

E. H. RYON.
WEFT REPLENISHING LOOM.
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1,029,948.

Patented June 18, 1912.

Fig. 2.

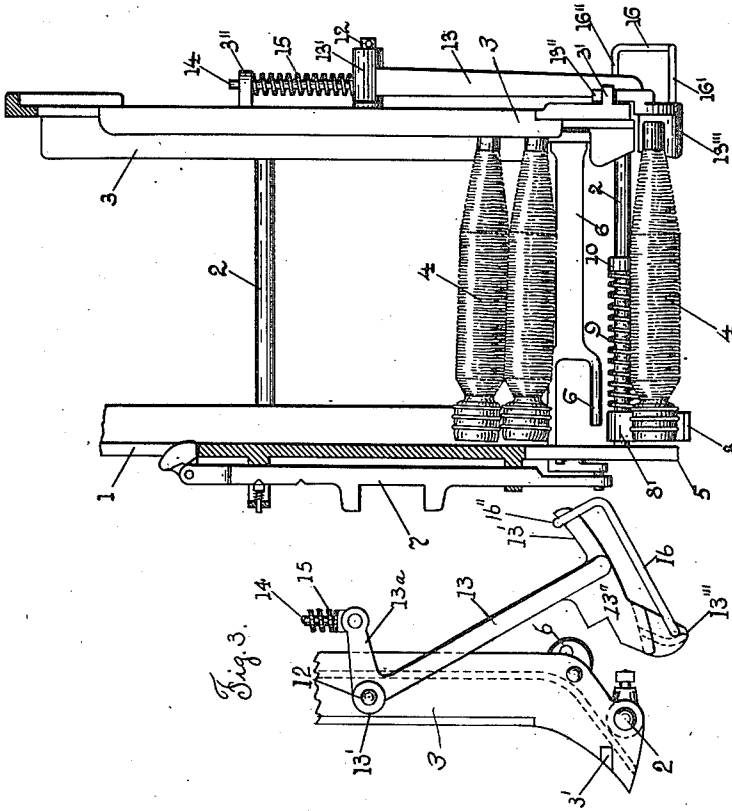


Fig. 3.

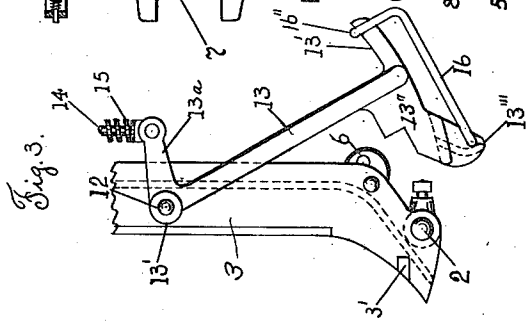
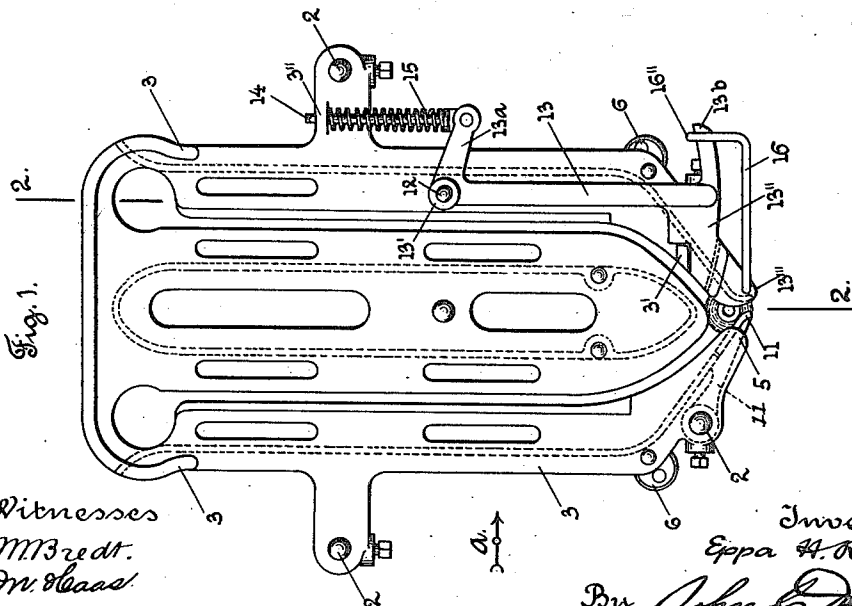


Fig. 1.



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UNITED STATES PATENT OFFICE.

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WEFT-REPLENISHING LOOM.

1,029,948.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed November 27, 1911. Serial No. 662,537.

To all whom it may concern:

Be it known that I, EPPA H. RYON, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Weft-Replenishing Looms, of which the following is a specification.

My invention relates to weft replenishing looms of the type shown and described in U. S. Letters Patent, No. 933,492, and particularly to the stationary magazine for weft replenishing looms, shown and described in my pending application, No. 581,387, in which two or more guide-ways for superposed bobbins or filling carriers are used, and in which each set of bobbins is supported in its compartment, and at the desired time, the lowest bobbin of one set is automatically released and drops down by gravity to the lower discharging end of the magazine, which end is common to all of the compartments. The selected bobbin is yieldingly supported at said discharging end by retaining means, comprising a spring actuated lever or support at the head of the bobbin, on one side of the head, and a second spring actuated lever or support at the tip end of the bobbin, on the opposite side of the bobbin; said levers are supported at the lower end of the magazine, in the usual and well known way.

The object of my invention is to provide a second or supplemental yielding support for the tip end of the bobbin which comprises a pivotally mounted swinging lever, which yieldingly holds the tip of the bobbin, in addition to the ordinary yielding support. My supplemental support is intended to normally act as a stationary support, but in case of an improper transference of a bobbin, if the shuttle is not in proper position, or for any other cause, the head of the bobbin is pushed too far through the shuttle; the tip end may project above the top of the shuttle, and catch in the magazine. In such case or cases, as the lay moves back the bobbin or magazine may be broken; but by means of my supplemental yielding support in such case or cases, said support on which the tip of the bobbin rests will be moved on its fulcrum, against the action of a spring, and prevent any injury to the bobbin, or to the magazine.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

I have only shown in the drawing a detached portion of a magazine for weft replenishing looms, of the type above referred to, with my improvements combined therewith, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawing:—Figure 1 is an end view of a stationary magazine with my improvements combined therewith. Fig. 2 is a section, on line 2, 2, Fig. 1, looking in the direction of arrow *a*, same figure, and, Fig. 3 is a detached view of a part of the frame, and the supplemental lever or support, shown at the right in Fig. 1, in a different position.

In the accompanying drawing, 1 is the inner end of a stationary magazine, which supports, by means of transverse rods 2, the outer end 3. The magazine is provided in this instance with four guide-ways or vertically extending compartments for the heads and tips of the bobbins 4, which drop down by gravity to the lower discharging end 5 of the magazine. Each compartment or guide-way is provided at its lower end with mechanism for supporting a set of bobbins, and also for releasing the lowest bobbin in each set. The holding and releasing mechanism consists of a rocking support or cradle 6, pivotally mounted at the lower part of each compartment, and operated by upright bars 7, all as shown and described in pending application, Serial No. 581,387, above referred to.

At the lower inner part of the magazine is a yielding lever or support 8 on one side of the head, for the head of a bobbin 4, see Fig. 2; said lever 8 has its hub 8' loose on a rod 2. A helically coiled torsion spring 9 encircles the rod 2, and is secured at one end to a collar 10, fast on said rod 2, and is connected at its other end with the hub 8' of the lever 8, and acts to yieldingly hold the lever 8 in its raised position, with its free end in the path of the head of the bobbin, as shown in Fig. 2. At the front end of the magazine is a corresponding yielding lever or support 11, for the tip end of the bobbins 4, see Fig. 1, but on the opposite side of the bobbin 4 from the support 8.

All of the above mentioned parts may be of the usual and well known construction in the class of looms referred to.

I will now describe my improvements, which, as above stated, relate particularly to additional yielding supporting means for the tip end of the bobbins.

A stud 12, on the outside of the outer end 3 of the magazine, and adjacent in this instance the central portion of the magazine, that is the central portion intermediate the upper end and the lower end, has pivotally mounted thereon the hub 13' of a downwardly extending arm or lever 13; the lower portion of the lever 13 is formed into a plate 13'', which has an offset at 13''', and is adapted to extend inwardly of the magazine, and into the path of and engage the tip end of the bobbins 4. A lug 3', on the outer end of the magazine, limits the inward movement of said lever, 13, see Fig. 1.

An arm 13^a on the lever 13, has pivotally connected thereto, the lower end of a rod 14, which extends upwardly and through a lug 3'' on the magazine. A helically coiled expansion spring 15 encircles the rod 14, and bears at one end against the lug 3'', and at its other end against the head of the rod 14, and acts to yieldingly hold the lever 13 in its inward position, as shown. The plate 13'' has in this instance pivotally mounted thereon, at its forward end 13'''' the front end 16', see Fig. 2, of a wire 16, which extends rearwardly under the plate 13'', and then upwardly, with its other end 16'' preferably bent inwardly, and extending over the upper edge of the extension 13^b on the lever 13, but not attached thereto, so as to allow the wire 16 to move upwardly, and form a yielding surface for the filling thread leading from the shuttle.

The operation of my improved supplemental supporting lever will be readily understood by those skilled in the art from the above description in connection with the drawing; and briefly is as follows:—In the normal operation of the loom, the bobbins are released, and dropped by gravity to the discharging end of the magazine, as shown in Figs. 1 and 2, preparatory to being transferred into the active shuttle. The transferer engages the bobbin at the proper time and pushes it downward, the yielding support 8 for the head of the bobbin, and the support 11 for the tip of the bobbin, at the discharging end of the magazine, moving outwardly to allow the release of the bobbin in the usual way, and by supplemental support, through the action of the spring 15 remaining in its normal inward position, as shown in Fig. 1. In case of an improper transference of the bobbin for any reason as the lay moves back, the supplemental support at the lower end of the lever 13 will move outwardly, against the action of

the spring 15 to the position shown in Fig. 3, or to any intermediate position, and in this way prevent any injury to the bobbin, or to the magazine, as will be readily understood by those skilled in the art.

It will be understood that the details of construction of my improvements may be varied if desired.

I preferably have the pivot point for the downwardly extending lever 13 near the central portion of the magazine, that is the central portion between the upper end and the lower end, but if preferred, the pivot point may be above said central portion, in which case a longer lever 13 would be employed. By using a longer lever there would be less movement at the lower end of said lever.

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

1. The combination with a stationary magazine for a weft replenishing loom having a plurality of guide-ways or compartments for bobbins, of a yielding support for the head of the bobbin, and a yielding support for the tip of the bobbin, comprising a pivoted arm having its fulcrum adjacent the central part of the magazine, and having an extension on its lower end adapted to extend under the tip of the bobbin, and a spring for actuating said arm, to yieldingly hold it in normal position.

2. The combination with a stationary magazine for a weft replenishing loom, having a plurality of guide-ways or compartments for bobbins, of a yielding support for the head of the bobbin, and a yielding support for the tip of the bobbin, said last mentioned support, comprising a pivoted arm having its fulcrum adjacent to or above the central part of the magazine, and normally held stationary by a spring on the normal transfer of a bobbin.

3. The combination with a stationary magazine for a weft replenishing loom, having a plurality of guide-ways or compartments for bobbins, of a yielding support for the head of the bobbin, and a yielding support for the tip of the bobbin, and a second yielding support for the tip of the bobbin, said last mentioned support, comprising a pivotally mounted arm having its fulcrum adjacent to or above the central part of the magazine, and normally held stationary by a spring on the normal transfer of a bobbin, and a guide-wire for the filling thread, pivotally mounted on the lower end of said last mentioned support, and adapted to move back with said support, against the action of said spring.

4. The combination with a stationary magazine for a weft replenishing loom, having a plurality of guide-ways or compartments for bobbins, of a yielding sup-

port for the head of the bobbin, and a yielding support for the tip of the bobbin, comprising a pivoted arm having its fulcrum adjacent the central part of the magazine, and having an extension on its lower end adapted to extend under the tip of the bobbin, and a spring for actuating said arm, to yieldingly hold it in normal position, and a guide-wire for the filling thread, pivot-
ally mounted on the lower end of said last mentioned support, and adapted to move back with said support against the action of said spring.

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Witnesses:

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