

E. S. STIMPSON.
MAGAZINE STOP FOR WEFT REPLENISHING LOOMS.
APPLICATION FILED MAY 8, 1911.

1,038,679.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

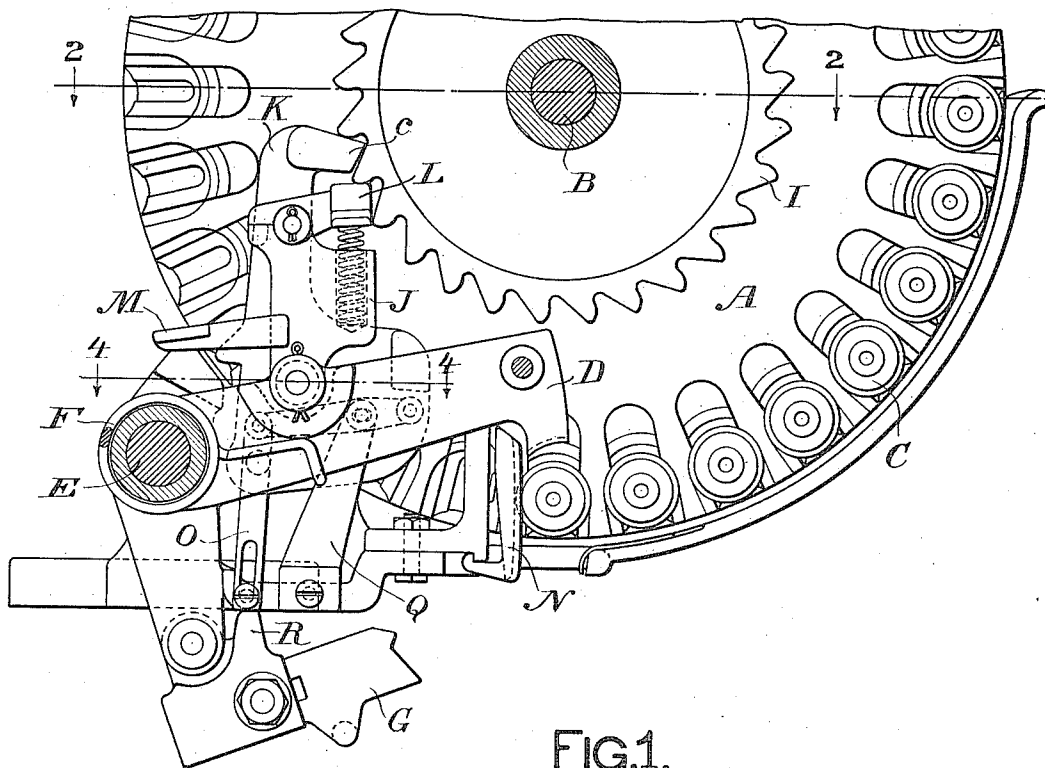


FIG. 1.

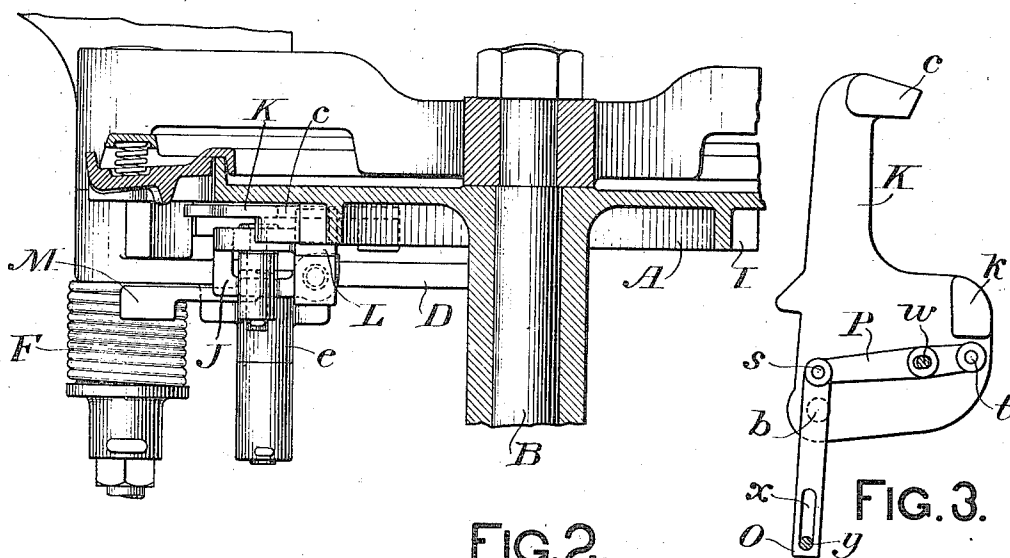


FIG. 2.

FIG. 3.

Witnesses:
Jos. S. Latimer
Eugene W. Bond.

Inventor:
Edward S. Stimpson.
by *Arthur S. Brown*
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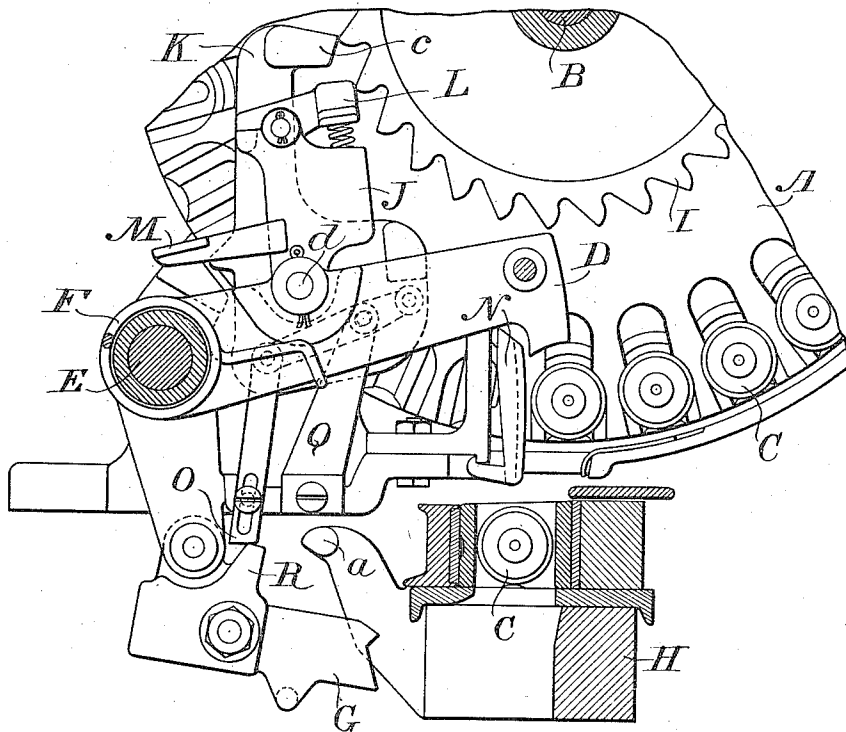


FIG. 6.

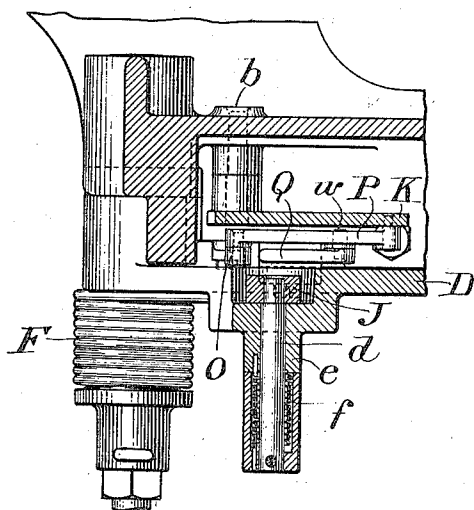


FIG. 4.

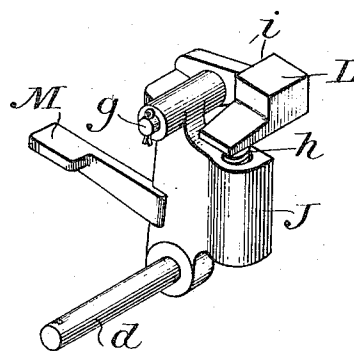


FIG. 5.

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UNITED STATES PATENT OFFICE.

EDWARD S. STIMPSON, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

MAGAZINE-STOP FOR WEFT-REPLENISHING LOOMS.

1,038,679.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed May 8, 1911. Serial No. 625,887.

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, of Hopedale, in the county of Worcester and State of Massachusetts, have invented a new and Improved Magazine-Stop for Weft-Replenishing Looms, (Case B,) of which the following is a specification.

The present invention is an improvement used in connection with the rotary battery or magazine of automatic weft-carrier replenishing looms such as exemplified by United States Letters Patent of Northrop, No. 529,940, November 27, 1894. In such looms an appropriate feed mechanism is employed to rotate the magazine step by step as the contained weft-carriers are transferred one by one into the shuttle. Such magazines require replenishment from time to time and, to permit the free turning of the magazine by hand, the feed mechanism is arranged so that it can be withdrawn from operative relation to the magazine. This replenishment of the magazine is commonly done while the loom is running, and it occasionally happens that the magazine, when being thus refilled, does not occupy a correct position when the weft-replenishing mechanism of the loom is brought into action, and as the result damage is apt to occur either through the smashing of a weft-carrier or the breakage of some part of the loom mechanism.

The object of the present invention is to prevent the action of the weft-replenishing mechanism whenever the magazine feed mechanism is inoperatively located with respect to the magazine.

The present invention is an improvement upon the invention set forth in United States Letters Patent of F. G. and J. H. Cobb, No. 780,266, January 17, 1905.

In accordance with the present invention the detent of the magazine feed mechanism itself is provided with a stop which is interposed in the path of a part of the weft-replenishing mechanism so as to stop the action thereof whenever the feeding mechanism is removed from feeding position relatively to the magazine.

The present improvement has been applied to the feed mechanism which is shown in Letters Patent of the United States No. 1,019,855, March 12, 1912; and in the accompanying drawings the same feed mechanism is illustrated as in said application, the

present improvement residing in the added parts and their combination with the other instrumentalities.

In said drawings—Figure 1, is a vertical cross-section through the rotary magazine, battery or hopper of a weft-carrier replenishing loom and through the associated portions of the transferring mechanism. In Fig. 1, the feed mechanism is shown in its normal position and the transferer dog is shown lifted to its transferring position. Fig. 2, is a detail horizontal section in the plane indicated by the line 2—2 in Fig. 1. Fig. 3, is a detail side view of the detent and the magazine stop with which it is provided. Fig. 4, is a detail horizontal section in the plane indicated by the line 4—4 in Fig. 1. Fig. 5, is a perspective view of the feed pawl. Fig. 6, is a section similar to Fig. 1, and showing also the lay and shuttle in section. In Fig. 6, the feed mechanism is shown in inoperative position and the stop is shown obstructing the movement of the transferer dog.

A, is the rotary magazine, battery or hopper turning on the fixed stud B, and shown equipped with spare weft-carriers C. D, is the usual transferer turning on the stud E, held uplifted by the spring F, and carrying the pivotal spring-uplifted transferer dog G, which is normally held depressed by the cooperating devices of the weft-replenishing mechanism but which is permitted to rise under the influence of its spring when a transfer of weft-carriers is demanded. H, is the lay and a, is the lay bunter which encounters the uplifted transferer dog G, to effect a transfer of weft-carriers. All of these features are similar in construction, organization and mode of operation with what has long been used in the Northrop loom.

The magazine has a fixed ratchet I, with which cooperates a feed pawl J, to feed the magazine step by step as the spare weft-carriers are transferred one by one to the shuttle by the transferer D, and also a detent K, which normally restrains the magazine from backward rotation. The detent K, is pivoted at b, (see Fig. 3), to a stationary part of the loom and it is weighted at c, so as to normally occupy the position shown in Fig. 1, cooperating with the ratchet I, to prevent backward rotation of the magazine. The detent has a tooth c, which directly en-

gages the ratchet teeth. The feed pawl J, has a fixed pin *d*, which is journaled in a sleeve *e*, formed on the transferrer D. A spring *f*, attached to said sleeve and (indirectly) to the pin *d*, acts to swing the feed pawl toward the ratchet. The feed pawl has a tooth L, which directly coöperates with the ratchet teeth. This tooth L, is pivotally mounted at *g*, on the feed pawl J, and it is pressed upwardly by a spring *h*. A shoulder *i*, of the tooth L, extends laterally between the shank of the detent K, and the ratchet I. The feed pawl J, has a forwardly projecting handle M, extending beyond the periphery of the magazine (as shown in Figs. 1, and 6) to enable the feed tooth L, to be swung clear of the ratchet, as shown in Fig. 6, when the magazine is to be freed from the feed mechanism to permit it to be turned freely in refilling with weft-carriers. When the feed pawl is thus swung forward to clear the ratchet the shoulder *i*, encounters the detent K, thereby swinging said detent forward so as to clear the ratchet. When the transferrer D, descends to transfer the leading weft-carrier of the magazine into the shuttle, the feed pawl J, with its pawl L, is depressed so as to pass below the next tooth of the ratchet and the spring *f*, then swings the feed pawl inwardly toward the ratchet so that the tooth L, is beneath the next ratchet tooth. When the transferrer D, again rises under the influence of the spring F, the magazine is rotated one step so as to bring the next weft carrier against the stop N, thereby positioning it properly beneath the transferrer D. In all of the respects thus far described the feed mechanism is similar to that set forth in the above mentioned application.

In accordance with the present invention the detent K, is provided with a magazine stop O. This stop is pivotally connected at *s*, to the outer end of a multiplying lever P, which at its inner end *t*, is pivoted to the detent K. This lever P, is centrally fulcrumed on a fixed pin *w*, carried at the upper end of a stationary bracket arm Q. The lever P, is slotted at its fulcrum, as shown in Fig. 3, so as to compensate for the different centers on which it and the detent K, swing. The stop O, has a lengthwise extending slot *x*, in which enters a fixed guide pin *y*.

The transferrer dog G, has an abutment R, which is immediately beneath the stop O. When the feed mechanism occupies its normal position, shown in Fig. 1, the stop O, occupies a sufficiently elevated position so as not to obstruct the upward swing of the transferrer dog G, to its transferring position. Fig. 1, shows the transferrer dog G, swung to its uplifted position, where it is in position to be encountered by the lay bunter *z*, in order

to effect a transfer of weft-carriers. When, however, the feed mechanism is swung forward, as shown in Fig. 6, to clear the ratchet I, of the magazine (thus leaving the magazine free to be turned in either direction), the stop O, is moved downwardly to the position shown in Fig. 6, where it obstructs the upward swing of the transferrer dog G. Accordingly, should the weft-replenishing mechanism be then called in action, the dog cannot swing upwardly into the path of the lay bunter *z*, and consequently there is no movement of the transferrer. Fig. 6, shows the magazine in such an abnormal position that the lowermost and leading weft-carrier is then improperly placed with respect to the transferrer, so that should the transferrer then act a smash of some sort would occur. This is prevented by the position which the stop O, then occupies. Since the stop O, is connected with the detent K, by the multiplying lever P, a small swing of the detent suffices to project the stop O, far enough down so as to prevent the lifting of the transferrer dog to coöperative transferring position with respect to the lay bunter I. Consequently, a transfer is prevented except at such time as the feed mechanism occupies its correct feeding position with respect to the magazine.

I claim—

1. An automatic weft-replenishing loom having, in combination, a rotary magazine carrying spare weft-carriers; a feed ratchet on such magazine; a transferrer that transfers spare weft-carriers one by one into weaving position; a spring-uplifted transferrer dog carried by said transferrer; a feed pawl actuated by said transferrer and coöperating with said ratchet; a detent coöperating with said ratchet to prevent backward movement of said magazine, said detent and feed pawl being manually movable into inoperative position with respect to said ratchet; a movable stop coöperating with said transferrer dog; and a multiplying lever connecting said detent and said stop, so that when said detent is in normally operative relation with respect to the ratchet, said stop does not interfere with the movement of said dog, but when said detent is moved away from normal position relatively to said ratchet, said stop prevents the functional movement of said dog.

2. An automatic weft-replenishing loom having, in combination, a rotary magazine carrying spare weft-carriers; a feeding ratchet on such magazine, a transferrer that transfers spare weft-carriers one by one into weaving position; a feed pawl actuated by said transferrer and coöperating with said ratchet; a detent coöperating with said ratchet to prevent backward movement of said magazine, said detent and feed pawl being movable into inoperative position

- with respect to said ratchet; and a movable stop connected to said detent, so that when said detent is in normally operative relation with respect to the ratchet, said stop does not interfere with the movement of said transferrer, but when said detent is moved away from normal position relatively to said ratchet, said stop prevents the functional movement of said transferrer.
3. An automatic weft-replenishing loom having, in combination, a rotary magazine carrying spare weft-carriers; a transferrer that transfers spare weft-carriers one by one into weaving position; feed mechanism for said magazine; a movable stop adapted to prevent the action of said transferrer; and a multiplying lever connecting said feed mechanism and said stop, so that when said feed mechanism is in normally operative relation with respect to the magazine, said stop does not interfere with the movement of said transferrer, but when said feed mechanism is moved away from normal position relatively to said magazine, said stop prevents the functional movement of said transferrer.
- In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.
- EDWARD S. STIMPSON.
- Witnesses:
C. W. PECKHAM,
E. D. OSGOOD.