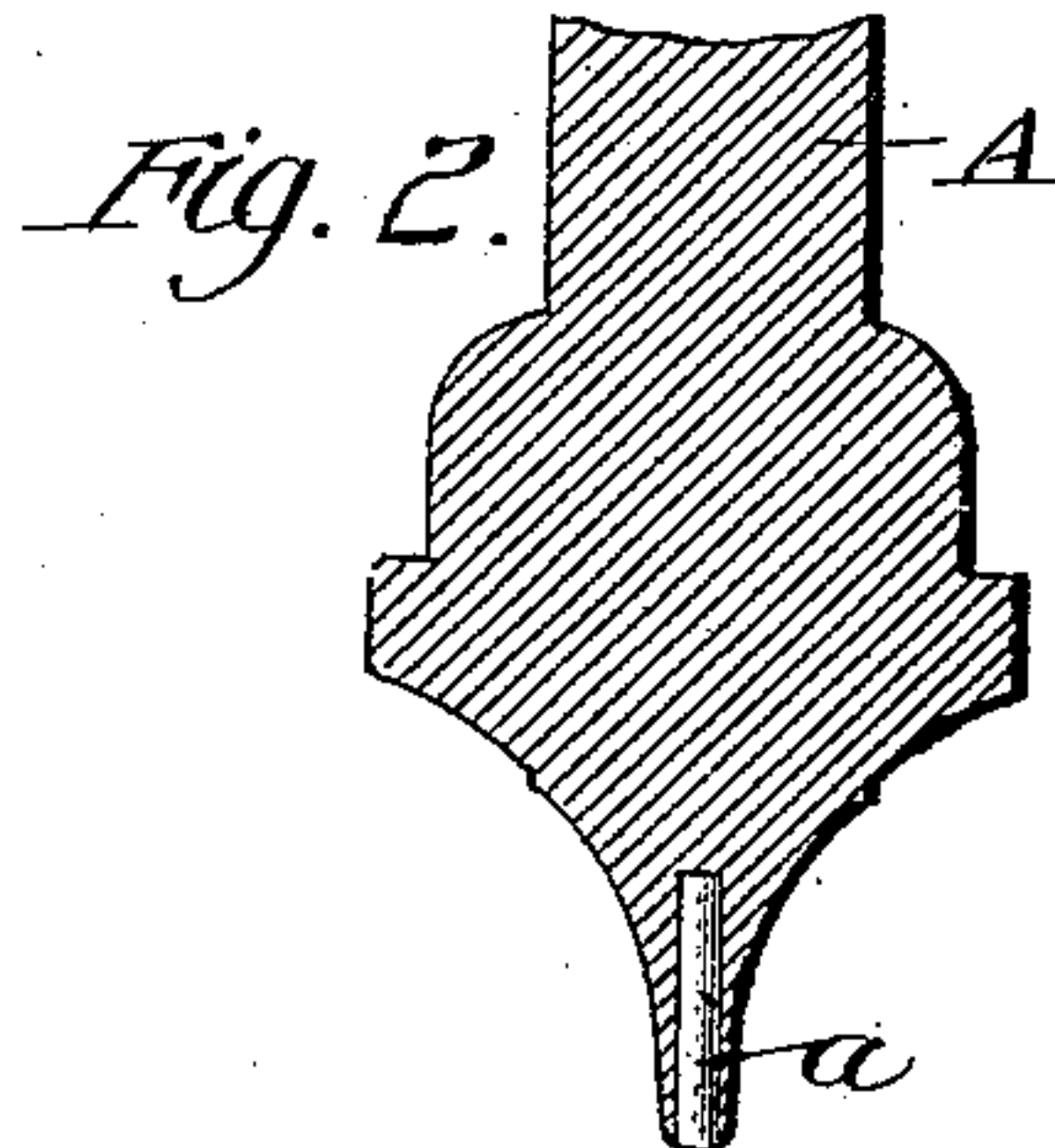


Fig. 2.

WITNESSES:

J. H. Clark
C. Sedgwick

INVENTOR:

J. Warren
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES WARRENER, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ALEXANDER M. FRASER, OF SAME PLACE.

BOBBIN SPINDLE OR SKEWER.

SPECIFICATION forming part of Letters Patent No. 414,930, dated November 12, 1889.

Application filed April 1, 1889. Serial No. 305,548. (No model.)

To all whom it may concern:

Be it known that I, JAMES WARRENER, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Bobbin Spindles or Skewers, of which the following is a full, clear, and exact description.

My invention relates to bobbin spindles or skewers; and the object of my invention is to lessen the amount of friction within the lower creel, as compared with those in common use, and also to maintain at all times a sufficient and uniform tension.

Previous to my present invention the creel-bearings of bobbin spindles or skewers have commonly been entirely of wood, and have consequently been easily damaged and liable to rapid wear and distortion, all of which causes the spindles to run hard in the creel, and thus makes the tension irregular or too strong, and in the latter event frequently stretches and breaks the rovings too much and even pulls the rovings apart. I have myself considerably lessened these defects by providing creel-bearings of metal and wood, as explained in Letters Patent No. 257,419, granted to me May 2, 1882; but further study and experiment have led me to discover a means for completely avoiding all defects in the creel-bearings, such being the present invention, which I will now proceed to describe.

My invention consists in a spindle or skewer tipped with glass at its lower end or point in such manner that the tip or point will protrude slightly from or be flush with the lower end of the skewer or spindle, thereby forming a bearing of glass and wood, as hereinafter more particularly explained.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference designate like parts, and in which also—

Figure 1 illustrates the skewer as in position in the creel, the bobbin being shown in section and a portion of the skewer and creel-rails being broken away to more clearly

show the invention. Fig. 2 is a sectional view of the lower end or tip of the skewer.

In the said drawings, B designates the bobbin; C, the upper, and C' the lower, creel-rail, all of said parts being of the usual construction.

A designates the skewer, which is provided at its lower end or bearing with the glass tip *a*. This tip *a* is preferably of elongated cylindrical form, and is forced into a socket formed longitudinally of the spindle at its lower end and opening at the bearing-point of the spindle. The glass tip may be flush with or protrude slightly beyond the extremity of the spindle, and by virtue of this construction the friction of the skewer is reduced to the lowest possible degree. The glass tip also not only thus reduces the friction in the creel to a minimum, but the skewer or spindle is prevented from running too freely in the creel by reason of the contact of the creel-rail, socket, or step and of the wood of the spindle or skewer.

Thus it will be seen that perfect and uniform tension is insured, so that all possibility of injury to the roving is avoided. It will also be seen that the tip is inexpensive and may be readily applied to both old and new spindles, and that it greatly increases their durability.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A bobbin skewer or spindle having its bearing-point composed partly of wood and partly of glass, substantially as and for the purposes described.

2. The skewer A, provided at its lower end with a socket, and the glass tip *a* in said socket, substantially as and for the purposes set forth.

JAMES WARRENER.

Witnesses:

THOMAS ASHTON,
DENNIS COFFEY.