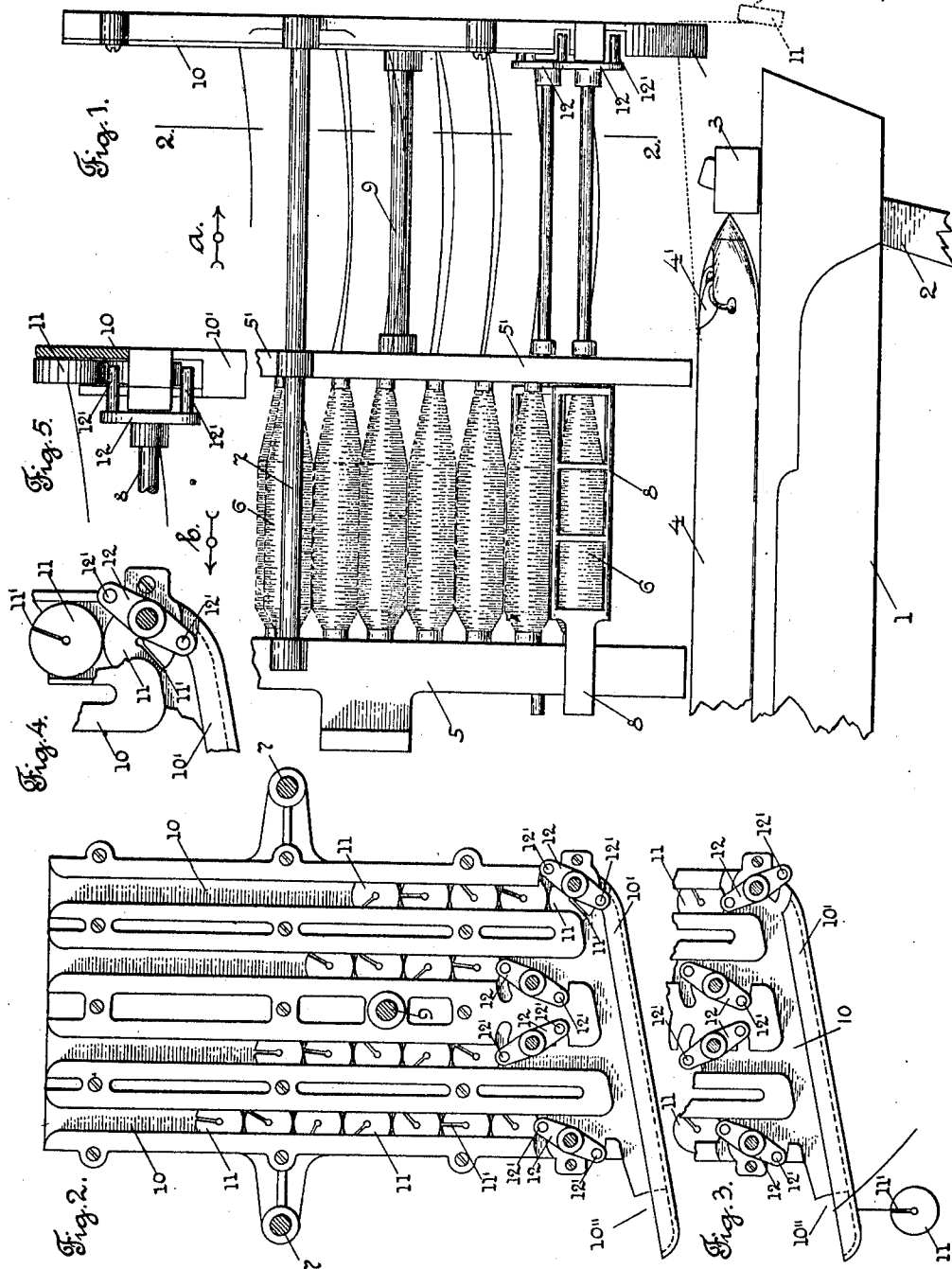


G. F. HUTCHINS.
WEFT REPLENISHING LOOM.
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1,051,595.

Patented Jan. 28, 1913.



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UNITED STATES PATENT OFFICE.

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WEFT-REPLENISHING LOOM.

1,051,595.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE F. HUTCHINS, a citizen of the United States, residing at Worcester, in the county of Worcester 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 to that class of looms which have a stationary magazine or hopper at one end for the filled bobbins, which are to be transferred from the magazine or hopper into a shuttle, to take the place of a practically or substantially exhausted bobbin, in the operation of the loom. And my invention particularly relates to thread holding devices, or means for holding the ends of the thread or filling, drawn off from the bobbins when the bobbins are placed in the magazine or hopper.

The object of my invention is to provide improved devices, or means, for holding the ends of the thread or filling from the bobbins which are placed in the magazine or hopper, so that the ends will be held, and will be properly guided and moved with the bobbins as they move down in the magazine or hopper, and are discharged, one at a time, from the discharging end of the hopper, into a position to be transferred into the shuttle; and so that the thread or filling will be properly threaded into the shuttle in which the bobbin is placed, and the loose end of the filling, which is cut off, will preferably be drawn away and dropped on the floor, or into a suitable receptacle.

I have shown in the drawing a detached portion of a stationary magazine or hopper for a weft replenishing loom, of the type shown and described in U. S. Letters Patent No. 941,179, 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 a front view of a portion of a stationary magazine of the class referred to, with my improvements combined therewith. The end of the lay, a shuttle on the lay, in position under the magazine, and the upper end of a picker stick, are shown in this figure. Fig. 2 is a section, on line 2, 2, Fig. 1, looking in the direction of arrow *a*, same figure. Fig. 3 shows the lower part of the mechanism shown in Fig. 2, detached, with the first lever at the right in an opposite position, and one drop weight or thread holder dropped down into its lower position. Fig. 4 is, on an enlarged scale a detached portion of the mechanism shown at the lower right hand corner in Fig. 2, and, Fig. 5 is an edge view of the parts shown in Fig. 4, looking in the direction of arrow *b*, same figure.

In the accompanying drawing, 1 is the outer end of the lay, 2 is the upper end of the picker stick, carrying the picker 3, and 4 is a shuttle having a threading device 4' thereon, of any ordinary construction.

The stationary magazine or hopper for the filled bobbins is in this instance similar in construction and operation to the magazine or hopper shown and described in the Letters Patent, No. 941,179, above referred to.

The stationary magazine or hopper consists in this instance of the vertically extending plate 5, suitably secured in position on the loom, and having a series of vertically extending guide-ways or compartments, in this instance four in number, for the heads of the bobbins 6, and also a second plate 5' having a series of vertically extending guide-ways or compartments, corresponding to the guide-ways or compartments in the plate 5, for the tips of the bobbins. The plates 5 and 5' are secured together by transverse rods 7, only one of which is shown in Fig. 1. At the lower end of each guide-way or compartment is located a rocking lever or cradle 8, to hold the bobbins 6 in their respective guide-ways or compartments, and on the rocking of a lever 8, the lowest bobbin in its guide-way or compartment will drop down by gravity to the discharging end of the magazine, and to be transferred into a shuttle to take the place of a spent bobbin, all as fully described in said Letters Patent, No. 941,179.

I will now describe my improvements in thread holding devices, which in this instance are shown combined with a stationary magazine or hopper for filling carriers of the class referred to, but which may be adapted to be combined with any other stationary magazine or hopper for bobbins. In this instance the rods 7 connecting the plates 5 and 5' are extended; there is also in this instance a central rod 9, see Fig. 1, secured at its inner end to the plate 5'. Supported on the extended rods 7 and the rod 9, is a

vertically extending plate 10, parallel to the plates 5, and 5', and located at a sufficient distance from the outer end of the magazine or the plate 5', to clear the lay, as shown in Fig. 1. The plate 10 has thereon four vertically extending guide-ways or compartments, corresponding to the four guide-ways or compartments of the magazine. The lower end of the plate 10 is made inclined toward the rear of the loom, and in the form of a chute or guide-way 10', which is cut away on one edge, as shown at 10'', at its lower discharging end, see Fig. 2.

The guide-ways or compartments in the plate 10 are adapted to receive a series of drop weights or rolls 11, made of wood or any other suitable material, and preferably of circular shape, or in the shape of rolls. The number of rolls 11 in each guide-way or compartment in the plate 10 corresponds to the number of bobbins 6 in the corresponding guide-way or compartment in the plates 5 and 5' of the magazine, and each roll 11 preferably has an open end slot or cut 11' therein, to receive and hold the end of the thread or filling from a bobbin 6. The slot or cut 11' can be made in any suitable way, to act to clamp and hold the thread from the bobbin, when it is pulled through the slot or cut.

When a bobbin 6 is placed in one of the guide-ways or compartments in the magazine, a drop weight or roll 11 is also placed in a corresponding guide-way or compartment in the plate 10, and the end of the filling drawn off from the bobbin is connected with the drop weight or roll 11, by placing it in the slot or cut 11' therein. The drop weight or roll 11 will move down in its compartment, with the thread attached thereto, as the bobbin 6 on which the thread is wound, moves down in its compartment in the magazine.

The rocking levers or cradles 8 have in this instance the outer journal or bearing thereof extended beyond the plate 5' of the magazine, to the plate 10 for the drop weights or rolls 11, and have fast on the ends thereof a plate 12, having an outwardly extending pin 12' on each end thereof. The pins 12' act to hold the drop weights or rolls 11 in their guide-ways or compartments, in the same way as the cradles 8 hold the bobbins 6 in their guide-ways or compartments, and the rocking of a cradle 8, to allow the lowest bobbin in a guide-way or compartment to drop down by gravity to the discharging end of the magazine, will also rock the plate 12, from the position shown in Fig. 2 to the position shown in Fig. 3, and allow a drop weight or roll 11,

having the end of a thread or filling attached thereto from a bobbin 6, to drop down out of its guide-way or compartment into the inclined guide-way or chute 10' on the lower end of the plate 10, to roll down said chute and to pass out through the cut-away side 10'' at the lower end thereof, and hang down, as shown in Fig. 3. The dropping down of the drop weight or roll 11 with the end of the thread from a bobbin 6 attached thereto, carries the end of the thread with the bobbin, as the bobbin is discharged from the magazine, to a position nearly level with the upper side of the shuttle, see broken lines in Fig. 1, to be threaded in the shuttle by the threading device, and when the thread is cut at the selvage by the usual cutting means, the drop weight or roll 11 will drop down into a suitable receptacle placed to receive it, and carry with it the filling thread end, so that there will be no loose ends connected with the magazine.

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 different kinds of magazines or hoppers for weft replenishing looms.

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 stationary magazine or hopper, having a plurality of compartments or guide-ways for the bobbins or filling carriers, and a movable support in each compartment for the bobbins, of a second set of compartments or guide-ways for movable devices independent of the shuttle, to which the ends of the filling, drawn off from the bobbins, are attached, and a movable support in each of said last-mentioned compartments for said movable devices.

2. In a weft replenishing loom, the combination with a stationary magazine or hopper, having a plurality of compartments or guide-ways for the bobbins or filling carriers, and a movable support in each compartment for the bobbins, of a second set of compartments or guide-ways for movable devices, independent of the shuttle, to which the ends of the filling drawn off from the bobbins are attached, and a movable support in each of said last mentioned compartments for said movable devices, and connections, intermediate the bobbin supports and the supports for said devices to cause them to operate simultaneously.

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