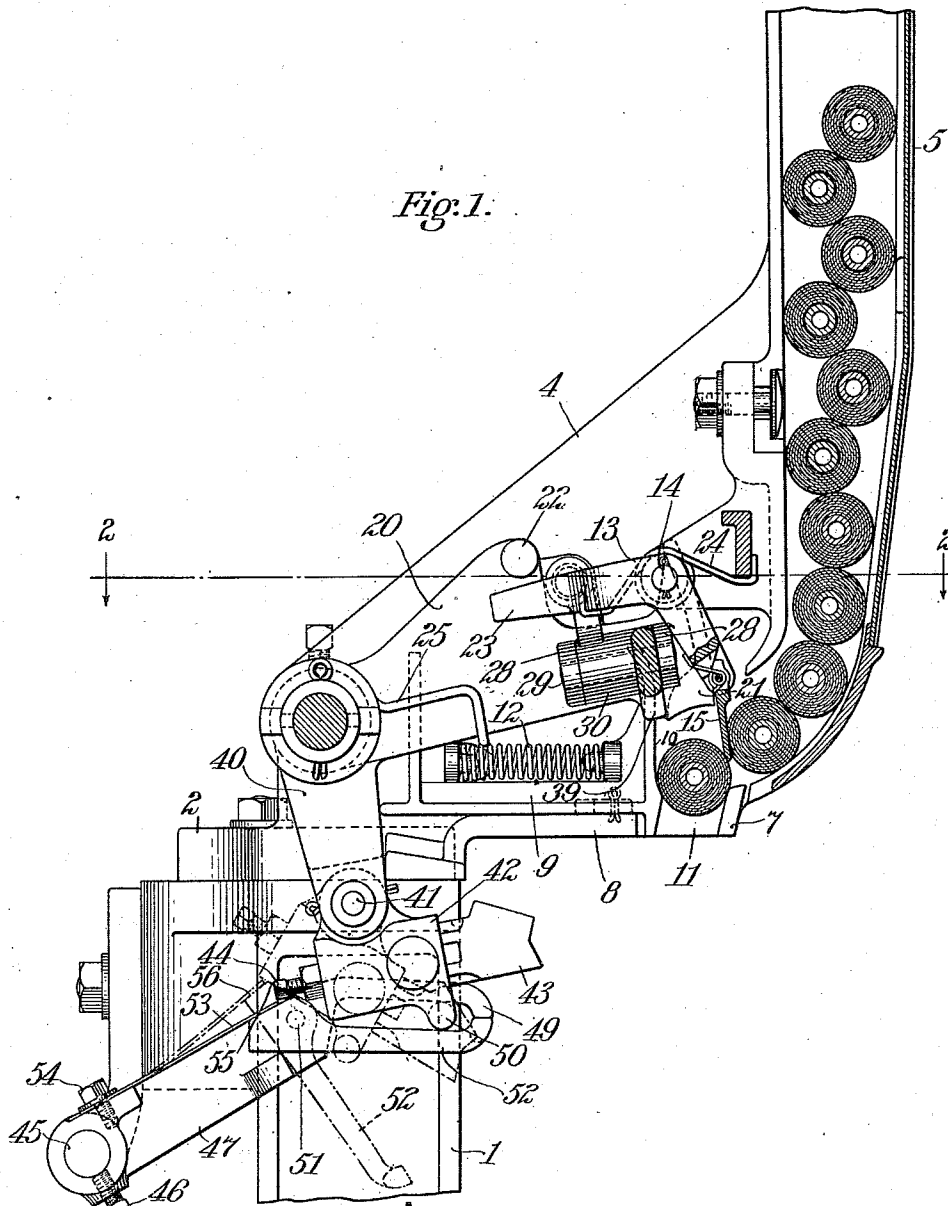


J. NORTHROP.
FILLING REPLENISHING MECHANISM.
APPLICATION FILED OCT. 23, 1909.

973,133.

Patented Oct. 18, 1910.

2 SHEETS-SHEET 1.



Witnesses:

Amelia M. Rose
Marion F. Kimball

Inventor:
Jonas Northrop.
by Robt. A. Hains.
Att'y.

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2 SHEETS—SHEET 2.

Fig. 2.

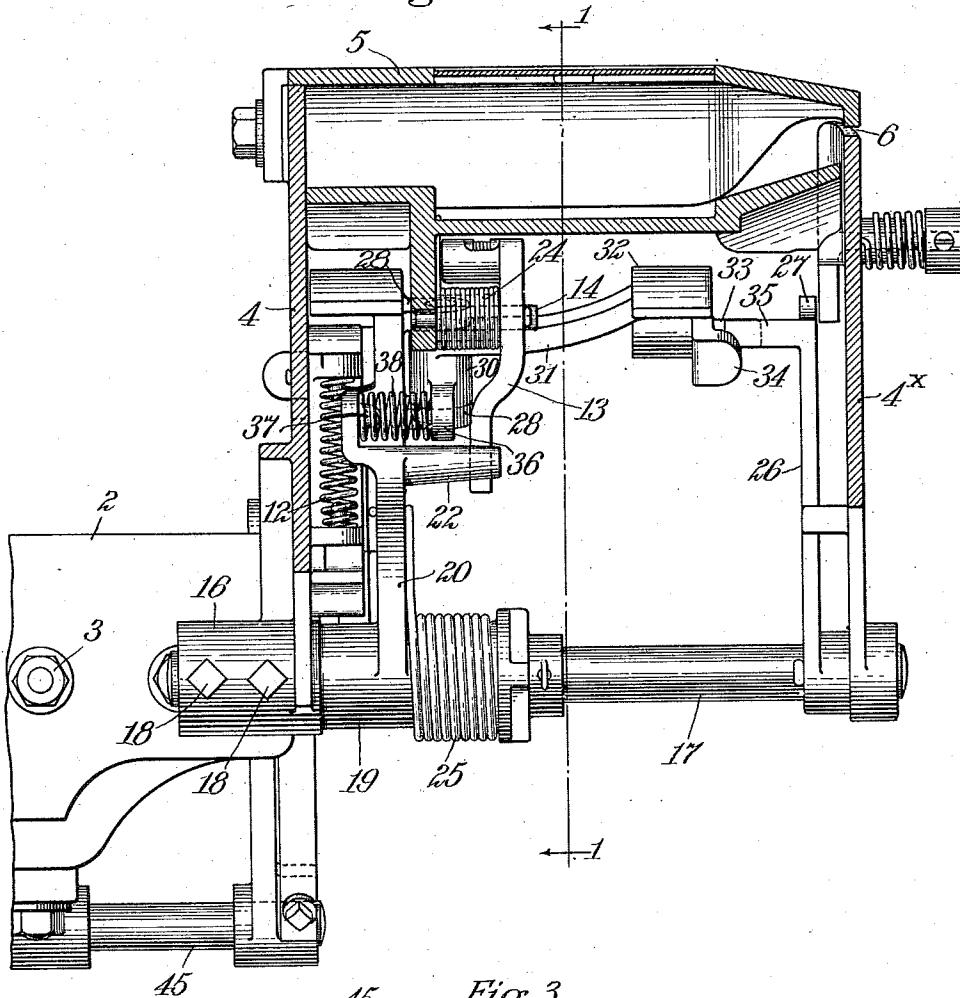
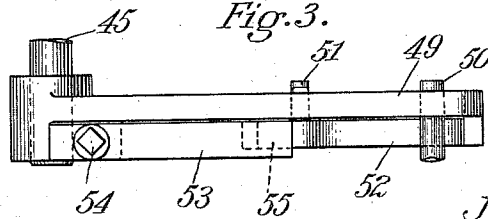


Fig. 3.



Witnesses:

Amelia W. Ross
Marion D. Kimball

Inventor:
Jonas Northrop
by Robt. D. Harris
Atty.

UNITED STATES PATENT OFFICE.

JONAS NORTHPROP, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO WILLIAM F. DRAPER, OF HOPEDALE, MASSACHUSETTS; CLARE H. DRAPER AND OLIVER H. LANE EXECUTORS OF SAID WILLIAM F. DRAPER, DECEASED.

FILLING-REPLENISHING MECHANISM.

973,133.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed October 23, 1909. Serial No. 524,152.

To all whom it may concern:

Be it known that I, JONAS NORTHPROP, a citizen of the United States, residing at Hopedale, in the county of Worcester and State of Massachusetts, have invented an Improvement in Filling-Replenishing Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The invention to be hereinafter described relates to looms and more particularly to looms of the filling replenishing type.

Looms of the filling replenishing type are well known and in common use, and are ordinarily provided with a transferrer to transfer a filling carrier from the supply to the weaving elements when the filling becomes broken or reaches a condition making a transfer desirable. The transferrer is ordinarily controlled by a train of mechanism including a detector of some kind, which, when it detects a condition of filling that renders a fresh supply desirable, causes the train of mechanism to assume operative relation with respect to a moving part of the loom and effect a transfer.

It is desirable that the transferrer engage the filling carrier to be transferred near the base and near the tip, but in such construction if the shuttle fails to be properly boxed, as, for instance, should it fail to enter the box sufficiently or rebound therefrom, the tip of the filling carrier may strike the end of the shuttle and be prevented from entering the shuttle chamber, in which case the transferrer or some other part is liable to be broken. It is likewise desirable at times to render the transferring mechanism inoperative, as, for instance, during adjustment by the loom fixer when a shuttle is found to be not properly boxing or for other reasons, as will be readily understood by those skilled in the art.

With these matters in view, the aims and purposes of the present invention are to provide means for preventing breakage of the transferrer or other part when the shuttle fails to be properly boxed at the time of transfer and to furnish simple and effective means whereby the transferring mechanism may be readily made inoperative at the will of the attendant or others, all of which will best be understood from the following de-

scription and accompanying drawings of one form of means for putting the invention into practical effect.

In the drawings: Figure 1 is a section on the line 1—1 of Fig. 2 showing one form of transferring mechanism associated with the present invention; Fig. 2 is a section on the line 2—2 of Fig. 1; and Fig. 3 is a detached detail showing the latch controller.

Although the present invention is generally applicable to any form of filling replenishing loom, it has been shown herein as applied to the character of loom and filling replenishing mechanism set forth in my prior application Serial No. 516,240, filed September 4, 1909.

The loom frame 1 having the breast beam, the bracket 2 secured to the loom frame by the bolts 3 and having the webs 4 and 4^x for supporting a hopper 5, the slot 6 for the passage of the filling ends, the back wall 7 of the throat 11, the slide 9 movable on the web or shelf 8 and having the front wall 10, the spring 12 acting to hold the slide in forward position, the filling carrier positioner 13 mounted at 14 and having the carrier engaging end 15, and the means for operating said positioner may be as fully set forth in the said prior application, or such parts may be modified as desired, it being understood that the invention is not circumscribed by these details.

Mounted in a bearing 16 supported by the bracket 2 is the stud 17 preferably secured in said bearing by screws 18, or otherwise.

Loosely mounted on the stud 17 is the hub 19 of the transferrer, the arm 20 of which projects from said hub and has a carrier engaging end 21, Fig. 1, substantially as in the application referred to. The arm 20 carries a pin 22 which acts upon the end 23 of the filling carrier positioner, a spring 24 normally acting to lift said arm 23, substantially as in said application.

The transferrer arm 20 is normally held in raised position, as indicated in Fig. 1, by means of a spring, the tension of which may be adjusted by means of adjustable connection with the stud 17, as shown or by other suitable means.

Loosely mounted on the stud 17 is the arm 26, the end 27 of which acts as a stop for the tips of the filling carriers, and when the transferrer is depressed, as will herein-

after more fully appear, this end of the arm 26 drops upon the top of the shuttle box and its front edge acts at this time as a guide for the tip of the carrier as it moves into the shuttle chamber, substantially as in the said application.

Projecting from the transferer arm 20 are the lugs 28, 28, between which extends a pin 29 on which is mounted the hub portion 30 of the tip engaging member of the transferer. This tip engaging member in the form of the invention shown comprises an arm 31, the outer end of which has a head 32 to engage the tip portion of a filling carrier when it is to be transferred to the shuttle, said head being also provided with the lugs 33 and 34 to coact with the lug 35 projecting from the end 27 of the arm 26, which for identification may be termed the tip stop and guide.

Extending from the hub 30 of the tip engaging member 31 is a lug 36 between which and a seat 37 on the transferer arm 20 extends the spring 38 normally acting to separate the lug 36 and seat 37, a suitable stop 39, Fig. 1, on the member 31 coacting with a similar stop on the transferer arm 20 to limit movement of said member 31 responsive to the spring 38. From the construction thus far described it will be noted that upon downward movement of the transferer arm 20 to transfer a filling carrier from the source of supply to a shuttle, the tip engaging member will also move in the same direction, but should the tip of the filling carrier meet an obstruction or be prevented from movement in response to the action of the transferer, the tip engaging member will yield and prevent breakage. As the transferer returns to initial position, the spring 38 will restore the tip engaging member to proper position with respect thereto. Such obstruction to downward movement of the tip member of the transferer may be caused by the shuttle not having entered the shuttle box sufficiently or by its having rebounded therefrom, in either of which cases the tip of the carrier may strike the end portion of the shuttle, but in any event, regardless of the cause which prevents the tip of the carrier from responding to the action of the transferer, the tip member is yieldingly held so that it may yield and prevent breakage when its movement is obstructed.

Improper boxing of the shuttle may call for the attention of the loom fixer, and during the time he is adjusting the parts to secure proper action it is desirable that the filling replenishing mechanism be rendered inoperative.

Extending downward from the hub 19 of the transferer is the arm 40, Fig. 1, to which at 41 is pivotally connected the latch carrier 42 carrying the latch 43, suitable means,

such as the adjusting screw 44, being provided for properly positioning the latch in its carrier for cooperation with the usual bunter carried by the lay.

Adjustably secured to the usual transverse shaft 45 by the set screw 46 is the latch actuator 47, adapted to raise the latch 43 into the path of the usual bunter when the transverse shaft 45 is turned under the direction of the usual detecting mechanism, as will be readily understood.

Extending from the upper portion of the actuator 47 is a part 49, Fig. 1, and pivotally connected at 51 to the actuator is a finger 52 normally held in full line position, Fig. 1, 80 by a spring 53 secured to the actuator by a securing screw 54, or otherwise. The free portion of the spring is adapted to bear upon either the shoulder 55 or the shoulder 56 of the finger 52, the construction being such that when the finger 52 is in full line position, Fig. 1, it is held in such position by the spring 53, a pin 50 projecting from the latch carrier extending between the part 49 and finger 52. With the parts in this related condition, if the transverse shaft is turned contra-clockwise viewing Fig. 1, it is evident that the actuator will turn the latch carrier on its pivotal support 41 and place the latch 43 in position to meet the bunter, as usual; but should the finger 52 be turned into dotted line position, Fig. 1, into which position it may be moved by the attendant or loom fixer by simply overcoming the resistance of the spring 53 on the shoulder 55, it is equally evident that any upward movement of the actuator will fail to turn the latch carrier, so that notwithstanding the detector may indicate a condition of felling requiring replenishment and turn the transverse shaft, the latch will not be placed in position to be actuated. The parts may thus remain in inoperative relation while the loom fixer is adjusting the loom parts or experimenting with the loom to secure the desired action thereof and proper boxing of the shuttle, and may then be returned to operative relation by simply swinging the finger 52 from dotted line to full line position, Fig. 1.

Within the province of one skilled in the art, the particular means, herein set forth as one embodiment of the invention, may be variously modified, it being understood that the invention is generic in character with reference thereto and is set forth by the claims in its true scope.

What is claimed is:

1. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer having a member to engage the filling carrier adjacent the base portion and a member to engage the filling carrier adjacent the tip portion, said members being relatively yielding to permit relative movement when the filling carrier movement is

obstructed, and means for actuating the transferer.

2. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer having a part to engage the filling carrier near one end and a member to engage the filling carrier near the other end, said member being mounted to yield during transferring movement should the filling carrier movement be obstructed, and means for actuating the transferer.

3. In a filling replenishing loom, means for supplying filling carriers, in combination with a transferer having a part to engage a filling carrier near one end and a part to engage a filling carrier near the opposite end to effect the transfer, one of said parts being yieldingly mounted with relation to the other part of the transferer should the filling carrier movement be obstructed.

4. In a filling replenishing loom, a transferer comprising an arm having a part to engage the filling carrier near the base portion thereof, and a tip engaging member yieldingly mounted with respect to said arm.

5. In a filling replenishing loom, a transferer comprising an arm having a part to engage the filling carrier near the base portion thereof, a tip engaging member mounted on said arm, and a spring normally acting on the tip engaging member to yieldingly maintain it in operative position with relation to the base engaging part of the transferer.

6. In a filling replenishing loom, a transferer comprising an arm having a head portion to engage the filling carrier near one end, an arm pivotally mounted on said first-mentioned arm to engage the filling carrier near the other end, and a spring disposed between said arms for normally maintaining said arms in position with relation to each other.

7. In a filling replenishing loom, a transferer comprising two arms, each having a part to engage a filling carrier, means for actuating the transferer to effect the transfer, and means acting on one of said arms to permit it to yield when its movement is obstructed.

8. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer having an arm provided with a part to engage a filling carrier near the base thereof, a tip engaging member pivotally mounted on said arm and having a part to engage the filling carrier near the tip thereof, a spring interposed between said arms to permit them to yield relatively, a latch for operating the transferer, and a latch controller.

9. In a filling replenishing loom, the combination of filling carrier supplying means,

a transferer for transferring filling carriers, a latch for operating the transferer, a controller for said latch, and means for operatively connecting and disconnecting the controller and latch to permit the loom to be run without transferring filling carriers.

10. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer for transferring filling carriers, a transverse shaft, connections between the transverse shaft and transferer, and means mounted for movement into and out of operative position for rendering said connections operative or inoperative as desired.

11. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer, a latch movable into and out of operative position, a controller for moving the latch into operative position to cause the transferer to transfer a filling carrier, and means mounted for movement into and out of operative position for temporarily disconnecting the operative relation between the latch and controller.

12. In a filling replenishing loom, the combination of filling carrier supplying means, a transferer for transferring filling carriers, a latch, a controller, and means carried by one of said parts and movable into and out of operative position for rendering said transferer inoperative to permit the loom to run without transferring filling carriers.

13. In a filling replenishing loom, the combination of a transferer, mechanism for operating said transferer when the supply of filling is to be changed, and means mounted for movement into and out of operative position in the train of said mechanism to permit the loom to run without operating the transferer when said means is moved to inoperative position.

14. In a filling replenishing loom, the combination of a filling carrier supplying means, a transferer, a latch connected therewith and to operate the same, and a controller having a finger movable into and out of operative position.

15. In a filling replenishing loom, a transferer, a controller for determining the operative and inoperative condition of the transferer, a finger pivotally mounted to operatively connect and disconnect the controller and transferer, and means for holding the finger in either position.

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

JONAS NORTHROP.

Witnesses:

EVERETT S. WOOD,
WENDELL WILLIAMS.