W. A. DOHERTY.

Loom-Shuttle Attachment.

No. 204,717. Patented June 11, 1878.

Fig. 1

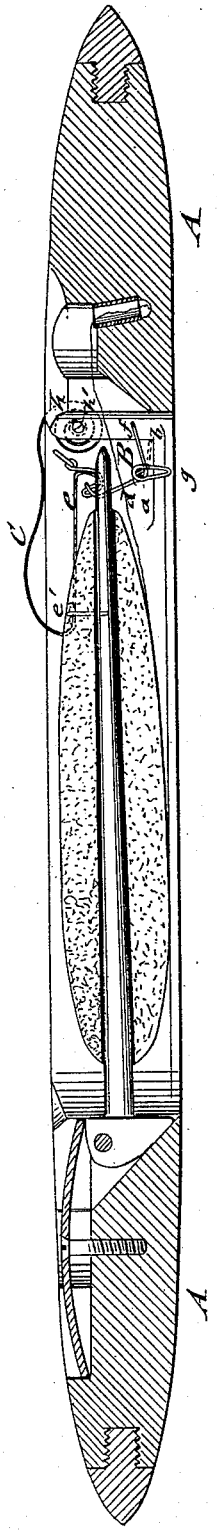


Fig. 2

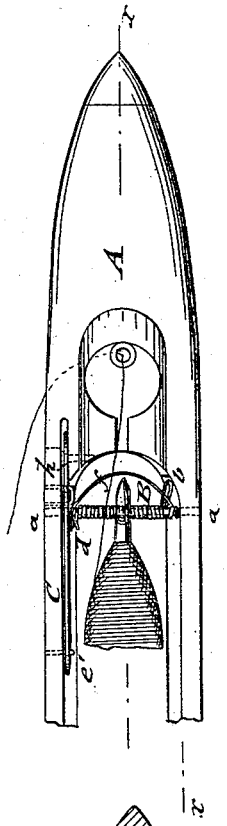
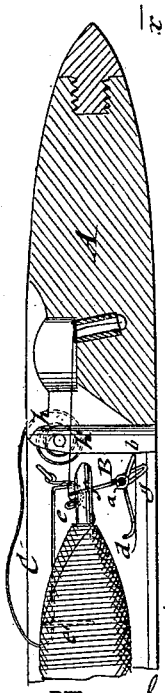


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM A. DOHERTY, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD OF HIS RIGHT TO MICHAEL HIGGINS, OF SAME PLACE.

IMPROVEMENT IN LOOM-SHUTTLE ATTACHMENTS.

Specification forming part of Letters Patent No. **204,717**, dated June 11, 1878; application filed February 18, 1878.

To all whom it may concern:

Be it known that I, WILLIAM A. DOHERTY, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and Improved Loom-Shuttle Attachment, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of a loom-shuttle with my improved guard attachment, taken on line *x x*, Fig. 2. Fig. 2 is a top view of part of a shuttle, and Fig. 3 a vertical longitudinal section of the same with the guard attachment released and thrown over the point of spindle.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an attachment to right and left hand loom-shuttles by which the weaving of bad cloth is prevented, and in case any false shed is made by any irregularities in the warp, and that part of the shed carried lower than usual, the attachment is released and thrown over the spindle-point, so as to render it impossible to draw out the filling from the shuttle, and thus break it and stop the loom.

The invention consists of a lateral bow-shaped spring-guard that is secured by an arm to a hook arrangement of a side spring of the shuttle, which spring projects beyond the upper edge of the same, and is acted upon by a false shed, so as to throw the guard over the spindle and break the filling.

Referring to the drawing, A represents a left or right hand loom-shuttle of the usual construction, to a fixed cross-pin or screw, *a*, of which, below the point of the spindle, is applied a spring-acted guard device, B, that is preferably bent, of a continuous piece of spring-wire.

The guard B is spirally coiled around the pin *a*, and twisted at one end of the same into a toe-piece, *b*, that bears on a seat of the shuttle and exerts the spring-pressure, while a looped arm, *d*, at the opposite end of the spiral wire is placed over a hook, *e*, of a side spring, C, of the shuttle.

The guard B forms, between the toe at one side and the looped arm at the opposite side, a semicircular bow-shaped part, *f*, that assumes a position nearly parallel to the spindle, as in Fig. 1, when the looped arm is hooked to the retaining side spring, but which is carried over the point of the spindle when the side spring C releases the guard device, as shown in Fig. 3. The guard B has also a central downward-bent finger-rest, *g*, that facilitates the setting of the guard device into its proper position on the hook of the side spring C.

The side spring C is, like the spring-guard B, bent, of wire, with a coiled spring, *h*, like a watch-spring, at one end, which is attached to a center screw, *h'*, and by the same secured to a slit in the front end of the shuttle, at that side which is in front of the reed and next to the weaver. The side spring C extends back toward the butt-end of the spindle, and projects at its middle or upper part above the edge of the shuttle, being then turned back so as to form the hook *e*, the end back of the hook being hung to a pivot, on which and the tension-screw the side spring swings.

The outer end of the side spring is guided along a staple, *e'*, which controls the extent of motion of the side spring, and prevents it from projecting beyond the required distance from the edge of the shuttle.

In place of the guide-staple, a recessed and adjustable arm of angular or elbow shape is arranged in the shuttle sidewise of the side spring, and connected to the lower part of the same by a stud that bears thereon above the hook. The outer end of the adjustable arm may be raised or lowered and set by a clamp-screw entering a recess of the arm. The raising or lowering of the arm will, by the action of the stud on the side spring, admit the raising or lowering of the same, which is of great service in regulating the height of the side spring above or below the level of the shuttle, so as to suit the height of the different sheds.

As the tension of the projecting spring may be regulated by the fastening center screw, the device may be adjusted to a greater or less nicety, and the guard released by a greater or less pressure of the threads thereon.

A false shed presses the side spring down and releases the looped arm of the guard, so

that the spring and toe throw the bow-shaped guard over the point of the spindle and underneath the filling-thread which is flowing off at the point of the spindle, so as to cause it to break and stop the loom. The guard attachment may be used by changing the side spring and position of the lateral guard from one side to the other with equal facility for right or for left hand shuttles.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a shuttle attachment, the guard B, coiled around the pin *a*, twisted at one end into a toe-piece, *b*, and having arm *d*, bow *f*, and finger-rest *g*, in combination with a projecting side spring, C, having hook *e*, guided along staple *e'*, and swinging on a pivot and tension-screw, as shown and described.

WILLIAM ALEXANDER DOHERTY.

Witnesses:
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MICHAEL HIGGINS.