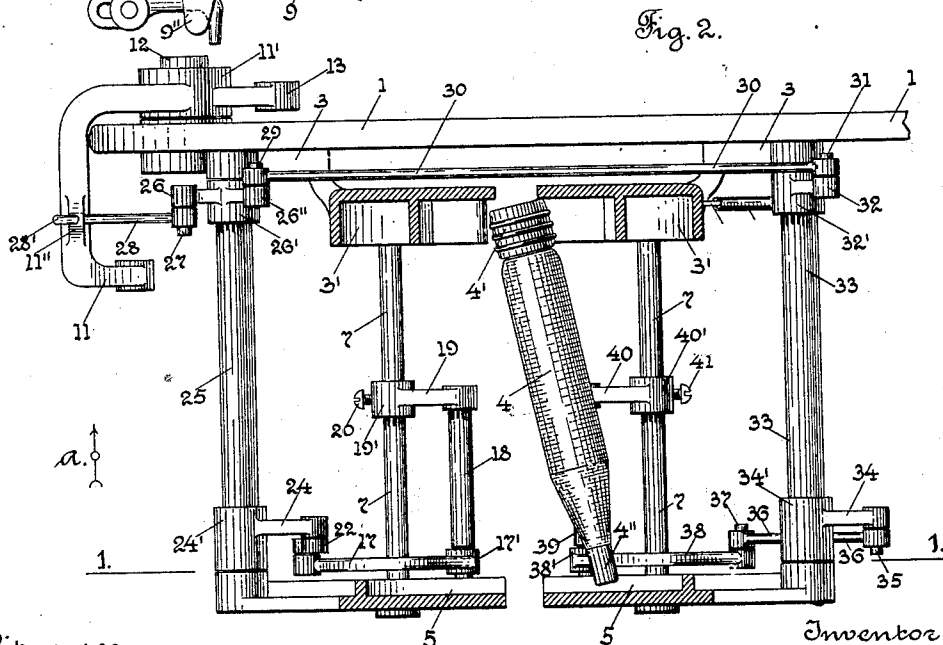
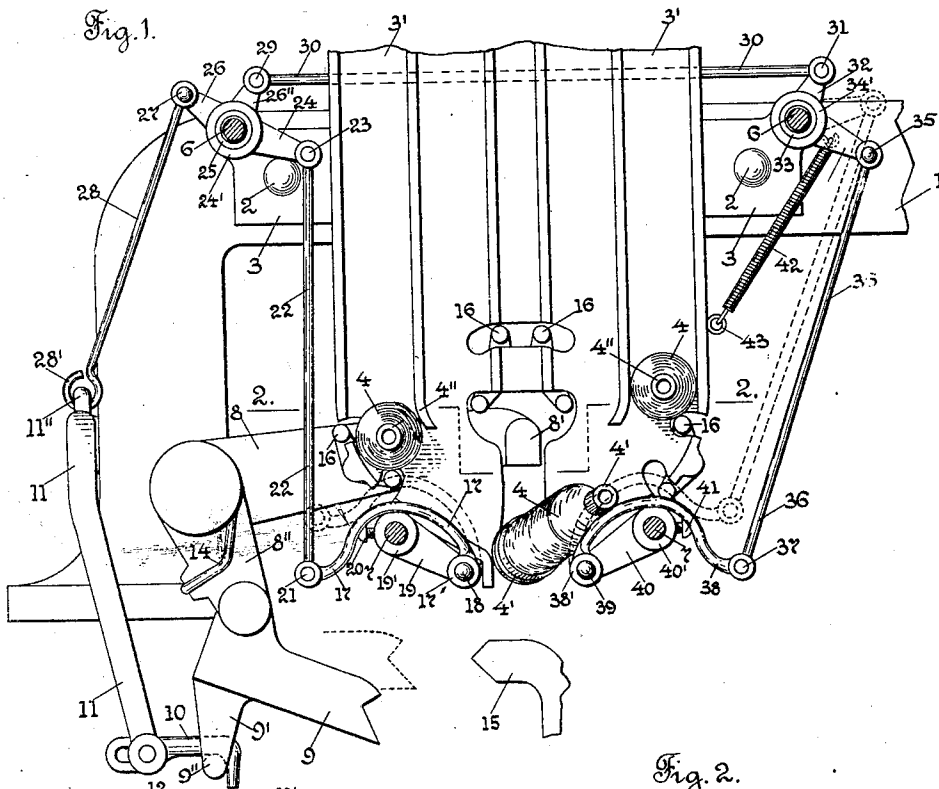


H. N. ARTHUR.
WEFT REPLENISHING LOOM.
APPLICATION FILED MAR. 24, 1909.

936,510.

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WEFT-REPLENISHING LOOM.

936,510.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRISON N. ARTHUR, a citizen of the United States, residing at Lawrence, in the county of Essex 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, and particularly to that class of weft replenishing looms which have a stationary magazine with a plurality of guide-ways or compartments for bobbins or filling carriers, and in which, when the lowest bobbin in a compartment is released, it drops down to an opening at the lower end of the magazine, ordinarily common to all the compartments, and into a position under the transferrer, to be engaged by the transferrer, on the operation of the weft replenishing mechanism, to be transferred into the active shuttle, to take the place of the substantially exhausted bobbin therein.

It has been found in practice that when a bobbin is released from the lower end of its compartment, to drop down to the discharging end of the magazine, that sometimes the bobbin is misplaced, and does not fall into its proper position at the discharging end of the magazine under the transferrer, for instance, the head of the bobbin being heavier than the tip, may reach its proper position under the transferrer, but the tip of the bobbin may be held, or lag behind on its way to the discharging end of the magazine, and not reach its proper position under the transferrer arm, when said arm operates to transfer the bobbin into the shuttle, and consequently the bobbin is not transferred.

The object of my invention is to provide mechanism for properly positioning a bobbin, after it has been released from its compartment, and preparatory to its being transferred into the active shuttle, and my invention consists in certain novel features of construction of my improvements, as will be hereinafter fully described.

I have shown in the drawing a detached portion of a stationary magazine of a weft replenishing loom, of the type shown and described in the pending application for Letters Patent, Serial No. 298,939, but it will be understood that my improvements may be

used in connection with any type of stationary magazines, having a plurality of compartments for bobbins or filling carriers.

Referring to the drawing:—Figure 1 is a front sectional view of a stationary magazine, and of the transferring mechanism, taken on line 1, 1, Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 2 is a plan view of the parts shown in Fig. 1, showing a section, on line 2, 2, Fig. 1, through the magazine; some of the parts shown in Fig. 1 are left off in this figure.

In the accompanying drawing, 1 is a stand secured to the loom side, not shown, and having secured thereto, in this instance by bolts 2, the side flanges 3 on the rear or inner guide-ways 3', in this instance four in number, for the heads 4' of the bobbins 4.

5, see Fig. 2, are the lower parts of the outer guide-ways for the tips 4'' of the bobbins 4; 6, 6 are two upper transverse rods, and 7, 7, two lower transverse rods, see Fig. 1, which rods attach the front guide-ways, or the front part of the magazine to the rear part.

8 is the transferrer arm carrying the transferrer 8', see Fig. 1, and having its hub pivotally mounted on the stand 1, in the usual way, and having the downwardly extending arm 8'', on which is pivotally mounted the bunter 9, having the downwardly extending arm 9', with a stud thereon, which is engaged by the hooked end of a link 10, pivotally mounted on the lower end of the downwardly extending arm 11 of the transferring mechanism, which has its hub 11' mounted on a stud 12 on the stand 1, see Fig. 2. Extending out from the hub 11' is an arm 13, which is connected with the transferrer operating mechanism, not shown.

A helically coiled torsion spring 14, connected with the arm 8'' of the transferrer, acts to return the transferrer arm to its normal raised position.

15 is a detached portion of a dagger carried on the lay, not shown, and which, when the bunter 9 is moved into its raised position, shown by broken lines, engages said bunter on the forward movement of the lay, to operate the transferrer mechanism.

16 are rocking supports or cradles, adapted to retain the bobbins in their compart-

ments, and on the rocking thereof to drop a selected bobbin to the discharging end of the magazine, which in this instance is common to all of the compartments, and toward which the bobbins drop by gravity.

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 consist of means for properly positioning the selected bobbin or filling carrier, which is released from its compartment, preparatory to being transferred, in case said bobbin is misplaced, or fails to properly drop to the discharging end of the magazine and below the transferer arm 8'. I have shown in this instance my positioning means located at the front part of the magazine, and intended to engage the tip end of the bobbins or filling carriers. I have in this instance located or placed on one side of the front opening at the discharging end of the magazine, and in the path of the tip of a bobbin as it falls from its compartment, a movable arm or lever 17, which has a hub 17' at its inner end, which is pivotally mounted in this instance on the reduced end of a rod 18, which has its inner end secured to an arm 19, having its hub 19' secured by a set screw 20, in this instance on one of the lower transverse rods 7, see Fig. 2. The arm or lever 17 is preferably made of curved shape, and is connected at its outer end to a stud 21, at the lower end of a rod or connector 22; the upper end of the rod or connector 22 is connected with a stud 23 on an arm 24, which has its hub 24' in this instance fast on a sleeve 25, mounted on one of the upper transverse rods 6, see Fig. 2. Fast on the inner end of the sleeve 25 is a hub 26', having extending out therefrom an arm 26 carrying a stud 27, on which is pivotally mounted the upper end of a rod or connector 28. The lower end of the rod or connector 28 has in this instance an eye 28' thereon, to engage a loop 11' on the arm 11. Extending out from the hub 26' is a second arm 26'' which carries a pin 29, to which is connected one end of a rod or connector 30; the other end of the rod or connector 30 is connected to a pin 31 on an arm 32, extending out from the hub 32' fast on the inner end of the sleeve 33. The outer end of the sleeve 33 has a hub 34' thereon, and extending out from said hub is an arm 34 carrying a pin 35, see Fig. 2. The pin 35 is connected with the upper end of a rod or connector 36; the lower end of said rod or connector 36 is connected with a pin 37 on the outer end of a second curved shaped arm or lever 38, corresponding to the arm 17, and located on the opposite side of the discharge opening in the magazine, and in the path of the tip of a bobbin as it falls from its compartment. The inner end of the arm

38 has a boss 38' to receive the reduced end of a rod 39; the inner end of said rod 39 is secured to an arm 40, having its hub 40' secured by a set screw 41 on the other lower transverse rod 7, see Fig. 2. A helically coiled contraction spring 42 is in this instance attached at one end to an eye 43, secured to the rear part of the magazine, and is attached at its other end to the hub 32', and acts to hold the levers 17 and 38 in their inoperative positions, as shown by full lines in Fig. 1.

The operation of my improvements will be readily understood by those skilled in the art, from the above description in connection with the drawing.

When a bobbin or filling carrier 4 drops down from its compartment toward the discharging end of the magazine, in this instance from a compartment at the right in Fig. 1 of the drawing, preparatory to being transferred into the active shuttle, and the bobbin is not properly positioned under the transferer, the tip of the bobbin lagging behind, or remaining in a wrong position, as shown in the drawing, so that the bobbin is not properly located under the transferer 8, on the movement of the lever 11 of the transferer mechanism, in the ordinary way, to allow the dagger 9 to be raised into the path of the bunter 15 on the lay, shown by broken lines in Fig. 1, preparatory to the operation of the transferer mechanism, the movement of the lever 11, through the intermediate connections to the positioning arms 17, and 38, will raise said arms, as indicated by broken lines in Fig. 1, and in this instance the arm 38, at the right, will act to raise or tilt the tip of the bobbin, and cause it to drop into its proper position under the transferer 8', before the transferer is lowered sufficiently to engage the bobbin, so that the bobbin will be in a proper position to be transferred.

It will be understood that the details of construction of my improvements may be varied if desired, and they may be adapted to be applied to any type of stationary magazine in a weft replenishing loom, which has two or more compartments or guide-ways for the bobbins or filling carriers; the essential feature of my invention being the combination with a stationary magazine of a weft replenishing loom, of movable means, located at the discharging end of the magazine, for positioning under the transferer; a misplaced bobbin or filling carrier after its release from its compartment, and preparatory to being transferred into the active shuttle; said means are preferably connected with, and operated through the operation of the weft replenishing mechanism, but they may be operated by other mechanism, and the head of the bobbin, instead of the tip, may be engaged if preferred.

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

1. In a weft replenishing loom, the combination with a magazine for bobbins or filling carriers, of movable means for positioning a misplaced bobbin or filling carrier under the transferer, preparatory to the transfer of said bobbin or filling carrier;
2. In a weft replenishing loom, the combination with a magazine for bobbins or filling carriers, of movable means for accelerating the movement of, and positioning a bobbin or filling carrier under the transferer, preparatory to the transfer of said bobbin or filling carrier.
3. In a weft replenishing loom, the combination with a magazine for bobbin or filling carriers, of movable means for positioning a bobbin or filling carrier under the transferer, preparatory to the transfer of said bobbin or filling carrier, and connections intermediate said means and the transferer mechanism.
4. In a weft replenishing loom, the combination with a magazine for bobbins or filling carriers, of movable means for positioning a bobbin or filling carrier under the transferer, preparatory to the transfer of said bobbin or filling carrier, and connections intermediate said means, and the bunter of the transferer mechanism, and said means operated through the engagement of said bunter with the dagger on the lay.
5. In a weft replenishing loom, the combination with a magazine, having a plurality of compartments or guide-ways for superposed filling carriers leading to a transferring position common to all of the compartments, of means, operative upon the movement of a bobbin or filling carrier from its compartment or guide-way, to correctly position said bobbin or filling carrier in its transferring position.
6. In a weft replenishing loom, the combination with a magazine, having a plurality of compartments or guide-ways for superposed filling carriers leading to a transferring position common to all of the compartments, of means to move a bobbin or filling carrier from an abnormal position into a normal position under the transferer.
7. In a weft replenishing loom, the combination with a magazine having a plu-

rality of compartments or guide-ways for superposed filling carriers leading to a transferring position common to all of the compartments, of means, operative upon the passage of a bobbin or filling carrier from its compartment or guide-way, to correctly move it into a transferring position.

8. In a weft replenishing loom, the combination with a magazine, having a plurality of compartments or guide-ways for superposed filling carriers leading to a transferring position common to all of the compartments, of means, operative upon the passage of a bobbin or filling carrier in the guide-ways of the magazine, to move positioning devices into the path of said bobbin or filling carrier, to engage the same.

9. In a weft replenishing loom, the combination with a magazine, having a plurality of guide-ways or compartments for superposed filling carriers, leading to a transferring position common to all of the compartments, of two positioning levers outside of said guide-ways, a transferring lever, and connections to the positioning levers, whereby a movement of the transferring lever will move the positioning levers above the guide-ways and toward the transferring position of the bobbin.

10. In a weft replenishing loom, the combination with a magazine, having guide-ways or compartments therein for filling carriers or bobbins, leading to a transferring position common to all of said guide-ways or compartments, of pivoted arms, one at each side of the discharge opening of the magazine, and means to move said arms above said guide-ways, upon the discharge of a bobbin or filling carrier therein.

11. In a weft replenishing loom, the combination with a magazine having guide-ways or compartments for bobbins or filling carriers, of means to release a bobbin or filling carrier from its compartment or guide-way, to fall by gravity through said guide-way, and a positioning lever, and means to move it, to disengage any bobbin or filling carrier remaining in an abnormal position in said guide-way.

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