To all whom it may concern:

Be it known that I, AUGUSTIN J. CHEVRETTE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Bobbin-Releasing Device for Looms, of which the following is a specification.

This invention relates to means for successively releasing single bobbins in weft replenishing looms. A common form of such releasing mechanism is shown in the prior patent to Ryon No. 1,005,321 issued October 10, 1911.

In the commercial use of this mechanism it has been found that the means provided for releasing the bobbin sometimes fail to complete its full operative movement, with the result that the bobbin is delivered in an incorrect position for transfer. When this occurs a warp smash usually follows.

It is the object of my invention to improve releasing mechanism of this type by changes in construction which will prevent the placing of the mechanism in a neutral or mid-position and which will insure accurate and complete release of the bobbin.

With this general object in view, my invention relates specifically to certain arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of my invention is shown in the drawings, in which—

Fig. 1 is a sectional rear elevation of portions of a weft carrier magazine embodying my improvements:

Figs. 2 and 3 are detail sectional elevations showing certain of the parts in additional positions; and

Fig. 4 is a detail view of a slight modification.

Referring to the drawings, I have shown parts of a weft carrier magazine of a common commercial type, comprising end frames 10 and 11, held in spaced relation by connecting rods, not shown, and supported on a bracket or stand 12 which is secured to the breast beam of the loom. Vertical guide ways or compartments 13 and 14 are provided in the magazine ends 10 and 11 to receive the butts and tips of the bobbins B. The bobbins are placed by the operator in the compartments or guide ways of the magazine and are fed downward by gravity therein.

The lowermost bobbin is supported upon lugs or lateral projections 15 on a pair of sliding plates 16 and 17. These plates are provided with inclined slots 18 through which extends a pin or stud 19 fixed in the lower end of a bar 20, mounted to slide vertically in bearings in the magazine frame 10. A pair of plates 16 and 17 and a slide bar 20 are provided for each compartment of the magazine.

As a slide bar 20 is moved upward, the corresponding plates 16 and 17 are moved in opposite directions to withdraw the projections 15 from beneath the lowermost bobbin in that magazine compartment, permitting the bobbin to move downward and to engage a second pair of lugs or projections 21 oppositely disposed at the lower edges of the plates. As the slide bar 20 thereafter moves upward, the plates 16 and 17 return to their original positions, at the same time withdrawing the projections 21 and permitting the released bobbin to fall to the transfer position indicated at B in Fig. 1, in which position it may be engaged by the usual transferrer 22.

The slide bars 20 are provided with shoulders 23 and 24 positioned for engagement by an arm or lever 25 mounted on a sliding shaft 26 and having an outwardly extending arm 27 projecting into a notch 28 in a lever 29.

The lever 29 is normally held in the position shown in Fig. 1 by a spring 30, and is connected by a link 31 to actuating mechanism, not shown, by which it is pulled downward upon indication of weft exhaustion. Such movement rocks the lever 25, causing it to engage the lug or shoulder 23 of one of the slide bars 20 and raise the slide bar to release a bobbin.

The shaft 36 is connected with the box motion of the loom and is movable endwise to associate the lever 25 with different selected slide bars 20. Each slide bar 20 is provided with V-shaped notches 32 and 33 with which co-operates a spring plunger 34 which holds the slide bar yieldingly in raised or lowered position.

The parts thus far described form no part of my present invention and for a full description of the construction and operation...
thereof, reference is made to the prior patent to Ryon above noted.

In the operation of this mechanism, it has sometimes happened that the link 31 and the lever 29 failed to receive a full operative movement and consequently the slide bar 20 has been left in an intermediate position, with the plunger 34 pressed against the slide bar at some point between the notches 32 and 33, and with the projections 15 or 21 only partially withdrawn.

A certain amount of free space is necessary between the ends of the bobbin B and the end walls of the guide ways or compartments 13 and 14, to allow for variations in the bobbins. This permits some variations in the exact longitudinal location of the bobbins relative to the plates 15 or 21 so that when the plates are only partially withdrawn it sometimes happens that one end only of the bobbin will be released.

In the preferred embodiment of my invention, I have extended the adjacent inclined sides of the notches 32 and 33 to form a sharp projection 35 on the slide bar 20. The plunger 34 co-operating with the projection 35 is effective to complete the movement of the slide bar in either direction as soon as the point of the plunger passes the point of the projection.

When the plunger has moved upward only to the position shown in Fig. 2, the plates 16 and 17 are not moved sufficiently to release the bobbin at either end. When, however, the plunger moves further upward to the position shown in Fig. 3, the plunger quickly completes the movement of the bar, releasing the bobbin at both ends simultaneously. Similar results are obtained as the slide bar is pushed downward to release the advanced bobbin from the lower projections 21.

In certain forms of slide plates 16 and 17, as shown in a modification of the Ryon patent, the lower ends of the slots 18 are vertical instead of inclined, so that a certain upward movement of the slides 20 occurs before the plates begin to move. In applying my invention to such plates, I may use the slightly modified construction shown in Fig. 4, in which a slight straight portion or dwell 36 is provided below the notch 32.

The change in construction resulting from my invention is of great importance, as a single smash resulting from a misplaced bobbin frequently causes a very considerable loss of both time and labor.

Having thus described my invention, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims but what I claim is:

1. In a loom, a weft carrier magazine having a plurality of vertical compartments, a supporting and releasing device for each compartment effective to support the bobbins therein and to release a single bobbin from said compartment for movement to transfer position, said device including bobbin supporting members, means to actuate said members to release a bobbin, and auxiliary means to complete a releasing movement of said members.

2. In a loom, a weft carrier magazine having a plurality of vertical compartments, a supporting and releasing device for each compartment effective to support the bobbins therein and to release a single bobbin from said compartment for movement to transfer position, said device including bobbin supporting members, means to actuate said members to release a bobbin, and auxiliary means to complete a partial movement of said members in either direction.

3. In a weft carrier magazine, a bobbin releasing device including bobbin supporting members, operating devices therefor, actuating means for said devices, and additional means to move said devices to the extreme ends of their paths of travel.

4. In a weft carrier magazine, a bobbin releasing device including bobbin supporting members, slide bars connected to move said members, means to actuate said slide bars, and auxiliary means to move said slide bars to the extreme limits of their paths of travel.

5. In a weft carrier magazine, a bobbin releasing device including bobbin supporting members, operating devices therefor, actuating means for said devices, and additional means to move said devices to the extreme ends of their paths of travel, said additional means yieldingly and successively engaging oppositely disposed portions of said devices as the latter move relatively thereto.

6. In a weft carrier magazine, a bobbin releasing device including bobbin supporting members, slide bars connected to move said members, means to actuate said slide bars, and auxiliary means to move said slide bars to the extreme limits of their paths of travel, said bars having oppositely inclined faces thereon and said auxiliary means yieldingly engaging said bars on said inclined faces.

7. In a weft carrier magazine, a bobbin releasing device including bobbin supporting members, slide bars connected to move said members, means to actuate said slide bars, and auxiliary means to move said slide bars to the extreme limits of their paths of travel, said bars having oppositely inclined faces thereon and said auxiliary means comprising spring-pressed plungers yieldingly engaging said inclined faces.

In testimony whereof I have hereunto affixed my signature.

AUGUSTIN J. CHEVRette.