

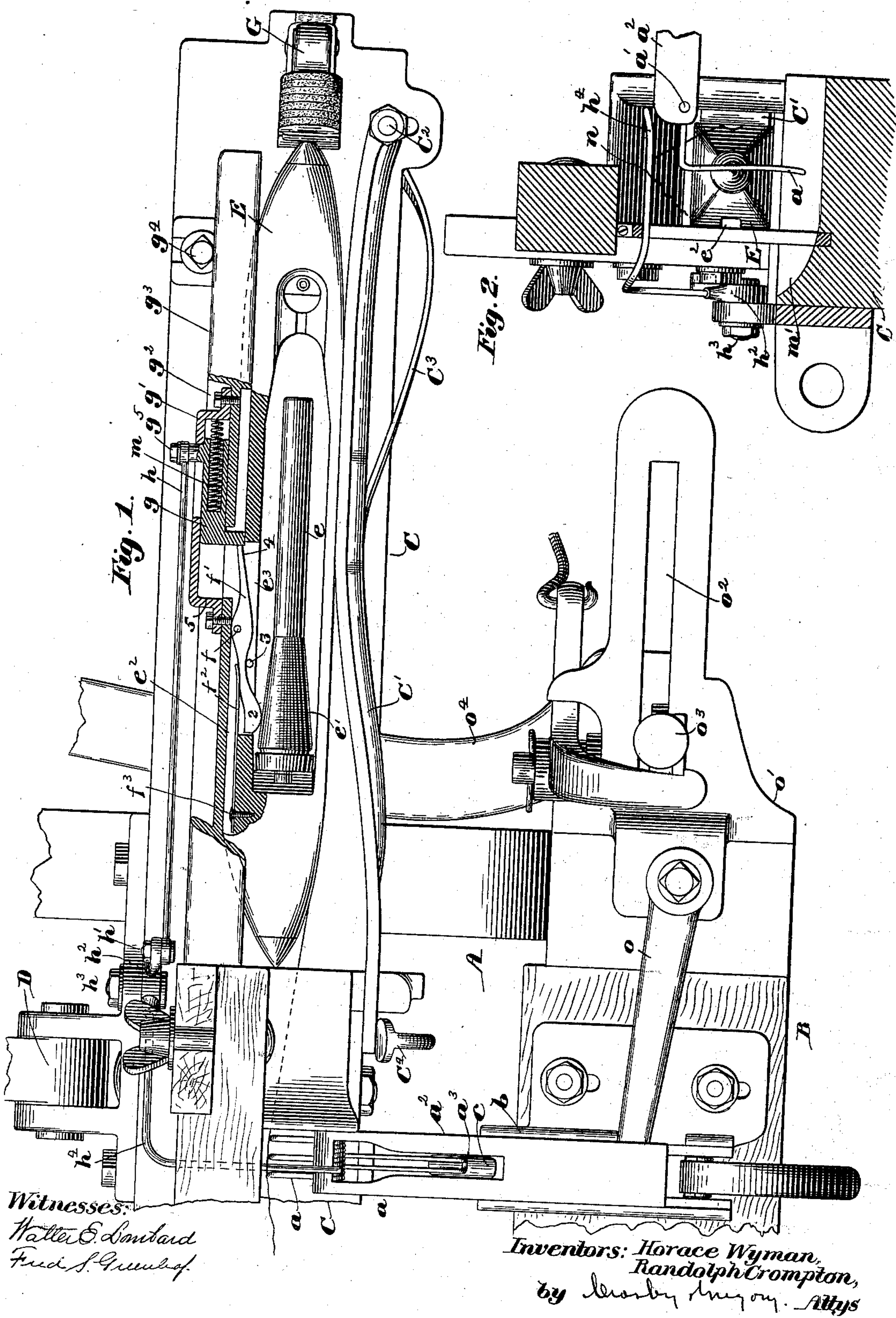
No. 609,257.

Patented Aug. 16, 1898.

H. WYMAN & R. CROMPTON.
LOOM.

(No Model.)

(Application filed Feb. 26, 1898.)



Witnesses:
Walter E. Lombard
Fred S. Greenhof

Inventors: Horace Wyman,
Randolph Crompton,
by Leroy Mayon, Attys

UNITED STATES PATENT OFFICE.

HORACE WYMAN AND RANDOLPH CROMPTON, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO THE CROMPTON & KNOWLES LOOM WORKS, OF SAME PLACE.

LOOM.

SPECIFICATION forming part of Letters Patent No. 609,257, dated August 16, 1898.

Application filed February 26, 1898. Serial No. 671,825. (No model.)

To all whom it may concern:

Be it known that we, HORACE WYMAN and RANDOLPH CROMPTON, both of Worcester, county of Worcester, State of Massachusetts, have invented an Improvement in Stop-Motions for 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 in looms relates to that class of filling-changers wherein a feeler carried by the shuttle is protruded therefrom when the filling on the bobbin has been exhausted therefrom to a predetermined point, the projection of the end of said feeler from said shuttle causing it as it enters the shuttle-box to meet and actuate a device which operates a thread-catcher, causing it to move or put the filling-thread in such position that it will not be in position as the lay moves forward to meet the usual filling-fork, so that the said fork, it not being tipped, will be operated by or through any usual hammer or devices commonly employed for that purpose.

The filling-fork when operated may either serve to start into operation an auxiliary or spare shuttle-feeder of the character described in Patent No. 600,490, dated March 8, 1898, or it might be made to operate any usual device to put new filling into the shuttle.

We believe that we are the first to employ a thread-catcher occupying a position near the usual filling-fork, and to so control its time of operation and direction of movement by or through the quantity of filling on the bobbin that the filling-thread, although present in the shed, may be engaged and put into its inoperative position, thereby enabling the filling-fork to be moved as when the filling fails, and hence the invention to be herein described is not intended to be limited to the particular construction of the catcher or the feeler, nor to the particular location of the catcher or the feeler, nor to the particular form of actuating devices intermediate said feeler and said catcher, nor to whether the catcher when operated to insure the movement of the filling-fork and its slide will effect either a change of shuttle or of filling in the shuttle.

Figure 1, in top or plan view, shows a part

of a loom at the filling-fork end with our improvements added in our preferred form; and Fig. 2 is a partial left-hand view of the parts shown in Fig. 1.

The loom-frame A, the breast-beam B, the lay C, the binder C', pivoted at C², the spring C³, acting on said binder, the binder-finger C⁴, the lay-connecting rod D, the filling-fork a, pivotally mounted at a' in the filling-fork slide or carrier a², free to slide in a guide-box b, attached to the breast-beam, the said filling-fork having a downturned heel a³, adapted to be struck by a vibrating hammer c, and the arm c¹⁰, engaging a notch in the end of the filling-fork slide, are and may be all substantially as described in United States Patent No. 600,490, dated March 8, 1898, and in practice in the loom herein to be described said arm c¹⁰ may be attached to a rock-shaft, as provided for in said patent, so that the rocking of said shaft may start into operation a suitable auxiliary or spare shuttle-feeder substantially such as described in said patent, and the change of the shuttle then in the shuttle-box at the level of the race of the lay may then be effected as provided for in said patent.

The shuttle E has a suitable bobbin or filling carrier e, containing filling e'. The rear side of the shuttle is grooved at e², and the bottom of said groove for a part of its length is cut through, as at e³, into the bobbin-receiving space of the shuttle. The shuttle has a pin or pivot f, on which is mounted a feeler f', shown as a lever of the first order, one end of the feeler having preferably a rounded end or heel 2 to contact with the filling wound on the bobbin. A spring f², held in said groove by a suitable screw f³, bears on said feeler and acts normally to keep said heel end 2 against the filling on the bobbin, a stop 3, carried by the shuttle, however, limiting the movement of said feeler toward the bobbin.

When the filling has been exhausted to a predetermined point, so that it is time to provide the raceway of the lay with another shuttle or to put new filling in the shuttle, then the feeler by its near approach to the bobbin by reason of the filling having been nearly unwound therefrom so changes the position of said feeler on its pivot f as to move outwardly the end 4 of the feeler, so that as the

shuttle enters the shuttle-box at that end of the lay nearest the filling-fork said feeler will meet the actuating device g , shown as a sliding bolt-like block arranged within the space inclosed by a suitable case g' , shown as secured by suitable screws g^2 to a shuttle-alining wall g^3 , erected on the top of the lay, at one side of the slot therein in which operates the usual picker-stick G , said wall being held in place by a suitable bolt g^4 .

The actuating device has a stud g^5 , which receives over it one end of a connecting-rod h , having its opposite end attached by a bolt h' to and actuating the thread-catcher, said catcher consisting of an elbow-lever h^2 , pivoted at h^3 and having an arm h^4 , which is extended across the path traversed by the shuttle in its flight across the lay.

Normally when the bobbin has on it the desired quantity of filling the end 4 of the feeler stands in the opening e^3 in the side of the shuttle, and the actuating device g under the stress of the spring m keeps the end of said device g against the end 5 of the case g' , and in such condition the arm h^4 stands in a groove m' in the upper side of the raceway of the lay.

In operation the filling having been unwound from the bobbin sufficiently to enable the end 4 of the feeler to project far enough to meet the actuating device g said feeler as the shuttle enters the shuttle-box will act on and push, slide, or move the said device, as shown in Fig. 1, and will raise the catcher into the position best shown in Fig. 2, moving or lifting the filling n , so that as the lay goes forward the filling, although in the shed, will be lifted or so placed that it will not strike the filling-fork, and consequently said fork will not be tipped, and the hammer c will meet the heel of the fork and push the slide or carrier across the breast-beam to move the arm for the purposes set forth.

We have shown the filling-fork slide as limited in outward movement by means of an arm o , mounted on the casting o' , attached to the breast-beam, said casting having a slot o^2 , provided with a suitable notch to receive and hold the usual shipper-handle o^3 .

The release of the shipper-handle by hand enables the shipper-lever o^4 to be moved in usual manner to effect the stopping of the loom when desired.

When the filling is lifted in the shed so that it will not meet the fork, said filling occupies what we designate as its "inoperative" position.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a loom, a lay, a filling-fork, and means to actuate it, combined with a thread-catcher, and operative means therefor whereby the said thread-catcher when actuated will engage the filling lying along the raceway of the loom in the shed and put said filling into such position that it will fail to tip the filling-

fork, leaving the latter in position to be engaged by its actuating means, substantially as described.

2. In a loom, a lay, a filling-catcher carried thereby, and actuating devices to move it to engage the filling laid in the shed, combined with a shuttle and a feeler, controlled as to its position by the quantity of filling on the bobbin in said shuttle, said feeler, when the filling has been exhausted from said bobbin to a predetermined extent, meeting and moving said actuating devices to turn the thread-catcher to engage the filling-thread and put it into its inoperative position, substantially as described.

3. The lay, its shuttle-box, having an alining-wall, a filling-catcher, actuating devices; a shuttle having mounted on it a feeler controlled as to its position by the quantity of filling on the bobbin, a spring to keep one end of said feeler against the filling on said bobbin, combined with connecting means between said actuating devices and said filling-catcher, said feeler meeting said actuating devices as the shuttle enters the shuttle-box and moving said catcher to put the filling then in the shed into its inoperative position, substantially as described.

4. In a loom, the following instrumentalities, viz: a filling-fork, its carrier or slide, an arm adapted to be actuated by said slide, a lay having at one end a shuttle-box, a shuttle, a filling-catcher carried by said lay and occupying a position normally in a transverse space at the upper side of the raceway of the lay to be crossed by the filling laid in the shed, and means set in motion by said shuttle to operate said filling-catcher and put the filling in a position where though present in the shed it will not strike said filling-fork, and means to engage said filling-fork and move it and its slide, substantially as described.

5. In a loom the following instrumentalities, viz: a filling-fork, its carrier or slide, an arm adapted to be actuated by said slide; a lay having at one end a shuttle-box, a shuttle, an alining-surface, a thread-catcher, actuating devices carried by said alining-surface, a connection between said actuating devices and said thread-catcher; a shuttle having a feeler which as the filling is nearly exhausted from the bobbin in said shuttle puts said feeler into position to meet said actuating devices and operate said thread-catcher to put the filling into position where it will not meet and tip the filling-fork; and means to thereafter engage the filling-fork and operate it, and its slide, as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HORACE WYMAN.

RANDOLPH CROMPTON.

Witnesses:

JUSTIN A. WARE,

SAMUEL B. SCHOFIELD.