G. W. & G. F. DOE.

Loom Shuttle Spindle.

No. 231,773. Patented Aug. 31, 1880.

Fig. 1.

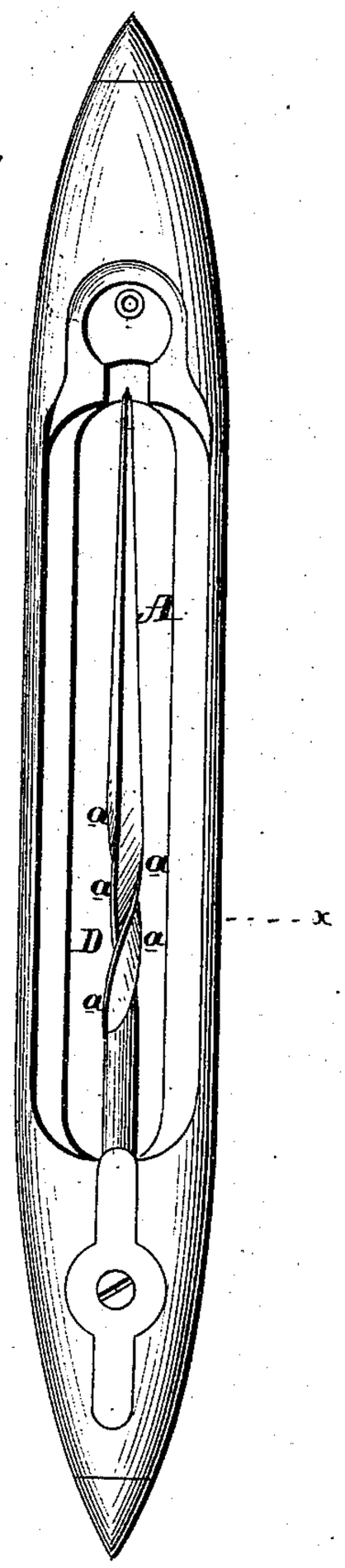


Fig. 2.

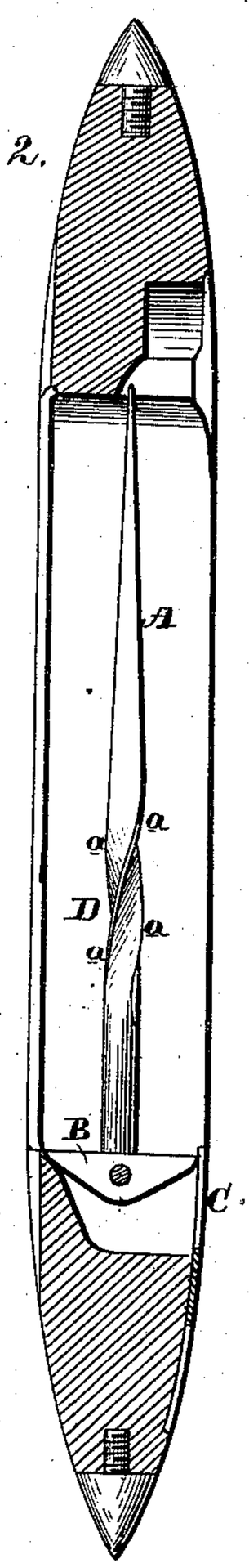
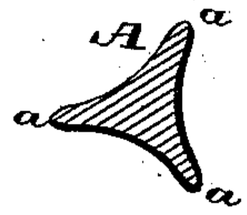


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE W. DOE AND GEORGE F. DOE, OF FAIRHAVEN, MASSACHUSETTS.

LOOM-SHUTTLE SPINDLE.

SPECIFICATION forming part of Letters Patent No. 231,773, dated August 31, 1880.

Application filed February 12, 1880.

To all whom it may concern:

Be it known that we, GEORGE W. DOE and GEORGE F. DOE, of Fairhaven, county of Bristol, and State of Massachusetts, have invented a new and useful Improvement in Loom-Shuttle Spindles, which invention is fully set forth in the annexed specification and accompanying drawings.

This invention relates to an improvement in solid or single piece spindles, its object being to produce a spindle which is simple, durable, and cheap, upon and from which cops can be quickly placed and removed, and which will hold the cop securely during the operation of weaving.

To this end it consists in a solid loom-spindle angular in cross-section and twisted in a portion of its length, whereby its angular longitudinal edges are given a spiral direction. When a cop is forced upon the spindle and turned from one-fourth to one-half a revolution the angular spiral edges of the spindle take into it like a screw-thread and hold it firmly, thus obviating the necessity of expansion-springs, latches, or similar attachments to the spindle.

In the accompanying drawings, Figure 1 is a top view of a shuttle provided with a spindle according to our invention. Fig. 2 is a section on line *x x*, Fig. 1, and Fig. 3 is a cross-section of the spindle through its twisted portion.

The spindle A is pivoted in the shuttle, and its head B is acted upon by the spring C in a customary manner. In the present instance the spindle is made triangular in cross-section, so that it has three sharp longitudinal edges, *a a a*, and the body of the spindle near its base is twisted about one-third of a revolution, as shown at D, to give its salient edges a spiral direction, in order that when a cop is forced upon the spindle and turned at the same time these edges will take into it, after the fashion of a screw-thread, and hold it firmly. As the turning of the cop is done while it is passing onto the spindle, it requires no more time to place the cops than if the spindle were perfectly plain.

It is obviously very advantageous to dispense with the ordinary expansion-springs, latches, and other holding devices for the cop, as by so doing the original cost of the shuttle is materially lessened.

We are aware that a spindle has been formed with an attached spring coiled spirally around it, and arranged to be bowed or expanded when the spindle is in the shuttle. We are also aware that a spindle has been provided with a spiral attached rib; and we lay no claim to a spindle of either of these two forms.

What we claim is—

A solid loom-spindle angular in cross-section and twisted in a portion of its length, whereby its angular longitudinal edges are given a spiral direction, substantially as and for the purpose set forth.

GEO. W. DOE.
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Witnesses:
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