(No Model.)

F. J. FREESE.

LOOM SHUTTLE SPINDLE.

No. 343,518. Patented June 8, 1886.

Fig. 1.

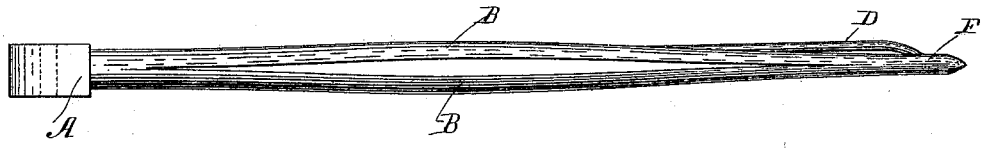
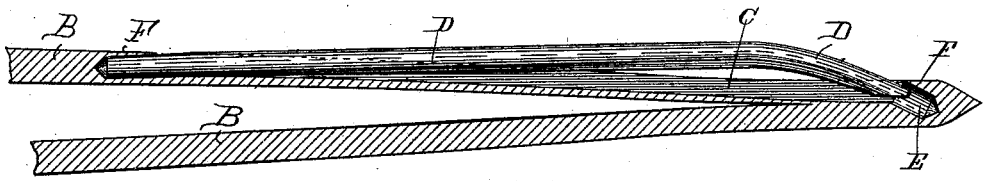


Fig. 2.



WITNESSES:

W. H. Ford.
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by A. O. Fraser,
His Attorney.

UNITED STATES PATENT OFFICE.

FRANCIS J. FREESE, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO HIMSELF, GEORGE S. CUSHING, AND JOHN A. KIMBALL, OF SAME PLACE.

LOOM-SHUTTLE SPINDLE.

SPECIFICATION forming part of Letters Patent No. 343,518, dated June 8, 1886.

Application filed September 18, 1885. Serial No. 177,430. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. FREESE, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Loom-Shuttle Spindles, of which the following, taken in connection with the accompanying drawings, is a specification.

This improvement relates to that class of shuttle-spindles in which a spring, forming part of or attached to the spindle, serves to hold the cop in proper position.

By my invention a spring is provided at or near the tip of the spindle—that is, located at a proper point between its tip and its middle portion—so as to support the nose of the cop while its body or base is held by the swell of the spindle or otherwise.

A popular form of spindle is that having its body split longitudinally, almost from heel to point, with the two members separated somewhat midway, so as to spring in and out to receive and hold the cop. I employ this general form of spindle provided with the novel feature of my own invention, which is, briefly, a wire spring lying lengthwise in and projecting partially out of a longitudinal groove formed in the outer half of the length of the spindle. I sometimes braze the inner end of this spring in the inner end of the groove, while its free end occupies a covered recess at the outer end of such groove at the tip of the spindle. In other cases I leave the spring free to move bodily in the groove to a limited extent, both its ends being held therein.

In the drawings, Figure 1 is a plan of my improved spindle, and Fig. 2 an enlarged longitudinal section of the outer half thereof, taken through the groove, and showing the spring in elevation.

A is the heel, and B B the split body, of the spindle.

C is a groove formed in one side of the spindle, near its outer end, and D a bent spring located in said groove and lying lengthwise in and just above it, with both its ends returned into the groove, about as shown in Fig. 2. The best results are secured by giving the spring a somewhat abrupt rise to its highest point near its outer end, thence gradually declining and merging in the spindle considerably beyond its middle portion, as shown in the drawings.

I am accustomed to form a socket or covered recess, E, at the tip of the spindle, to receive the outer end of the spring, keep it from rising at its extreme point above the surface of the spindle, and permit its elongation when depressed. The bridge or cover F over the spring end insures it against catching the cop when it is placed thereon.

When the spring is loose in the groove, such a socket and cover is provided for each of its ends, so that it may be sprung into place, may elongate in use, and may slide a trifle without dropping out.

I am aware that shuttle-spindles have heretofore been grooved longitudinally almost from end to end, and provided with a correspondingly long spring placed in said groove to hold both ends of the cop, such spring sometimes protruding entirely through the spindle in a slot formed near its tip. In these cases the spring forms practically one side of the entire spindle. Such construction I disclaim; but

I claim as my invention—

The split spindle B B, having groove C in one of its members, in combination with the cop-holding spring D, having both ends wholly within said groove and its intermediate portion raised out of the same, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 14th day of September, A. D. 1885.

FRANCIS J. FREESE.

Witnesses:

A. H. SPENCER,

E. A. PHELPS.