

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

1,038,678.

Patented Sept. 17, 1912.

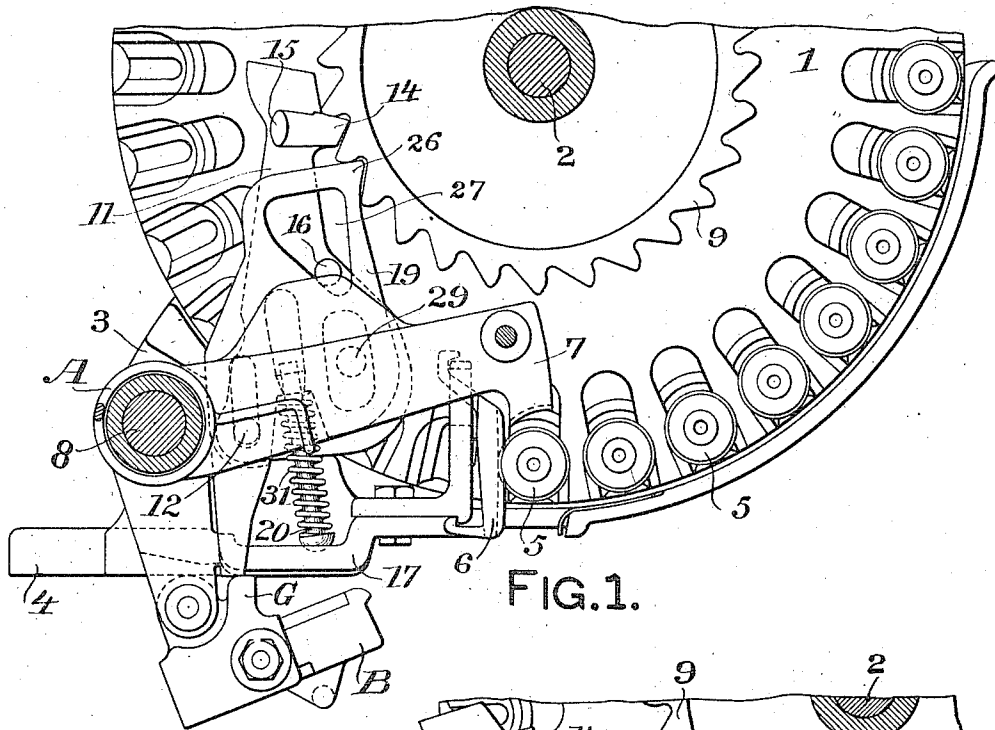


FIG. 1.

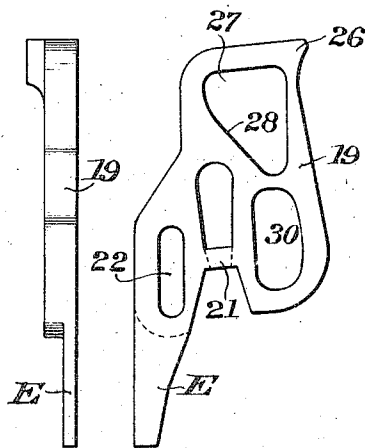


FIG. 3. FIG. 4.

Witnesses:
Joe. S. Latimer
Engelbert Bond

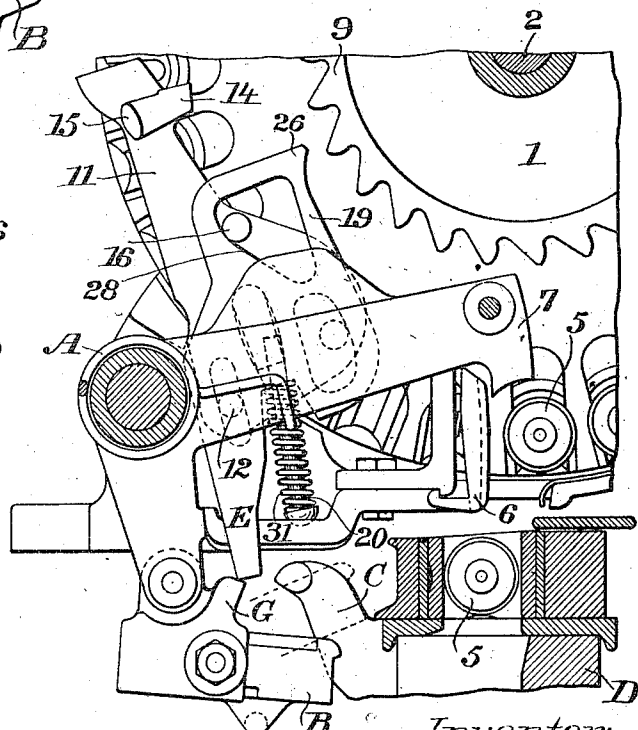


FIG. 2.

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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.

1,038,678.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed May 8, 1911. Serial No. 625,886.

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 A,) 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 replenishing 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time to time and, to permit the free turning of the magazine by hand, the feed mechanism is arranged so that it can be withdrawn from operative relation to the magazine.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 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 United States Letters Patent of E. S. Stimpson and W. S. Southwick, No. 823,644,

June 19, 1906, and is shown in the accompanying drawings, wherein—

Figure 1, is a vertical transverse section of the rotary magazine, battery or hopper of a weft-carrier replenishing loom of the well-known Northrop type and of the associated weft-replenishing mechanism. In Fig. 1, the feed mechanism is shown in its normally coöperative relation with the magazine and the transferrer dog is shown in its elevated position which it occupies when a transfer of weft-carriers is to be made. Fig. 2, is a section similar to Fig. 1 and also showing the shuttle and shuttle-box in section. Fig. 2 shows the feed mechanism removed from normal position so as to permit the free rotation in either direction of the magazine. Fig. 3, is an edge view and Fig. 4, a side view of the feed pawl.

For convenience of comparison the parts corresponding with those shown in said Stimpson and Southwick Patent No. 823,644 are designated by the same reference numerals as in said patent; and features not shown in said patent are designated by reference letters.

The inner plate 1, of the rotary magazine, hopper or battery is shown in the drawings. Said magazine rotates on a fixed stud 2, secured to a stand 3, mounted on the breast-beam 4, of the loom. Some of the weft-carriers 5, are shown in the drawings. A stop 6, is in the path of the weft-carriers and positions the leading weft-carrier in the path of the transferrer 7, as shown in Fig. 1. The transferrer is mounted in a customary manner on the stud 8, and is held normally lifted in the position shown in Figs. 1, and 2, by a spring A. The transferrer carries the usual spring-lifted dog B, which is normally held depressed in the position shown in Fig. 2, by the co-acting parts of the replenishing mechanism, but which is lifted by its spring to the position shown in Fig. 1, when a transfer of weft-carriers is required. In this uplifted position the transferrer dog B, is in the path of a bunter C, (shown in Fig. 2) which is carried by the lay D. The rotary magazine is equipped with a fixed ratchet 9, and retrograde movement of the magazine is prevented under normal conditions by a detent 11, pivoted at 12, which has a tooth 14,

engaging the ratchet 9. The detent has a handle 15, by means of which it can be swung outwardly to the position shown in Fig. 2, thereby freeing its tooth 14, from the ratchet 9. The feed pawl 19, has a feed tooth 26, at its upper inner end which engages the ratchet 9 to feed the magazine. This feed pawl is lifted by a spring 31, surrounding a pin 20, which is supported and rocks upon a portion 17, of the bracket 3. The upper end of this pin 20, extends through an aperture 21, in the feed pawl. The feed pawl has a slot 22, into which enters the projecting end of the guide pin 12 (also constituting the pivot for the detent 11); it has a cam slot 27, into which enters a laterally projecting pin 16, on the detent 11; and it has a slot 30, into which enters a laterally projecting pin 29, carried by the transferer 7. In all of these described particulars the construction shown is that of said patent of Stimpson and Southwick, together with other known and usual instrumentalities of the Northrop loom.

When the transferer 7, descends for the purpose of making a transfer of weft-carriers, its pin 29, encounters the bottom of aperture 30, of the feed pawl 19, thereby moving said pawl downwardly along the supporting pin 18, and compressing the spring 31. This lowers the tooth 26, below the next tooth of the ratchet 9. When the transferer is restored by the spring A, to its normal position, the spring 31, lifts the feed pawl and accordingly feeds the magazine one step so as to bring the next spare weft-carrier into transferring position against the stop 6. When it is desired to refill the magazine the detent 11, is pulled forwardly through its handle 15, to the position shown in Fig. 2. During this forward swing the pin 16, on the detent encounters the cam surface 28, of the feed pawl 19, thereby swinging it free from the ratchet 9. Accordingly, the magazine can then be turned freely in both directions for refilling. These operations are the same as in said patent of Stimpson and Southwick.

The present improvement consists in providing the magazine feed mechanism with a stop which prevents the action of the weft-replenishing mechanism when the feed mechanism is inoperative with respect to the magazine, as shown in Fig. 2. For this purpose the feed pawl 19, is provided with a downwardly extending projection E, which constitutes the weft-replenishing feed mechanism stop. This stop E, extends into the proximity of an abutment G, on the spring-lifted feed dog B. When the feed mechanism is in the position shown in Fig. 1, the stop E, occupies an uplifted position, as shown in Fig. 1, where it does not interfere with the elevation of the transferer dog B,

into transferring position. Fig. 1, shows the transferer dog B, uplifted into position where it is in the path of the lay bunter C and, as there shown, the location of the stop E, is such that it does not interfere with the necessary replenishing movement of the transferer dog B. In case, however, the feed mechanism is swung forwardly into inoperative position, as shown in Fig. 2, the stop E, is lowered and it is then in the path of the abutment G, on the transferer dog B, and accordingly prevents an elevation thereof into the path of the lay bunter C, so that no movement can be transmitted to the transferer 7, and consequently no damage can occur. Fig. 2, shows in dotted lines the position which the dog B, would have to occupy in order that the transferer 7, might be moved. Fig. 2, shows the leading weft-carrier 5, on the magazine occupying an improper position (as may be the case when the magazine is being refilled) and it is obvious that if the transferer should then descend it could not transfer said leading weft-carrier and some part of the mechanism would have to give way.

The length of the stop E, and its relation to the abutment G, on the transferer dog are such that any outward movement of the feeding mechanism sufficiently far to free the feed pawl 19, from the ratchet prevents the elevation of the spring-lifted transferer dog B, to its transferring position in the path of the lay bunter C. Likewise, the restoration of the feeding mechanism to operative position sufficiently to leave the transferer dog B, free to move into transferring position, results in the movement of the rotary magazine to correct position, so that no weft-carrier can be improperly positioned with respect to the transferer.

I claim—

1. An automatic weft-replenishing loom having, in combination, a rotary magazine for spare weft-carriers; feed mechanism for said magazine, comprising a hand-movable detent and a feed pawl; a transferer for transferring weft-carriers from said magazine into weaving position; a spring-uplifted transferer dog mounted on said transferer; and a stop on said feed pawl, said stop being normally out of the path of said dog but being moved into position to obstruct the lift of said dog whenever the feed mechanism is inoperatively positioned with respect to said magazine.

2. An automatic weft-replenishing loom having, in combination, a rotary magazine for spare weft-carriers; feed mechanism for said magazine; a transferer for transferring weft-carriers from said magazine into weaving position; a spring uplifted dog mounted on said transferer; and a stop movable with said feed mechanism, said stop being normally out of the path of said

dog but being moved into position to obstruct the lift of said dog whenever the feed mechanism is inoperatively positioned with respect to said magazine.

- 5 3. An automatic weft-replenishing loom having, in combination a rotary magazine for spare weft-carriers; feed mechanism for said magazine, including a feed pawl; a transfer-
10 from said magazine into weaving position; and a stop on said feed pawl, said stop being normally out of operative position but being moved into position to prevent the action of the transfer-
15 inoperatively positioned with respect to said magazine.

4. An automatic weft-replenishing loom having, in combination, a magazine for

spare weft-carriers; feed mechanism for said magazine; a transfer- 20
ring weft-carriers from said magazine into weaving position; and a stop movable with said feed mechanism, said stop being normally out of operative position but being moved into position to prevent the action of 25
the transfer-
25 the transferer whenever the feed mechanism is inoperatively positioned with respect to said magazine.

In witness whereof, I have hereunto signed my name in the presence of two sub- 30
scribing witnesses.

EDWARD S. STIMPSON.

Witnesses:

E. D. OSGOOD,
C. W. PECKHAM.