

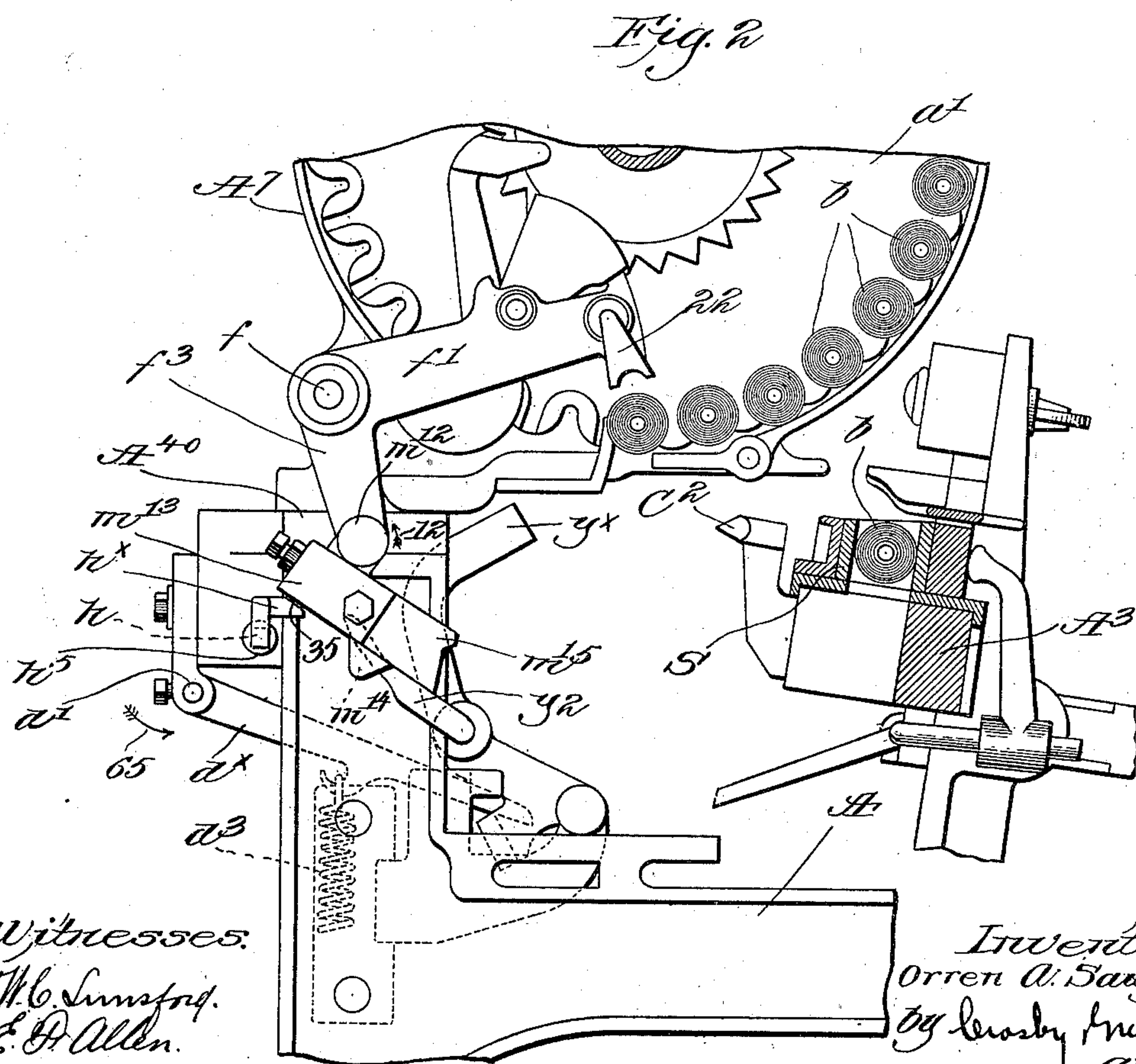
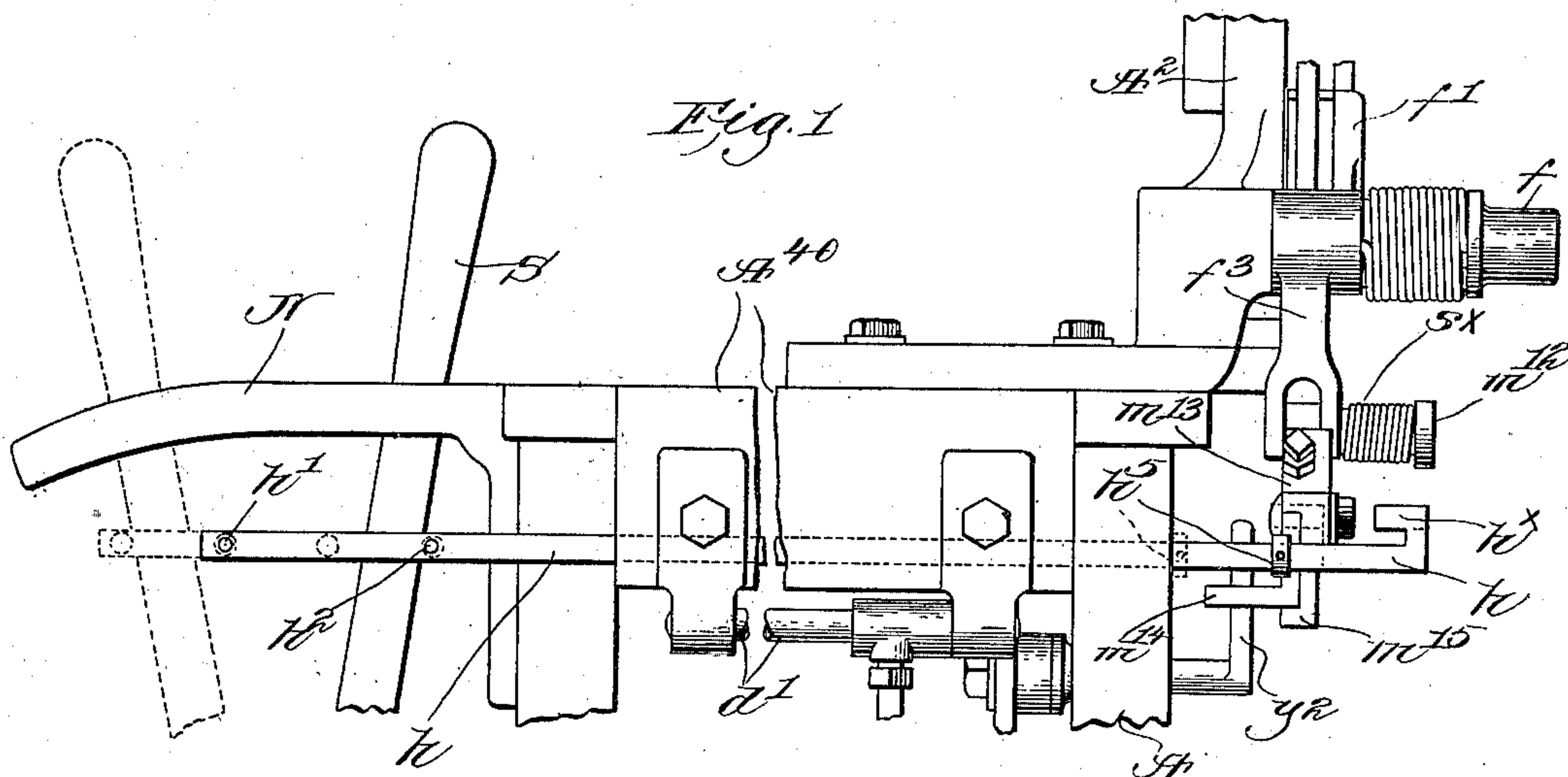
No. 726,576.

PATENTED APR. 28, 1903.

O. A. SAWYER.
FILLING REPLENISHING LOOM.

APPLICATION FILED JAN. 19, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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FILLING-REPLENISHING LOOM.

SPECIFICATION forming part of Letters Patent No. 726,576, dated April 28, 1903.

Application filed January 19, 1903. Serial No. 139,501. (No model.)

To all whom it may concern:

Be it known that I, ORREN A. SAWYER, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented an Improvement in Automatic Filling-Replenishing Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters
10 on the drawings representing like parts.

This invention relates more particularly to looms provided with means for automatically replenishing the filling at the proper time—as, for instance, when the filling in the running shuttle fails or becomes exhausted to a predetermined extent. An automatic filling-replenishing loom of this general type forms the subject-matter of United States Patent No. 529,940, a fresh supply of filling being
20 inserted automatically in the running shuttle upon the occurrence of certain changes in the filling therein. In such looms it sometimes happens that when the loom is at rest and is turned over by hand the movement of the lay will effect a transfer of filling to the shuttle, and the weaver must either effect the threading of the latter by hand manipulation before starting the loom or upon starting up another filling-supply will be transferred to the shuttle, because of failure of the first one to properly thread. Thus there is an unnecessary operation of the replenishing mechanism and depletion of the filling feeder or hopper, and, furthermore, the shuttle may
35 not be in the replenishing shuttle-box, or it may be improperly positioned therein for replenishment when the replenishing mechanism is operated.

The present invention has for its object
40 the production of very simple and efficient means for preventing the operation of the filling-replenishing mechanism when the loom is at rest—i. e., when the shipper is in stopping position and the power is off the loom.

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

Figure 1 is a front elevation, centrally
50 broken out, of a portion of a loom provided

with automatic filling-replenishing mechanism with one embodiment of the invention applied thereto; and Fig. 2 is a right-hand side elevation thereof, the filling-feeder of the replenishing mechanism and the lay and replenishing shuttle-box being shown in transverse section.

The loom-frame A, the lay A³, provided with a bunter C², the breast-beam A⁴⁰, supporting a stand A⁷, which carries the filling feeder or hopper, comprising, essentially, two parallel and rotatable disks, only one of which, as A', is shown in Fig. 2, the transferrer f', fulcrumed on the horizontal fixed stud f and having a tip-engaging device 22 for the filling-carriers b, the arm f³, depending from the transferrer, the notched holding-plate N, Fig. 1, for the shipper S, the latter being the only member of the stopping means herein shown, and the controlling or operating rock-shaft d' are and may be all substantially as in United States Patent No. 664,790, dated December 25, 1900. As in said patent, a headed rocker-stud m¹² is mounted on the end f³ of the transferrer, and by a spring s^x (see Fig. 1) the stud is turned at times in the direction of the arrow 12, Fig. 2, an arm m¹³, secured to the stud, having a lateral lug m¹⁴, against which bears the branch y² of the shuttle-feeler y^x. The rock-shaft d' has fast upon it a rocker-arm d^x, held by a spring d³ in the position shown in Figs. 1 and 2 when the loom is running properly, and at such time a notched dog m¹⁵, which is adjustably secured to the arm m¹³, is held out of the path of the bunter C².

When filling replenishment is to be effected, the rock-shaft d' is turned in the direction of the arrow 65, Fig. 2, lifting the arm d^x, and at such time the spring s^x is free to swing the shuttle-feeler rearwardly across the race-way as the lay beats up, and at the same time the arm m¹³ and dog m¹⁵ swing upward on the stud m¹² as a fulcrum, bringing the dog into position to be engaged by the bunter C². The continued forward movement of the lay after such engagement operates to rock the transferrer on its fulcrum f and transfer a filling-carrier from the feeder or hopper to the shuttle, all in well-known manner.

In order to prevent the operation of the replenishing mechanism when the loom is at rest, such operation being effected by turning the loom over by hand, means are provided to prevent the turning of the dog m^{15} into the path of the bunter C^2 when the shipper is in stopping position.

In Fig. 1 the stopping position of the shipper is shown in dotted lines, and the full lines indicate the running position of the shipper. A slide rod or bar h is mounted in the loom-frame below the breast-beam, as shown in Figs. 1 and 2, and extended from the replenishing side of the loom to the opposite or shipper side, said slide-rod at the shipper side having two rearwardly-extended pins h' and h^2 secured to it and extending at opposite sides of the shipper, as clearly shown in Fig. 1. At its opposite end the slide-rod is upturned and turned rearwardly to present a detent h^x , provided with a beveled rear face 35. The beveled face is substantially parallel to the under side of the arm m^{13} when the latter is in normal position, as will be seen by reference to Fig. 2, and when the shipper is in running position the detent is at one side of said arm. The slide rod or bar h is so located that when it is moved longitudinally to the left the detent h^x will be brought beneath the arm m^{13} near its upper or forward end. When the detent is in such position, it will be manifest that the spring s^x cannot operate to turn the stud m^{12} , the arm, and its attached dog m^{15} , even when the controlling rock-shaft d' is turned in the direction of the arrow 65. Consequently when the detent is in its operative position the dog cannot be moved into the path of the bunter C^2 and the replenishing mechanism cannot be actuated. The movement of the detent into operative position is effected by or through the shipper when the latter is released from its holding-notch in the plate N , for at such time the shipper will engage the pin h' and will move the slide-rod h to the left far enough to bring the detent immediately underneath the arm m^{13} , as described. When, however, the shipper is moved into running position, as shown in full lines, Fig. 1, its inner edge will engage the pin h^2 and will slide the rod h to the right, moving the detent into the position shown in Fig. 1. The distance between the pins h' and h^2 permits some lost motion between the slide-rod and the shipper, as the movement of the latter in one direction or the other is greater than is necessary to move the detent into or out of operative position.

To prevent movement of the slide-rod to the left, viewing Fig. 1, when the shipper is in stopping position, so that the detent would be moved to the left past the arm m^{13} , a collar h^5 is secured to the slide-rod, as shown in Fig. 1, to bear against the adjacent part of the loom, in which said rod is slidably mounted. It will be manifest that so long as the shipper is in its running position the detent cannot be accidentally or otherwise moved into

operative position to prevent the actuation of the replenishing mechanism, and it will be equally manifest that movement of the shipper to stopping position will render the detent operative automatically, so that the replenishing mechanism cannot be actuated so long as the shipper remains in such position.

The invention is not restricted to the precise construction and arrangement shown and described herein, as the same may be modified or rearranged in various details by those skilled in the art without departing from the spirit and scope of the invention, one practical embodiment of which is herein contained.

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

1. In a loom, a device to govern the operation thereof, filling-replenishing mechanism, and means to prevent the operation of the replenishing mechanism, actuated by movement of said device into position to effect stoppage of the loom.
2. In a loom, a device to govern the operation thereof, filling-replenishing mechanism, and detaining means therefor rendered operative by movement of said device to stop the loom and rendered inoperative by movement of said device to start the loom.
3. In a loom, a shipper, automatic filling-replenishing mechanism, and means to prevent the operation thereof when the shipper is in stopping position.
4. In a loom, a shipper, automatic filling-replenishing mechanism, and means controlled directly by or through the shipper to prevent the operation of said mechanism when the shipper is in stopping position and to permit the operation of the said mechanism when the shipper is in running position.
5. In a loom, a shipper, automatic filling-replenishing mechanism, means to prevent its operation, and an operating connection between said means and the shipper, to render said means operative or inoperative when the shipper is moved to stopping or running position, respectively.
6. In a loom provided with automatic filling-replenishing mechanism, means to effect the operation thereof, including a normally inoperative dog, a shipper, and a detent for and to prevent operative movement of the dog, rendered operative by or through movement of the shipper into stopping position.
7. In a loom provided with automatic filling-replenishing mechanism, means, including a slidably-movable detent, to prevent the operation of said mechanism, and a shipper operatively connected with and to positively move the detent into operative position when the shipper is moved to stopping position.
8. In a loom, a shipper, automatic filling-replenishing mechanism, means to prevent the operation thereof when the shipper is in stopping position, and a connection between said means and the shipper to render the

former inoperative by or through movement of the latter to running position.

9. In a loom, a lay provided with a bunter, filling-replenishing mechanism, means to effect its actuation, including a normally inoperative dog movable into the path of the bunter, a shipper for the loom, and a detent rendered operative by or through movement of the shipper into stopping position, to pre-

vent movement of the dog into the path of the bunter.

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

ORREN A. SAWYER.

Witnesses:

WILLIAM CHAS. TROMBLY,
ANNA T. HALLORAN.