

(No Model.)

F. F. ELLIS.

ADJUSTABLE SPOOL SPINDLE FOR WINDING MACHINES.

No. 362,731.

Patented May 10, 1887.

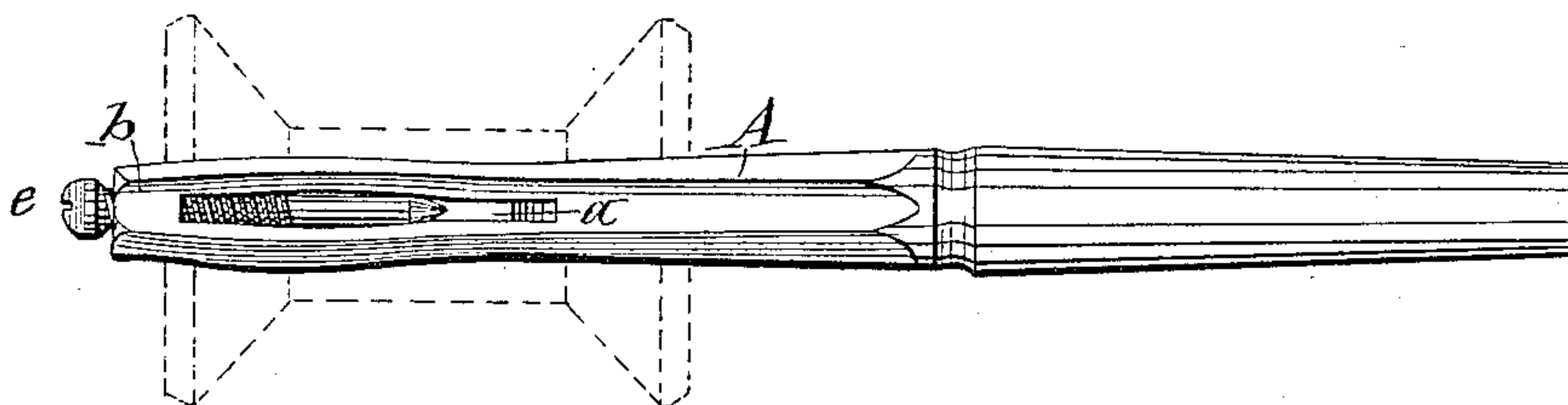


Fig. 1

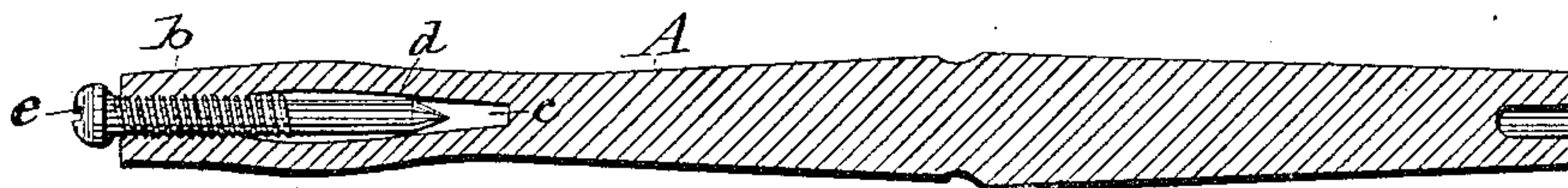


Fig. 3

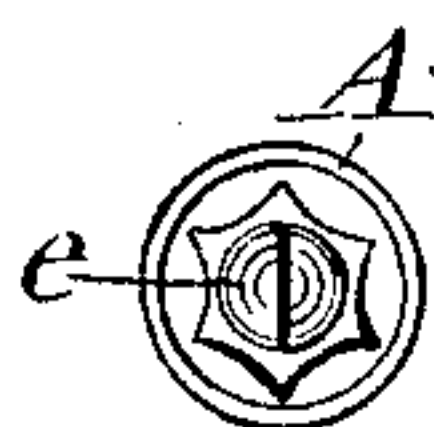


Fig. 2

WITNESSES:

A. F. Walz,
C. Bendixon

INVENTOR:

Ferrand F. Ellis
BY

Shull, Laass & Shull
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FERRAND F. ELLIS, OF COMMUNITY, NEW YORK, ASSIGNOR TO THE ONEIDA COMMUNITY, (LIMITED,) OF SAME PLACE.

ADJUSTABLE SPOOL-SPINDLE FOR WINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 362,731, dated May 10, 1887.

Application filed December 9, 1886. Serial No. 221,096. (No model.)

To all whom it may concern:

Be it known that I, FERRAND F. ELLIS, of Community, in the county of Madison, in the State of New York, have invented new and useful Improvements in Adjustable Spool-Spindles for Winding-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to spindles employed for holding and revolving spools during the process of winding the thread thereon. Said spindles enter the bores of the spools upon which the thread is to be wound, and in order to wind the thread uniformly and evenly on the spool it is essential that the latter should be sustained axially true on the spindle and revolve steadily and without vibration or deviation from the axial line of the spindle. To facilitate the application of the spool to the spindle, the latter is usually slightly tapered, and since the bore of the spool is of uniform size throughout its length, the spool is deprived of a proper support at the free end of the spindle, and is thus liable to vibrate and cause the thread to be wound unevenly thereon. To guard against this it is customary to force the spool tightly onto the spindle, and frequently they have to be driven on by means of a hammer, and this latter operation frequently mars and injures the spindle and the spool. Aside from the foregoing defects, it has heretofore been necessary to have a number of interchangeable spindles of different sizes on hand to accommodate spools having different-sized bores.

40 The object of my invention is to obviate the aforesaid defects; and to that end my invention consists, essentially, of a spool-spindle slitted longitudinally and an expander inserted in the slitted portion of the spindle, as hereinafter more fully described, and specifically set forth in the claims.

45 In the accompanying drawings, Figure 1 is a side view of my improved spool-spindle with the spool shown in dotted lines. Fig. 2 is an

end view of the same, and Fig. 3 is a longitudinal section.

A represents the spool-supporting spindle, usually formed of steel. The body or shank which enters the bore of the spool I render expansible by slitting it longitudinally, as shown at *a* in Fig. 1 of the drawings, the slit or slits extending transversely through the spindle, and preferably only part way the length thereof, leaving a rigid portion, *b*, at the free end. Longitudinally through this rigid end portion, and part way into the slitted portion of the spindle, is formed a channel, *c*, the diameter of which is greater than the width of the slit *a*, and its inner end terminates with a bevel, as shown at *d* in Fig. 3 of the drawings.

65 That portion of the channel *c* which extends through the end portion, *b*, is screw-threaded, and in this works a screw, *e*, of sufficient length to reach to the beveled inner end of the channel, and the inner end of the screw is tapered, so that by turning the screw into the spindle the tapered end of the former wedges apart the slitted portion of the spindle, and thus expands the same.

The described expansible spindle can be adjusted to fit different-sized bores of spools and sustain the spool true to the axis of the spindle by means of the fixed taper at the back end and the adjustable taper at the free end, thus giving a firm support to the spool at both ends, such as to invariably cause the thread to wind evenly upon the spool.

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

1. A spool-spindle slitted longitudinally part way its length and having a rigid end portion, a screw-threaded longitudinal channel through said end portion, and a wedging-screw extended through said channel, substantially as described and shown.

2. The within-described spool-spindle slitted longitudinally and having a rigid portion at its free end, a channel extending longitudinally through said end portion of the spindle

and part way the length of the slitted portion thereof, terminated with a bevel therein and screw-threaded in the rigid end portion of the spindle, and an adjusting-screw inserted
5 in said channel and having its inner end tapered, substantially as described and shown, for the purpose specified.

In testimony whereof I have hereunto signed my name and affixed my seal, in the

presence of two attesting witnesses, at Community, in the county of Madison, in the State of New York, this 4th day of December, 1886.

FERRAND F. ELLIS. [L. S.]

Witnesses:

ALFRED BARRON,
VICTOR C. NOYES.