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J. TARANTO

MAGAZINE FOR BOX LOOMS

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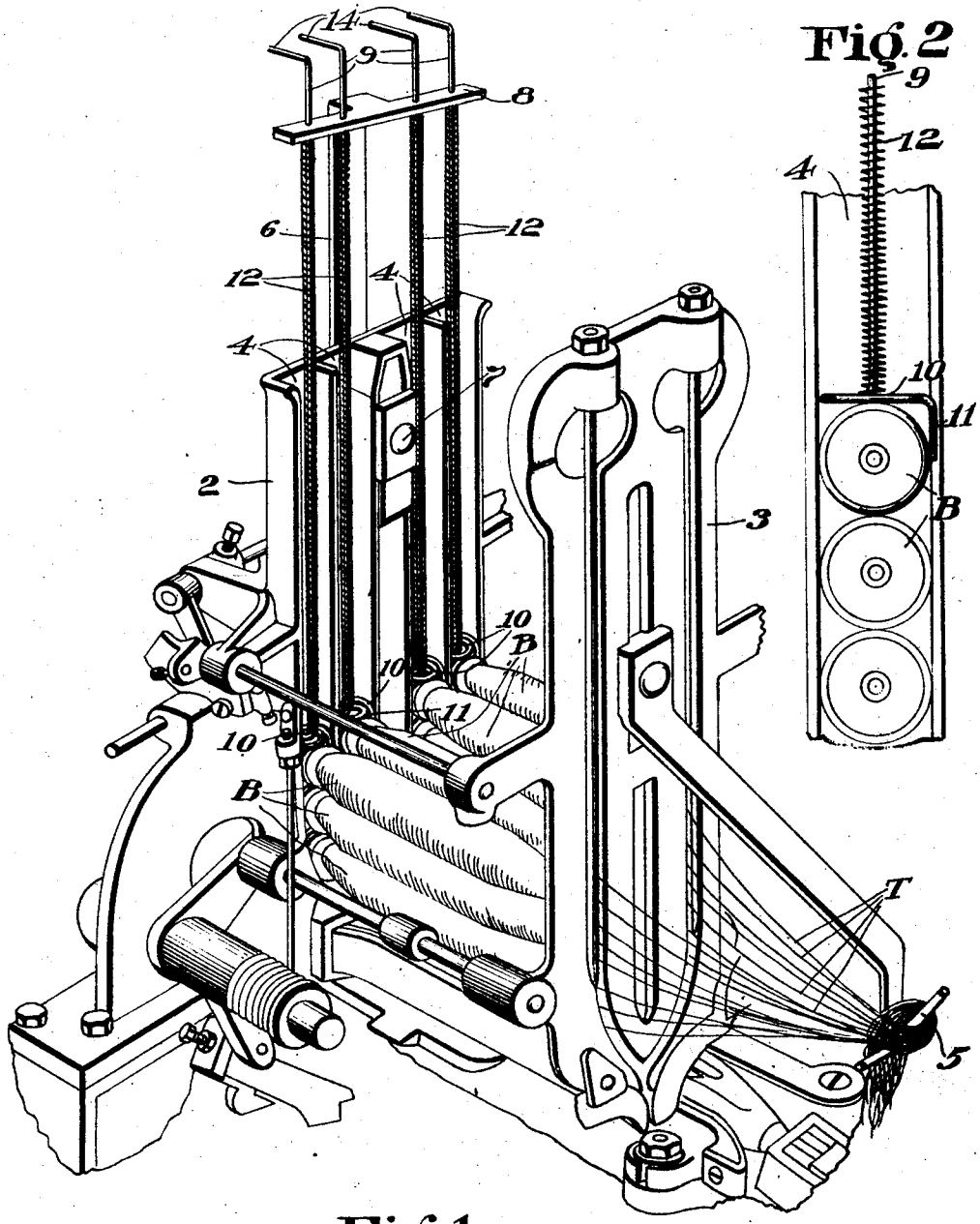


Fig. 1

Fig. 2

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MAGAZINE FOR BOX LOOMS.

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This invention relates to box looms.

A loom of this type includes a magazine having grooves to receive one or more vertical series of bobbins. When the supply of thread on the bobbin in the running shuttle becomes depleted, an automatic mechanism releases the lowermost bobbin in one of the series and a transfer mechanism operates to force it into the shuttle. In placing these bobbins in the magazine a short length of thread or yarn is unwound from each bobbin and its end is attached to a holder with which the magazine is equipped, so that when a bobbin finally is forced into the shuttle the fact that the end of the thread which it carries is fastened will cause the thread to unwind as the shuttle is shot through the shed.

In operating looms of this type it is found that very frequently the threads or ends become broken while the bobbins are still in the magazine, or else are broken during the transfer of the bobbins into the running shuttle. When this occurs the shuttle simply travels idly through the shed without laying a thread in it, and the bobbin is ejected from the shuttle automatically by mechanism controlled by the feeler motion. It is the chief object of the present invention to device means for preventing, or at least substantially reducing, breakages of the character just described.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a perspective view of a magazine of a box loom showing it equipped with apparatus embodying this invention; and

Fig. 2 is an elevation showing a detail of construction.

The drawings show the magazine of the well known Crompton & Knowles loom. This magazine comprises two plates 2 and 3 supported in vertical positions and spaced apart by substantially the length of the bobbin B. The plate 2 is provided with several vertical grooves 4 to receive the butts or bases of the bobbins, while the plate 3 has similar grooves to receive the tips of the bobbins. The magazine shown is designed to support four series of bobbins, the several series differing from each other in color. Short lengths of thread T are unwound from the bobbins when they are placed in the magazine, led through the slots in the plate 3, and fastened around the pins or skewers 5.

I have discovered that the reason for most of the breakage of the threads T while the bobbins are in the magazine, or during the transfer of a bobbin into a shuttle, is that the vibration of the loom imparts to the bobbins a gradual rotary motion in the magazine, and this rotation usually is in such a direction as to wind the threads T on their respective bobbins. This winding motion proceeds until the thread breaks, if it is of relatively fine gage, or until it is so taut that it snaps when the transfer hammer strikes the bobbin and forces it into the shuttle.

In order to prevent an occurrence of this character I have secured a bracket 6 to the plate 2 by means of a bolt 7. The upper end of this bracket is turned over horizontally, as shown at 8, and four rods 9, one for each of the grooves 4, are guided in holes formed in the part 8. These rods may consist simply of heavy wire. The lower end of each rod is coiled, as shown at 10, to form a head which bears on the base or butt of the uppermost bobbin in its respective groove. These rods and heads thus constitute plungers. Preferably each head 10 has an extension 11 projecting therefrom, as clearly shown in Fig. 2, to engage the side of the bobbin base or the edge of the magazine and prevent the plunger from rotating. In order to press the head of each plunger against the base of the bobbin on which it bears, each rod is encircled by a coiled spring 12 which bears at its lower end against the head 10 and at its upper end against the plate 8. The upper ends of the rods preferably are bent at right angles to form handles 14.

In operation, the springs 12 hold the heads 10 of the plungers against the uppermost bobbins in the respective grooves, thus exerting a pressure on all the bobbins in each series. This pressure is sufficient to prevent any rotative movement of the bobbins due to the vibration of the machine. Consequently, any tightening of the threads T from the cause above described is effectually prevented. In loading bobbins into the magazine it is simply necessary to lift each plunger by raising the handle 14, the bobbins then being placed in the grooves in the

usual manner. In fact, the plungers may be raised and set on the upper edge of the plate 2 while the bobbins are being placed in the magazine, and the plungers may subsequently be returned to their operative positions, as shown.

It will be evident that the invention provides an apparatus which can be manufactured very economically, can be quickly attached to machines in operation, and requires practically no care or attention.

While I have herein shown and described the best embodiment of my invention that I have so far devised, I do not desire to be limited to the exact details of the construction shown.

Having thus described my invention, what I desire to claim as new is:

1. In a box loom, a magazine having a groove to receive the bases of a series of bobbins arranged one above the other, a rod having a head arranged to bear on the base of the uppermost bobbin in the groove, a bracket having a part above the magazine in which the rod is guided, and a coiled spring encircling said rod between said bracket and head and serving to press the rod downwardly.

2. In a box loom, a magazine having a groove to receive the bases of a series of bobbins arranged one above the other, a plunger having a head arranged to bear on the base of the uppermost bobbin in the groove and provided with an extension serving to prevent the rotation of said plunger, means for guiding said plunger for vertical movement in said groove, and a coiled spring for urging said plunger downwardly to cause it to press together the entire series of bobbin bases in the groove.

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