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F. G. & J. H. COBB.
FILLING REPLENISHING LOOM.

APPLICATION FILED SEPT. 9, 1904.

Fig: 1.

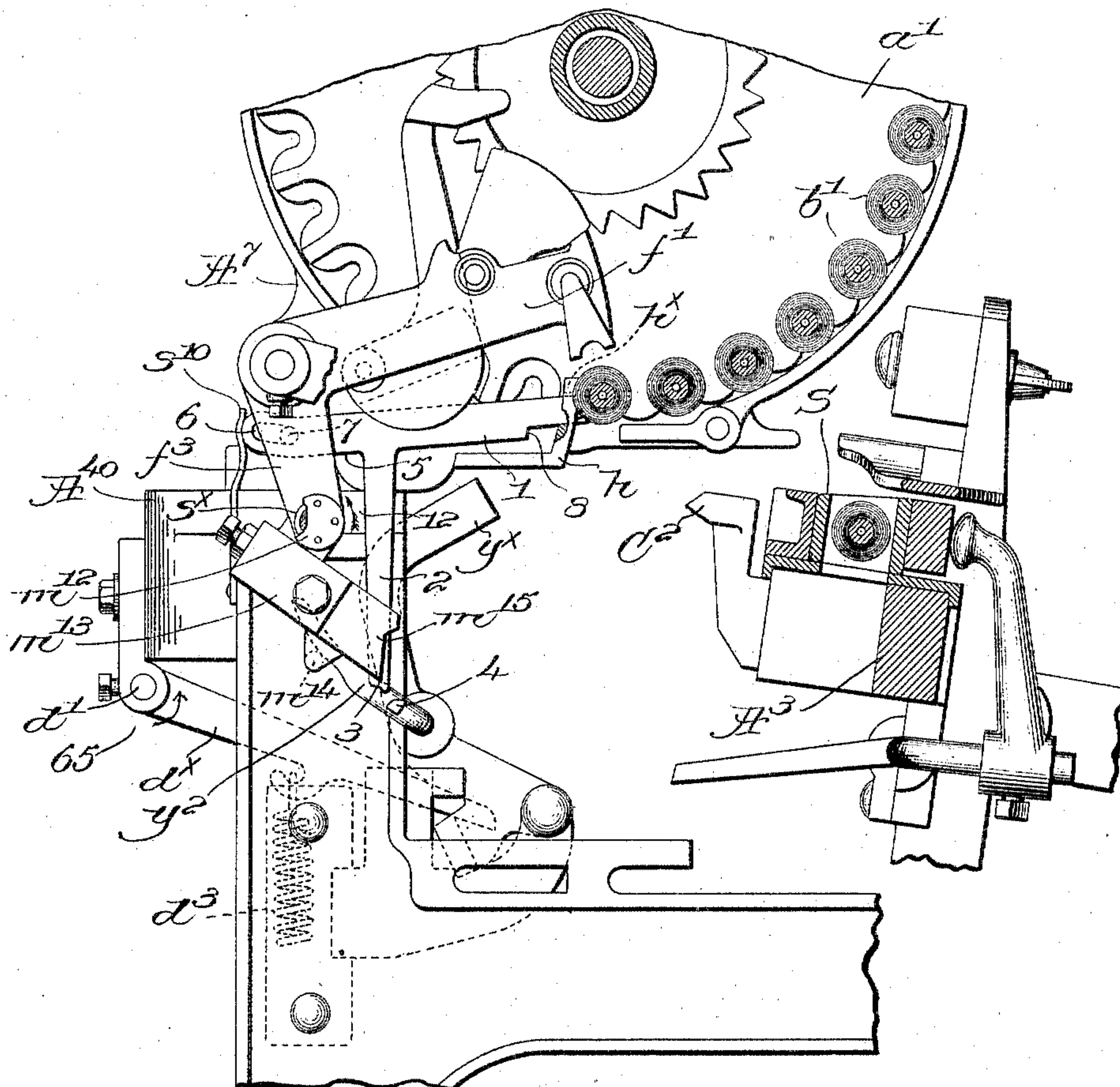
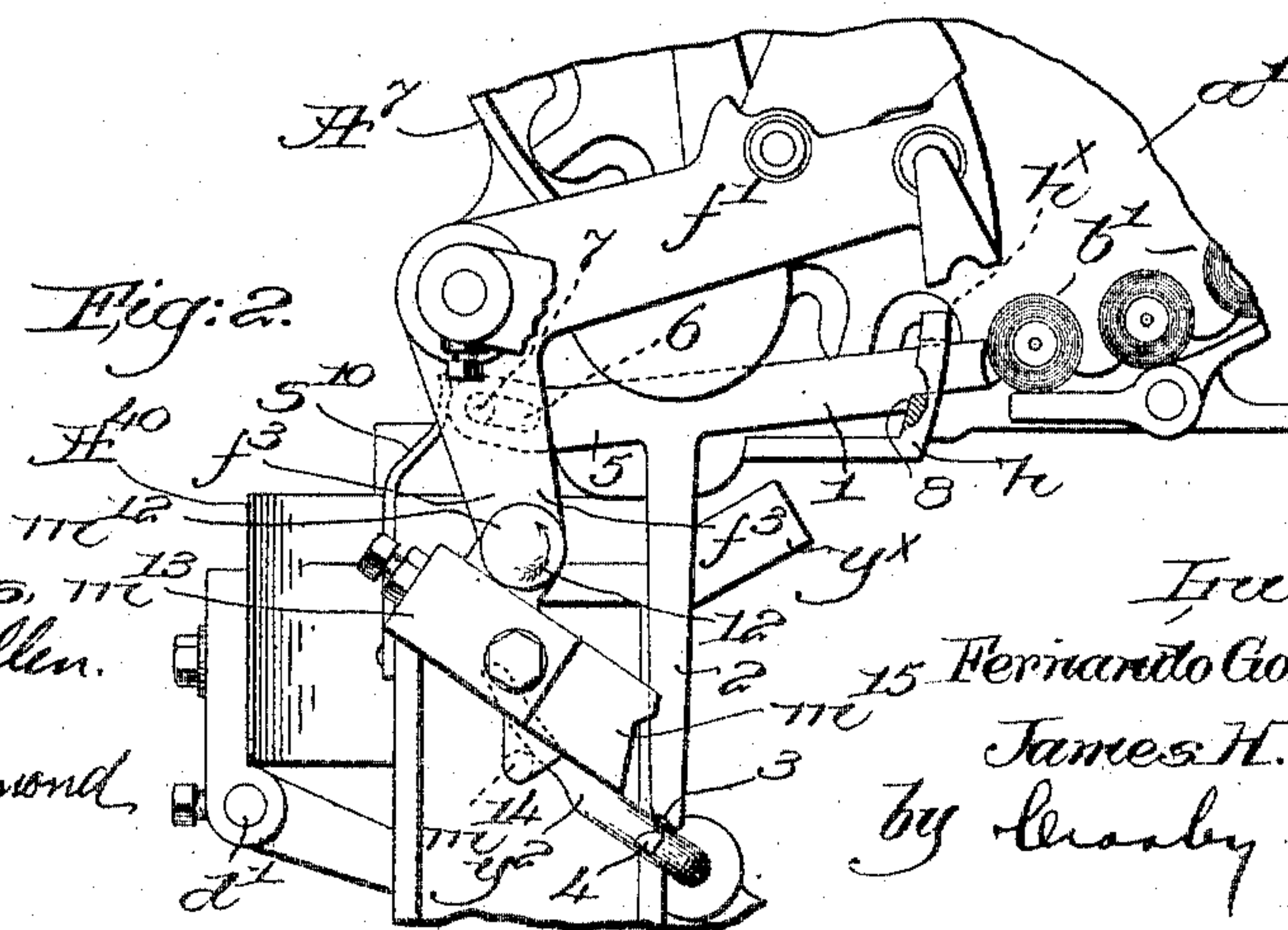


Fig: 2.



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UNITED STATES PATENT OFFICE.

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FILLING-REPLENISHING LOOM.

SPECIFICATION forming part of Letters Patent No. 780,266, dated January 17, 1905.

Application filed September 9, 1904. Serial No. 223,842.

To all whom it may concern:

Be it known that we, FERNANDO GORDON COBB, residing at Huntsville, county of Madison, State of Alabama, and JAMES H. COBB, residing at Belton, county of Anderson, State of South Carolina, citizens of the United States, 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 on the drawings representing like parts.

In looms of the "Northrop" type, as set forth in United States Patent No. 529,940 and others, the running filling is automatically replenished from time to time, either when the filling in the running shuttle breaks or is exhausted or prior to complete exhaustion, as the case may be. The replenishment is effected by inserting a fresh supply of filling in the running shuttle while the loom is running, a reserve supply of filling-carriers being sustained in a hopper or feeder which is intermittently moved to present one filling-carrier after another into position to be removed by a transferrer and inserted in the shuttle. Should the feeder fail to properly present a filling-carrier in accurate position for transfer, the transferrer upon the next operation of the replenishing mechanism would improperly engage such filling-carrier and injure it or some of the adjacent mechanism. Such improper positioning of a filling-carrier does sometimes occur in actual practice, and the object of our present invention is the production of means to at such time prevent the operation of the replenishing mechanism, whereby any tendency to damage or smash filling-carriers or parts of the loom mechanism is completely obviated.

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

Figure 1 is a right-hand side elevation and partial transverse section of a sufficient portion of an automatic filling-replenishing loom of the Northrop type to be understood with one

embodiment of our invention applied thereto, a filling-carrier being shown in proper transferring position; and Fig. 2 is a detail of some of the mechanism shown in Fig. 1, but illustrating the use of our invention to prevent the operation of the filling-replenishing mechanism when a filling-carrier is not in proper position for transfer.

The lay A^3 , having a bunter C^3 , Fig. 1, the breast-beam A^{40} , supporting a stand A^7 , which carries the filling-feeder, comprising two connected and rotatable disks, only one of which, as d' , is shown, the transferrer f' to transfer the filling-carriers b' one by one to the shuttle S , the depending arm f^3 of the transferrer, and the controlling or operating rock-shaft d' may be and are all of well-known construction and operate in usual manner. As in United States Patent No. 664,790, a headed rocker-stud m^{12} is mounted on the arm f^3 , and by a spring s^x (see Fig. 1) it is at times turned in the direction of the arrow 12, an arm m^{13} , secured to the stud, having a lateral lug m^{14} , against which bears the branch y^2 of the shuttle-feeler y^x . The rock-shaft d' has fast upon it a rocker-arm d^x , held by a spring d^3 in the position shown in the drawings when the loom is running properly, and at such time the notched dog m^{15} on the arm m^{13} is held out of the path of the bunter. When filling replenishment is called for, the rock-shaft d' is turned in the direction of the arrow 65, Fig. 1, lifting the arm d^x , and thereby permitting the spring s^x to move the dog m^{15} into position to coöperate with the bunter, so that on the forward beat of the lay the transferrer f' will be operated and a filling-carrier b' will be transferred from the feeder to the shuttle. The intermitting advance movement of the feeder to bring one filling-carrier after another into position may be effected by suitable means, forming no part of our invention, and, as herein illustrated, it is substantially as shown in the patent just referred to. Such advance should bring the filling-carrier next to be transferred into position adjacent the fixed abutment h , as shown in Fig. 1, the abutment acting as a guide for one side of the

filling-carrier during transfer. If the filling-carrier is not so properly positioned, the operation of the replenishing mechanism should not take place, and by reference to Fig. 2 it will be manifest that if a filling-carrier is in the position there shown there would be some damage caused were the transferrer to operate.

In accordance with the present embodiment of our invention we have provided means to prevent the operation of the replenishing mechanism upon failure of a filling-carrier to be properly positioned for transfer, and to this end we have arranged a detent device to at such time prevent movement of the dog m^{15} into position to cooperate with the bunter C^{12} . Such detent means is preferably made as a casting having a head comprising an elongated extension 1, an opposite arm 5, and a depending body portion or detent proper, 2, provided at its lower end with a notch 3 to cooperate with a lug 4 on the branch y^2 when the detent device is operative. The arm 5 has an elongated slot 6 to loosely receive a stud 7, projecting laterally from the stand A^7 , while the extension 1 is slidably mounted in a slot h^x made in the abutment h , the detent 2 being thus suspended and movable toward the front or back of the loom. A light spring s^{10} , secured at one end to the loom-frame, bears at its free end on the outer end of arm 5 and tends to push the whole detent device to the right, movement in that direction being limited by engagement of the abutment h by a shoulder 8 on the extension 1, as in Fig. 2. As therein shown, the detent 2 is just above the lug 4, so that if the rock-shaft d' is turned to permit the spring s^x to act the branch y^2 will be lifted until the lug 4 enters the notch 3 of the detent 2, and thereby the movement of the dog m^{15} into operative position is prevented. When, however, the feeder properly presents a filling-carrier for transfer, as shown in Fig. 1, said filling-carrier at its head end engages the end of the extension 1 and pushes the detent device into the position shown in Fig. 1, rendering it inactive, for the detent 2 is then moved forward out of the path of movement of the lug 4 when the branch y^2 swings upward.

The detent device is always operative until it is rendered inoperative or inactive by or through the movement of a filling-carrier into proper transferring position. Failure to properly present a filling-carrier may be caused by sticking or improper movement of the feeder or the mechanism for effecting its intermitting movement or because of carelessness in the loading of the feeder by the attendant. It will be manifest that so long as the detent device remains operative no operation of the transferring mechanism can take place, but the loom will be stopped by or through the filling-fork mechanism when the absence of the filling is detected upon one or more picks, the weaver knowing that trouble must exist at the

replenishing mechanism when he finds that the operation thereof has been called for and the loom stops.

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

1. In a loom, automatic filling-replenishing mechanism, including an intermittingly-movable feeder to contain a plurality of filling-carriers, and means to prevent the operation of said mechanism upon failure of the feeder to properly position a filling-carrier for transfer.

2. In a loom, automatic filling-replenishing mechanism, including an intermittingly-movable feeder to contain a plurality of filling-carriers, and a fixed abutment to guide a filling-carrier when transferred, combined with means to prevent the operation of said mechanism upon failure of the feeder to properly position a filling-carrier adjacent said abutment.

3. In a loom, automatic filling-replenishing mechanism, including an intermittingly-movable feeder to contain a series of filling-carriers, and a transferrer to transfer a filling-carrier when properly positioned by the feeder, combined with means, rendered inactive by or through a filling-carrier when properly positioned, to prevent the operation of the transferrer.

4. In a loom, automatic filling-replenishing mechanism, including an intermittingly-movable feeder to contain a series of filling-carriers, and a transferrer to transfer a filling-carrier when properly positioned by the feeder, combined with a detent device to prevent the operation of the transferrer and having a part in the path of and to be moved by a filling-carrier when properly positioned for transfer, to thereby render the detent device inoperative.

5. In a loom, a lay having a bunter, filling-replenishing mechanism, including an intermittingly-movable feeder to contain a plurality of filling-carriers and position them one by one for transfer, controlling means for said mechanism, including a dog movable into position to cooperate with the bunter when the operation of said mechanism is called for, and a detent to prevent cooperation of the dog and bunter upon failure of the feeder to properly present a filling-carrier for transfer.

6. In a loom, automatic filling-replenishing mechanism, including an intermittingly-rotatable feeder to contain filling-carriers and bring them singly into transferring position, and a transferrer, combined with means to control the operation thereof, and a device to prevent the operation of the transferrer and rendered inoperative by or through movement of a filling-carrier into proper position for transfer.

7. In a loom, automatic filling-replenishing mechanism, including an intermittingly-movable feeder to contain a plurality of filling-carriers, a transferrer, and a fixed abutment to

guide a filling-carrier when transferred, combined with means to prevent the operation of the transferrer, said means including an extension adapted to be engaged by a filling-carrier adjacent the abutment, to thereby render said means inoperative, and a spring to render said means operative and place the extension in the path of the endmost filling-carrier in the feeder.

names to this specification in the presence of two subscribing witnesses.

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E. S. McREE,

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Witnesses as to Jas. H. Cobb:

LEROY A. WERTZ,

LEWIS D. BLAKE.

10 In testimony whereof we have signed our