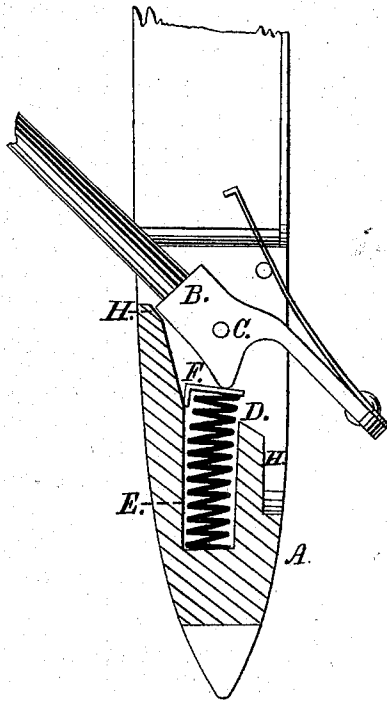


E. A. THISSELL.

Improvement in Loom-Shuttles.

No. 129,692.

Patented July 23, 1872.



Nathaniel Hill.
S. W. Hill

Earl Ammi Thissell

UNITED STATES PATENT OFFICE.

EARL AMRI THISSELL, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 129,692, dated July 23, 1872.

Specification describing certain Improvements in Loom-Shuttles, invented by EARL AMRI THISSELL, of Lowell, in the county of Middlesex and State of Massachusetts.

My invention relates to an improvement in the mechanism for holding the spindle of the shuttle in its extreme positions, while permitting it to be freely moved from one extreme position to the other when desired; and consists in the combination, with the shuttle-body and the spindle, and the spring which presses against the heel of the spindle, of a socket formed in the body of the shuttle to contain the spring, and a shield of thin metal placed over one end of the spring upon which the heel of the shuttle presses; the object of my invention being to produce a shuttle in which the spring has a freer movement than has heretofore been attained, and also to cheapen the manufacture of shuttles.

A represents a section of a portion of a shuttle-body; B, a portion of the spindle; C, the pivot; D, the spring, placed in the socket E formed in the body of the shuttle. F is a shield, placed between the spring and heel of the spindle. The shield is simply a small piece of steel plate with a portion bent at right angles, or nearly so, the object of this bent portion being to prevent the shield from slipping from its position in one direction, the stock of the shuttle confining it in other directions. This shield is of a form which is most cheaply made, and, having no spindle within the spring, all friction of the spring and tendency to cramp against the spindle is obviated, and the spring is free to bend laterally as the heel of the spin-

dle is pressed from one extreme position to the other. When the spindle is closed, or when it is open, as in the drawing, the heel rests to one side of the axis of the spring, and the spring is compressed more on that side. In moving the spindle from that position the spring must be compressed, not only by the amount due to the curved path and the peculiar form of the heel, as in other shuttles with spindles actuated by spiral springs, but also by the amount the spring under the heel is compressed more than the middle portion, or the portion near the axis. This arrangement produces in a high degree the peculiar action desired in a shuttle-spring, the resistance to movement in the spindle being mainly in the first portion of the path moved over.

The shuttle here shown is arranged with a well-known device for holding a bobbin in position on the spindle, which device is omitted when the invention is applied to a cop-shuttle.

The spindle is held in position against the resistance of the spring in each of its extreme positions by abutting against the shuttle-body at points H H' in the drawing.

I do not claim the spiral spring acting on the heel of the spindle.

I claim—

The combination of the shield F, substantially as described, with the spring D, the socket E, the spindle B, the pivot C, and the shuttle A.

EARL AMRI THISSELL.

Witnesses:

NATHANIEL HILL,
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