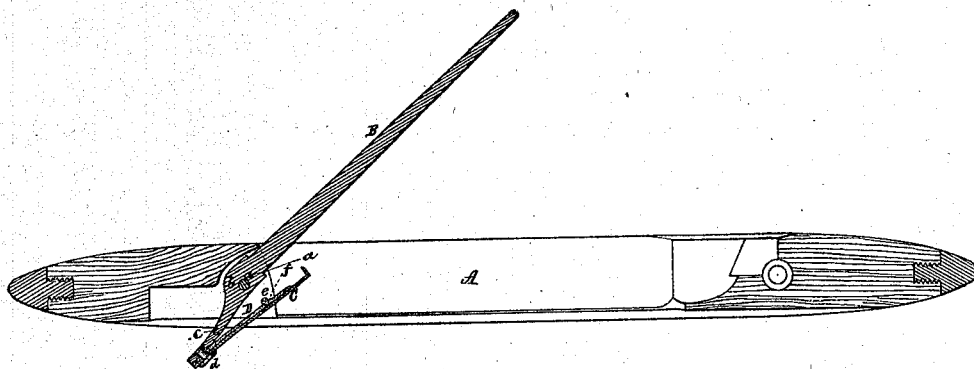


C. E. Smith,
Loom Shuttle.
No. 112,643. Patented Mar. 14, 1871.



Witnesses
S. W. Piper
L. N. Miller

Charles F. Smith
by his attorney
R. M. Eady

United States Patent Office.

CHARLES ELBRIDGE SMITH, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO HIMSELF, JOHN S. JAQUES, AND FRANK T. JAQUES, OF SAME PLACE.

Letters Patent No. 112,643, dated March 14, 1871.

IMPROVEMENT IN SHUTTLES FOR LOOMS.

The Schedule referred to in these Letters Patent and making part of the same

To all persons to whom these presents may come :

Be it known that I, CHARLES ELBRIDGE SMITH, of Lowell, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Shuttles for Looms; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, which denotes a longitudinal section of a shuttle provided with my improvement.

In such drawing—

The body of the shuttle is shown at A,

B being the spindle, which is supported on a pivot or center pin, *a*, going through the said body A.

From the head *b* of the spindle an arm, *c*, is extended back, in manner as shown.

There are attached to the rear part of such arm two springs, O D, one being laid on the other, and both being united to the spindle-arm *c* by a strong screw or rivet, *d*, going through them.

The lower of the said springs is formed to serve as a catch, to hold the bobbin upon the spindle as an ordinary spring-catch does, that is, by taking into a groove in the head of the bobbin.

The inner spring rests against a pin, *e*, going transversely through the body of the shuttle, and arranged in manner as represented.

The said inner spring I form with a groove, *f*, extending transversely across it, such groove being to receive the pin *e* when the spindle is elevated to its highest position, and also with the pin, to determine such position of the spindle.

The groove *f*, with the pin *e*, serve to stop the spindle, or prevent it from being pulled up against that part of the shuttle-body which is immediately over or contiguous to its head, thereby avoiding danger of bending the spindle and breaking away the wood of the shuttle during the act of pulling up the spindle.

The stop-groove in the spring admits of the wood of the body being projected over the head in manner as shown, not only to make a better finish, but to op-

erate to protect the head and joint of the spindle from fibrous accumulations liable to gather in the pivot.

It will be evident that the more that part of the shuttle-body which is immediately back of the spindle-head can be advanced over such head, or the nearer it can be made to approach the bobbin-head when the spindle is in its lowest position, the more will the spindle-head and joint and the springs be protected by the wood and the bobbin-head from gathering fibrous accumulations or extraneous matters while the spindle may be in use.

The two separate springs are used in order to have sufficient power to hold the spindle, when down, in the body, and the shuttle is in use, and also to hold the bobbin on the spindle without causing the latter to be thrown up more or less by the catch.

The catch, being separate from and operating independently of the auxiliary spring, exerts little power to throw the bobbin upward in the shuttle when the bobbin is down, the auxiliary spring, by acting against the cross-pin, serving to keep the bobbin down and counteract the effect of the catch-spring to throw it up.

I make no claim to the subject of the United States patent No. 46,040.

I claim—

1. In the loom-shuttle the two springs O D, as combined and arranged with the spindle-arm *c*, as set forth, and provided with a stop-groove, *f*, arranged in the inner spring to receive the pin *e* under circumstances as hereinbefore explained.

2. The improved loom-shuttle, as made with the springs O D, the notch *f*, and the pin *e*, arranged and applied to the shuttle-body, and the spindle-arm *c*, as set forth, and with the shuttle-body extended over so as to cover the spindle-head, all substantially as described and represented.

CHARLES ELBRIDGE SMITH.

Witnesses:

FRANK O. BUTTERFIELD,
DANIEL G. TAYLOR.