Earl Amri Thissell.
Improved Shuttle.

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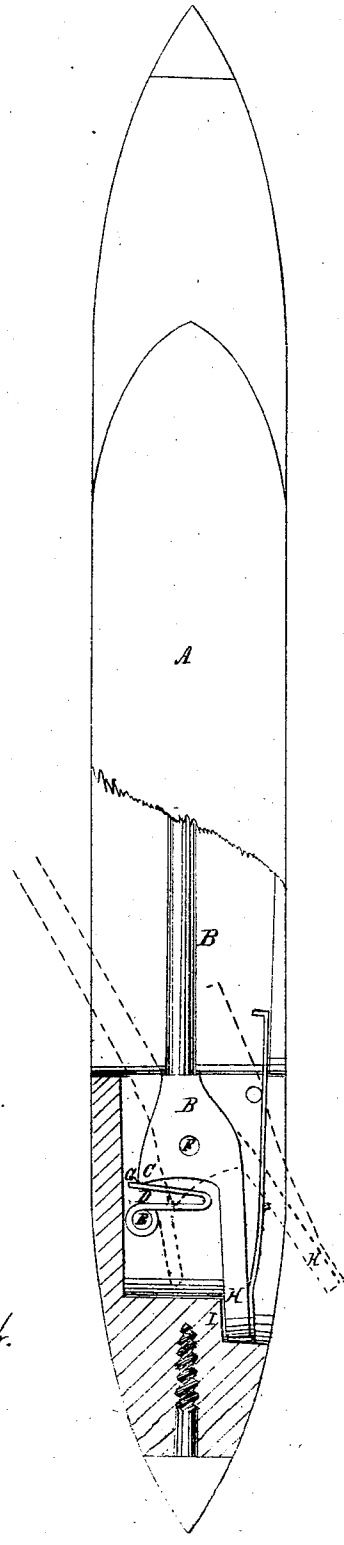
PATENTED JUL 18 1871



Witnesses.
Nathaniel Hill jr.
E. C. Leslie

Inventor.
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UNITED STATES PATENT OFFICE.

EARL AMRI THISSELL, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 117,220, dated July 18, 1871.

To all whom it may concern:

Be it known that I, EARL AMRI THISSELL, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Shuttles for Looms, of which the following is a specification:

The invention relates to the action or mechanism for operating the spindle; and consists of a pivoted spring in connection with an arm of the spindle or its equivalent, and so arranged that when the spindle is in either of its extreme positions the spring holds the spindle against its abutment, while on moving the spindle through a small portion of the angle of its motion the spring trips or revolves with the bearing of the arm and permits the spindle to be freely turned; the object being to give greater firmness to the spindle in its extreme positions, and to permit it to be moved from one extreme position to the other with greater ease than has heretofore been attained; and also to attain comparative freedom from wear in the working parts.

The drawing is a side view of the shuttle with a portion of the wood removed, showing the action or mechanism embodying my invention.

A is the shuttle-wood. B is the spindle. C is an extension of the spindle to take a bearing on the spring D at the point G. E is the pivot of the spring D. F is the pivot of the spindle B. H is the heel of the shuttle, abutting against the shuttle-wood at I when the spindle is in position for use in the loom. The pivot E is so placed with reference to the spindle that the pressure of the point C will be in the direction, or nearly in the direction, of that pivot when the spindle is in position for use in the loom. The distance between the pivots E and F should be equal to the distance of the pivot E to the bearing G when the spring is compressed fully to the extent it is designed to employ it, plus the distance from the point of the projection C to the pivot F. The distance of the bearing E from the bearing G should be so proportioned to the distance of the point C to the bearing F that, on moving the spindle from one extreme position to the other, the spring may be rolled through an angle sufficiently great to change its direction of pressure from being nearly direct against the line C F, when the spindle is closed, to a direction so nearly direct against the line C F when the spindle is turned out from the shuttle as to give sufficient stiffness or rigidity to the spindle in that position.

With this shuttle, as described, the spindle is held with great firmness in its position for use, while it admits of being readily moved from one position to the other, the spring resisting the motion of the spindle with directness only when the spindle is moved through the first portion of the angle of its motion, while the working parts are exposed to very slight wear from the slight flexure of the spring and the absence of sliding friction in its action.

I do not limit myself to the exact form and proportion of parts shown in the drawing; nor to the use of a round spindle-pivot, E—this may be made with an edge, as in a scale-bearing, for the spring D to turn against; nor to the position shown for the pivot F with reference to the spindle—this may be placed out of line of the axis of the spindle and at a greater distance from the point C. I do not claim the form of the heel H and abutment I, here shown—they are in common use. The projection C may obviously be in the form of an arm, either forming part of or so connected with the spindle as to operate in the manner before described; therefore, I do not limit myself to a projection, C, forming part of the spindle.

I claim as my invention—

The pivoted spring D, in connection with the arm C of the spindle B or its equivalent, substantially as described, and for the purposes set forth.

EARL AMRI THISSELL.

Witnesses:

NATHANIEL HILL, Jr.,

E. C. LESLIE.