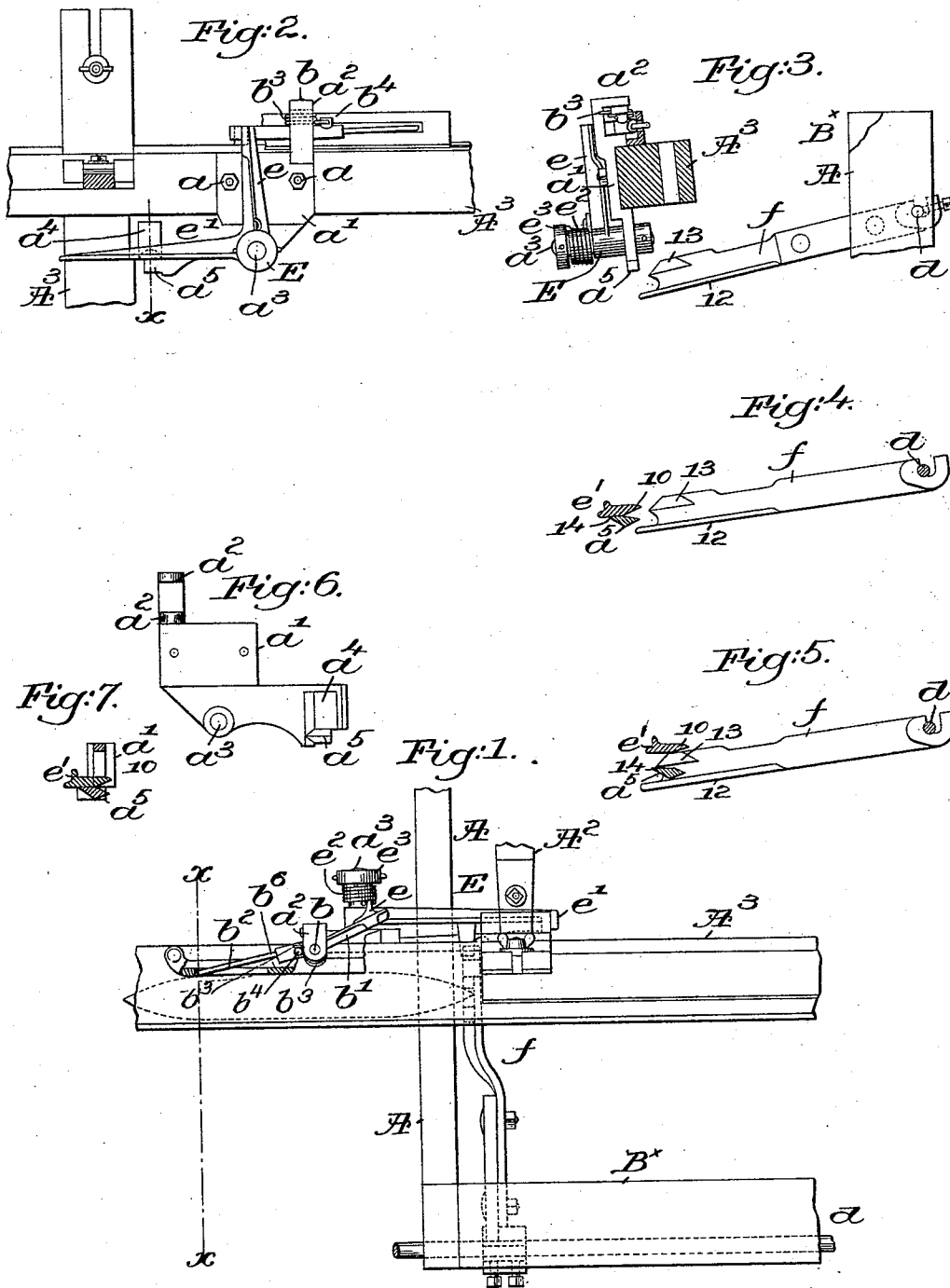


(No Model.)

J. H. NORTHRUP.
LOOM.

No. 529,941.

Patented Nov. 27, 1894.



Witnesses.

Louis N. Lowell
Edward F. Allen.

Inventor:
James H. Northrup.
by Crosby Gregory
Attys

UNITED STATES PATENT OFFICE.

JAMES H. NORTHROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO THE NORTHROP LOOM COMPANY, OF SAME PLACE AND SACO, MAINE.

LOOM.

SPECIFICATION forming part of Letters Patent No. 529,941, dated November 27, 1894.

Application filed October 19, 1893. Serial No. 488,639. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. NORTHROP, a subject of the Queen of Great Britain, residing at Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention is intended as an improvement on the class of looms represented in United States Patent No. 454,810, granted to me June 23, 1891, in which the shuttle is automatically supplied with a bobbin while in the shuttle-box. In such class of looms it is of the greatest necessity that the shuttle be in its proper position in the shuttle box, otherwise the bobbin cannot be pushed into it. The shuttle is apt to rebound and get out of position in the box.

My present invention relates chiefly to an arresting device by which to position the shuttle in the shuttle box.

Figure 1 is a top or plan view of a sufficient part of a loom with my improvements added to enable my invention to be understood; Fig. 2, a partial rear side view of the parts shown in Fig. 1. Fig. 3 is a section in the line x , Fig. 1; and Figs. 4 and 5 show the dagger in different positions. Fig. 6 is a detail of stand a' ; and Fig. 7 is a section in the line x , Fig. 2.

The loom frame A, the lay A^3 , it having at one end a shuttle-box, but partially shown in Figs. 1, 2, and 3, and the shaft d located under the lay and under control of the weft fork mechanism, and the lay connecting rod A^2 , are and may be all substantially as in Patent No. 454,810. The lay at its rear side, see Fig. 2, has attached to it, as shown, by bolts a , a stand a' , shown separately in Fig. 6, said stand having at its upper edge ears a^2 , at its lower edge a stud a^3 , the stand having a dagger opening a^4 closed at its lower end by a wedge piece a^5 . The ears a^2 receive a pivot b on which is pivoted an arresting device, shown as a lever b' having a finger at b^2 , the pivot being surrounded by a spring b^3 , one end of which is fixed while the other end bears on a stud b^4 connected to or form-

ing part of the arresting device, the said spring acting normally to keep the finger end b^2 of the arresting device pressed toward the lay, so that the end of said finger will stand in a slot in the wall b^6 of the shuttle-box, ready to enter the shuttle box farther and engage a shoulder, shown by dotted lines, as made in the outside wall of the shuttle, and prevent the rebounding of the shuttle from the shuttle box, the shoulder of the shuttle when against the arresting device insuring proper accurate position for the shuttle which is about to receive a bobbin from a hopper, as provided for in said patent, or, from, it may be, a feeder as provided for in my application, Serial No. 414,831, filed December 12, 1891. The free or finger end of the arresting device is not, however, put into the shuttle box far enough by the spring b^3 to engage the shuttle as referred to, unless previously to the entrance of the shuttle in said shuttle box, the weft fork mechanism, fully described in said patent or in said application, has already been moved by the absence of weft in the shed to indicate that the shuttle should be supplied with a bobbin containing weft.

The stud a^3 receives on it a lever E, shown as having two arms e, e' , the arm e having its upper end, see Fig. 1, beveled or inclined, said incline acting against the arresting device, the latter being held in contact with the lever by the spring b^3 referred to.

The arm e of the lever E is shown as extended beyond the opening a^4 , see Fig. 2, in the stand a' , and as having a beveled toe 10 which enters opening a^4 .

A spring e^2 , see Fig. 1, connected at one end to a collar e^3 secured to the stud a^3 , acts at its other end against the arm e of the lever E near its upper end and thus normally keeps the toe 10 down in the opening a^4 .

The rock-shaft d located in suitable bearings below the breast beam B, and rocked as provided for in said patent when the weft is absent, has secured to it an arresting dagger f , shown as having a flange 12 and a wedge block 13, said wedge block having preferably two beveled edges to co-operate with the beveled edges of the wedge piece a^5 , as will be illustrated in Figs. 3 to 5.

Figs. 1, 2, and 3 show the parts in normal position, the dotted lines showing the shuttle with the notch at its side.

If the weft is present in the shed when the lay is being moved forward to beat the weft into the shed at the fell, then the dagger *f* will stand as in Fig. 3, and the wedge piece *a*⁵ will pass over it, and consequently the finger *b*² will not enter the shuttle box and be in the way of the shuttle when the latter is next to be thrown out of the box, but if the weft is absent as the lay is being moved toward the fell, then the dagger will be raised, as in Fig. 4, so that the toe 10 of the lever *E* will meet one of the inclined sides of the wedge block 13, the under side of said block resting on the upper side of wedge piece *a*⁵, lifting said toe and causing the upper inclined edge of the arm *e* of said lever *E* to be moved laterally toward the fulcrum *b* of the arresting device, so that the spring *b*³ will push the finger *b*² into the shuttle box, and in such position the finger will act for an instant to arrest the shuttle in the shuttle box in correct position, so that the pusher or device which acts on the bobbin to put it into the chamber of the shuttle may act and put a bobbin into the shuttle. The wedge block 13 passes through to the rear side of the wedge piece *a*⁵, and the dagger then drops down so that the inner end of the wedge block 13, the end at the right in Fig. 5, will, as the lay is moved back away from the fell be struck by the point 14 of the wedge piece *a*⁵, and the part *a*⁵ will pass over the part *I*³, thus letting the lever *E* be turned by its spring *e*², and the arresting device by its spring *b*³, so as to get the finger *b*² out of the shuttle box, so that as the usual picker, not shown, strikes the shuttle,—it having been supplied with a bobbin,—the shuttle may be thrown from the box without any interference from the arresting device.

This invention is not limited to the exact construction represented for the devices shown, and my invention includes any and

all mere mechanical substitutes to operate substantially in the manner set forth.

Having described my invention, what I claim, and desire to secure by Letters Patent, 50 is—

1. A shuttle provided with a notch; a lay having a shuttle box to receive said shuttle and having also a slot at its side; and an arresting device attached to the lay and adapted 55 to be thrust into the slot in the side of the shuttle box to engage the notch of the shuttle, prevent its rebound and insure proper position of the shuttle; combined with a spring to actuate said arresting device and cause it to enter the notch in the shuttle as the latter fully enters the shuttle box, and devices to remove the end of said arresting device from the notch in the shuttle preparatory to throwing the shuttle from the shuttle box, substantially as described. 65

2. In a loom the following instrumentalities, viz;—a shuttle having a notch in its side, the lay; a pivoted shuttle-arresting device carried thereby and adapted to enter the shuttle-box and engage said notch when the filling is absent from the shed; a lever also carried by the lay and co-operating with one end of the arresting device to permit the latter to turn about its pivot and enter the shuttle-box, and a dagger to move said lever, substantially as described. 75

3. The lay having a stand provided with a wedge piece, a pivoted shuttle-arresting lever, and a lever carried by the lay and having its end arranged adjacent to the wedge piece and beveled to bear against the arresting lever, combined with a dagger having a wedge block to pass over and then under the wedge piece, as and for the purposes set forth. 85

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

JAMES H. NORTHROP.

Witnesses:

GEO. OTIS DRAPER,
S. F. SMITH.