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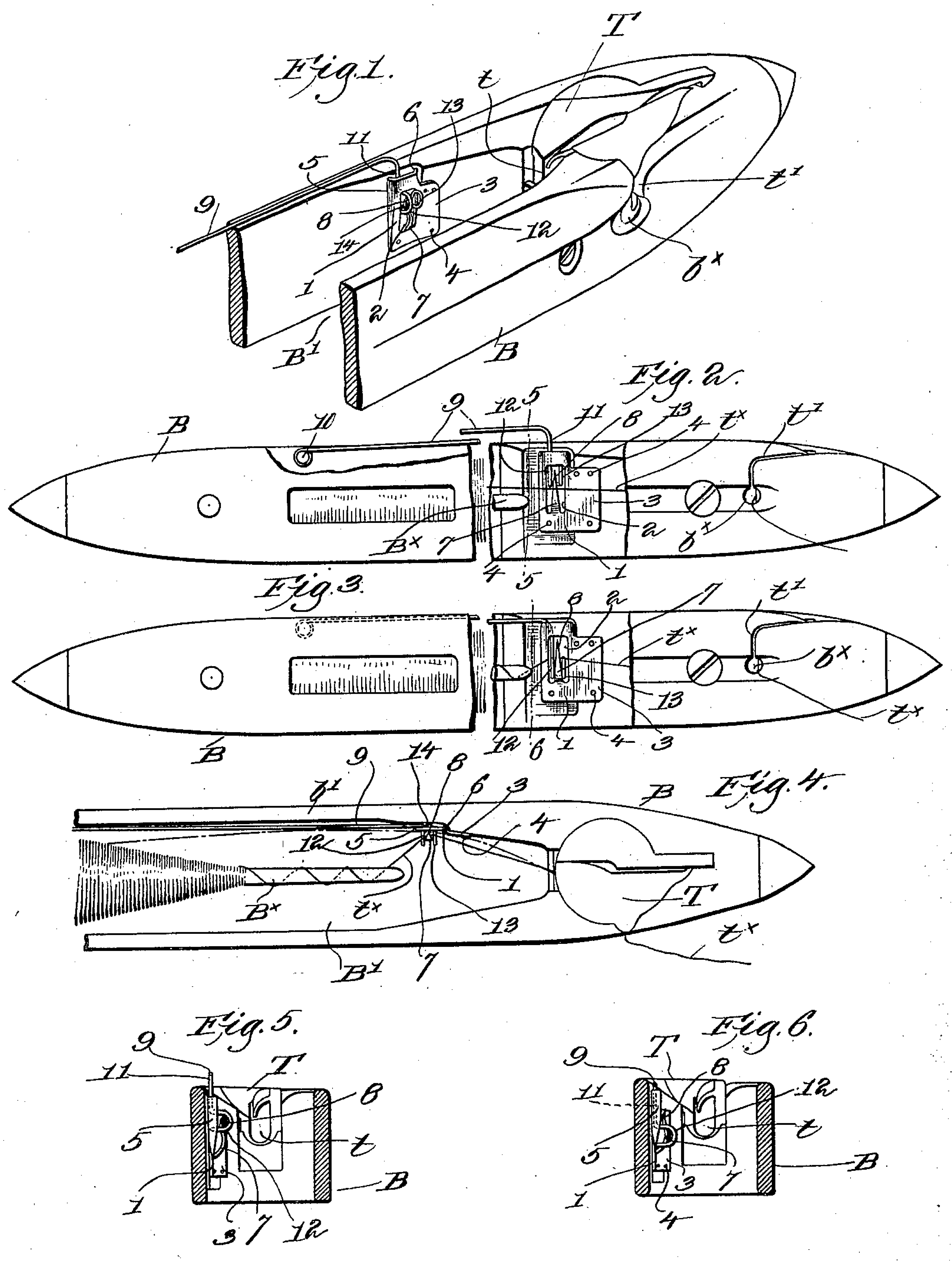
H. CÔTÉ.

LOOM SHUTTLE.

APPLICATION FILED DEC. 10, 1903.

NO MODEL.



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No. 753,957. Patented March 8, 1904.

UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 753,957, dated March 8, 1904.

Application filed December 10, 1903. Serial No. 184,530. (No model.)

To all whom it may concern:

Be it known that I, HENRY CÔTÉ, a citizen of the United States, and a resident of Woonsocket, county of Providence, State of Rhode Island, have invented an Improvement in Loom-Shuttles, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a loom-shuttle provided with means which upon the occurrence of a "float" in the warp will break the filling, and thereby cause the stoppage of the loom, so that the weaver can correct the fault promptly. The displacement of one or more of the warp-threads out of the proper plane of the shed is technically termed a "float," and they cause overshots in the cloth, necessitating pick-outs, so that the loom should be stopped upon the occurrence of a float before the damage is done.

In the present embodiment of my invention I have provided means in the shuttle to catch and part the filling-thread upon the occurrence of a float, and such breakage will of course effect stoppage in an ordinary loom.

The invention is equally well adapted for use in an automatic filling-replenishing loom of the feeler type, wherein the filling-fork effects stoppage of the loom upon breakage of the filling, as is well known to those skilled in the art.

I have illustrated my invention in connection with an automatically self-threading loom-shuttle; but it will be manifest hereinafter that the invention is not in any way restricted to such type of shuttle, as it can be used with equal facility in a common shuttle operated in a non-replenishing loom.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a perspective view of the front or eye end of a loom-shuttle embodying one form of my invention. Fig. 2 is a side elevation of the shuttle broken out between its ends and with its nearer side wall broken away to show more clearly novel features of construction to be referred to. Fig. 3 is a similar view, but showing the filling about to be parted or broken as the result of the detection of a float. Fig. 4 is a top or plan view of the front end of the shuttle. Fig. 5 is a transverse section on the line 5 5, Fig. 2, looking toward the right; and Fig. 6 is a similar view on the line 6 6, Fig. 3.

The shuttle-body B, having a side delivery-eye $b^{\times}$ and a longitudinal opening B′ to receive the filling-carrier or bobbin $B^{\times}$, is of usual construction and, as herein illustrated, is provided with a threading-block T, having a longitudinal thread-passage t and a passage t' leading to the eye $b^{\times}$ to automatically conduct the filling-thread $t^{\times}$ from the thread-passage to the eye in well-known manner.

On the inner face of the side wall of the shuttle toward which the filling whips or turns as it is drawn off over the tip of the filling-carrier I have mounted a thread-parter, which is normally rendered inoperative or inactive. Upon the occurrence of a float in the warp, however, the thread-parter is automatically rendered operative to engage and catch the filling-thread between the tip of the filling-carrier and the delivery-eye of the shuttle, the lateral deflection of the thread caused by such engagement preventing it from drawing off the bobbin and breaking it promptly.

Referring to the drawings, a plate 1, having an upright slot 2, is firmly secured to the inner face of the rear side wall b' of the shuttle, (the thread drawing off from left to right when facing the tip of the bobbin,) the plate having a wing 3, through which some of the fastenings 4 are extended into the wall, said wing lying against the latter. The upright rear edge of the plate is bent over at 5, and the opposite edge above the wing is similarly bent at 6 to form an upright recess or pocket between the side wall and the plate, behind the slot 2, for a purpose to be described. A prong 7 springs from the bottom of the slot and is curved toward the longitudinal center of the shuttle and upturned, (see Figs. 1, 5, and 6,) its tip 8 being somewhat lower than the top of the slot 2 and leaving a clearance between the tip and the plate. If the tip of the prong is exposed or unprotected, the fill-

ing-thread will as it whips or throws around the tip of the bobbin pass down between the tip of the prong and the plate 1, as shown in Figs. 3 and 4, and be held from further rotary motion, so that longitudinal pull on the thread will draw it across the filling-carrier and break it promptly. Such lateral deflection of the thread and the diagonal line of pull thereof across the filling-carrier is so clearly shown in Fig. 4 that the action of the parting-prong 7 will be manifest.

The parting device must be inactive or inoperative under ordinary conditions, but rendered operative to act as described when a float occurs.

In the present embodiment of my invention I have provided a guard to normally shield or hood the tip of the prong and shed the thread therefrom, the guard being mounted on a yielding support, which serves also as a float-detector, so that upon occurrence of a float the guard is retracted and the prong uncovered. A resilient arm 9, preferably made of light yet strong wire, is fixedly secured at its rear end by a pin or other fastening 10 to the side wall *b'*, the forward end being downturned at 11 to enter the pocket hereinbefore referred to between the bent edges 5 and 6 of the plate 1. The lower end of the bend 11 is shaped to form a guard by forming two upright parallel loops 12 and 13, connected by the cross-piece 14, the loops projecting through the slot 2 at opposite sides of the prong 7. The resiliency of the support 9 ordinarily lifts the loops forming the guard to the top of the slot 2, Figs. 1, 2, and 5, to thereby shield or hood the tip of prong 7 and shed the thread as it whirls around between the bobbin-tip and the shuttle-eye, the free end of the support being then elevated above the top of the shuttle. When, however, the shuttle in passing through the shed encounters a float and is thereby lifted to make an overshot, the warps above engage and depress the detecting member 9, thereby lowering the guard into the position shown in Figs. 3, 4, and 6 and uncovering the prong 7 to operate as has been described.

If the shuttle passes underneath a float held out of its proper plane in the shed, it will depress the support 9 and move the guard into inoperative position, as before set forth.

Manifestly the means herein shown and described will operate in the same manner if applied to a common shuttle instead of to one provided with an automatic self-threading device.

My invention is not restricted to the precise construction and arrangement herein shown and described, as the same may be modified by those skilled in the art in various particulars without departing from its spirit and scope.

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

1. In a loom-shuttle having a delivery-eye and adapted to contain a filling-carrier, a thread-parter located on the shuttle-wall in front and at one side of the tip of the filling-carrier, a guard to normally prevent engagement of the filling-thread by said device, and a controller for and to retract the guard and render the thread-parter operative upon the occurrence of a float in the warp.

2. A loom-shuttle adapted to contain a filling-carrier and having a delivery-eye, an upturned thread-parter on the side wall of the shuttle and between the eye and the tip of the filling-carrier, a guard to normally shield or hood the thread-parter, and a yielding support for the guard extending above the shuttle and adapted to be depressed by a float, to retract the guard, the whipping of the filling-thread causing its engagement and breakage by the thread-parter when the guard is retracted.

3. A loom-shuttle adapted to contain a filling-carrier and having a delivery-eye, an upturned prong mounted on the side wall of the shuttle near the tip of the filling-carrier, a guard to normally shield or hood it and prevent catching of the filling-thread thereby, and a yielding support for the guard normally extending above the top of the shuttle and adapted to be depressed upon the occurrence of a warp-float, to retract the guard and render the prong operative.

4. A loom-shuttle adapted to contain a filling-carrier and provided with an automatically self-threading device, a thread-parter mounted on the shuttle side wall slightly in advance of the tip of the filling-carrier, a resilient float-detector carried by the shuttle, and a guard controlled by the detector and normally retained thereby in position to prevent engagement of the filling-thread by the thread-parter, detection of a float causing the guard to be retracted and thereby rendering said thread-parter operative.

5. A loom-shuttle adapted to contain a filling-carrier and having a delivery-eye, a slotted plate secured to the side wall of the shuttle beyond the tip of the filling-carrier and having an upturned prong, a resilient float-detector mounted on the shuttle and having its forward, free end downturned to pass between the plate and the side wall of the shuttle, and a guard carried by the downturned end of the detector and projecting inward through the slot in the plate, to normally shield the point of the prong and prevent engagement of the filling-thread thereby.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY CÔTÉ.

Witnesses:
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