March 9, 1948. R. G. TURNER 2,437,627

BRAKE AND DAMPENER FOR ROCKING BOBBIN MAGAZINES

Filed April 2, 1947

FIG. 1

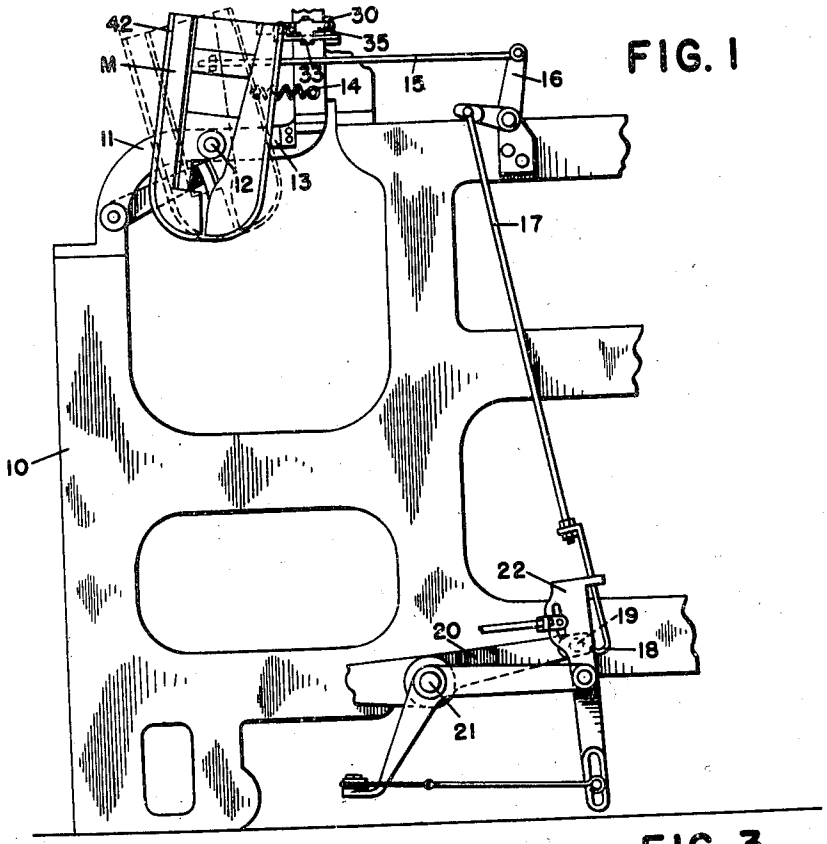


FIG. 2

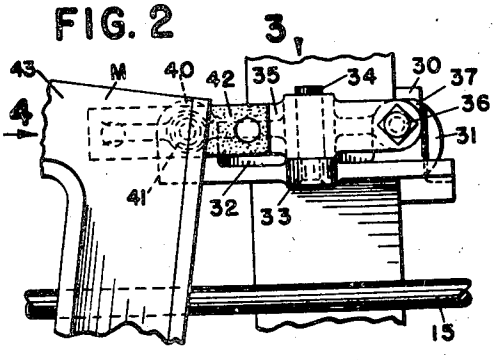


FIG. 3

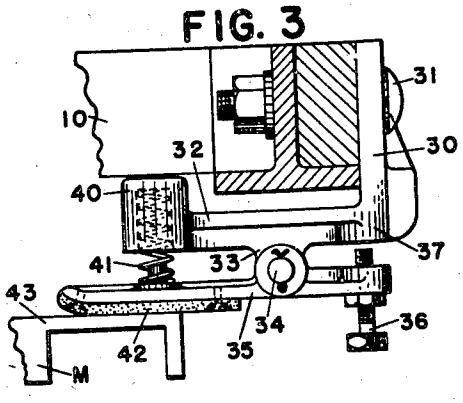
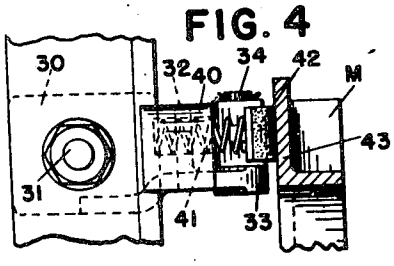


FIG. 4



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BRAKE AND DAMPENER FOR ROCKING BOBBIN MAGAZINES

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2 Claims. (Cl. 139—232)

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This invention relates to improvements in weft replenishing looms of the type employing rocking magazines and it is the general object of the invention to provide means serving as a brake for the magazine when the latter rocks and also as a dampener to arrest vibration thereof during loom operation.

A type of weft replenishing loom using two shuttles which has gone into extensive use utilizes a rocking magazine having two stacks of reserve bobbins. The magazine is mounted on a horizontal pivot and is ordinarily at rest during loom operation to permit transfer of the lowest bobbin in one of the stacks into one of the shuttles. When the other shuttle is to be replenished the magazine rocks from its normal position to place the lowest bobbin in the other stack in transferring position. Subsequent to transfer of a bobbin from the other stack the magazine returns to its normal position. It is found in the operation of such looms that the return motion of the magazine against a stop is likely to cause undesired vibration resulting in disturbance of bobbins in the magazine. It is also found during loom operation when the magazine is at rest that the magazine vibrates with attendant rolling of the bobbins. This latter vibration is increased to some extent by the fact that the magazine is on a pivot and is ordinarily not held positively in fixed position with respect to the loom.

It is an important object of my present invention to provide a combined brake and dampener which will serve as a shock absorber when the magazine returns to its normal position and also prevent vibration of the magazine when the latter is in its normal position.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth.

In the accompanying drawings, wherein a convenient embodiment of my invention is set forth,

Fig. 1 is a side elevation of a loom having my invention applied thereto and showing the magazine in full lines in its normal position and in dotted lines in one of its transferring positons.

Fig. 2 is an enlarged side elevation of the combined brake and dampener and adjacent parts showing the magazine in normal position,

Fig. 3 is a plan view looking in the direction of arrow 3, Fig. 2, parts being in section, and

Fig. 4 is a front elevation looking in the direction of arrow 4, Fig. 2, parts being in section.

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Referring more particularly to Fig. 1, the loom frame 10 is provided with a magazine support 11 carrying a horizontal stud 12 on which is pivotally mounted a rocking magazine M. A stationary stop 13 on support 11 limits movement of the magazine in a clockwise direction as viewed in Fig. 1 and cooperates with spring 14 to hold the magazine in normal position. A rod 15 connected to the magazine has its rear end connected to a bell crank lever 16 pivoted on the loom frame. A rod 17 depending from the lever is provided with a hook 18 for engagement with a stud 19 carried by the rear end of an operating lever 20 pivoted on a stationary stud 21 carried by the loom frame.

The rod 17 is controlled as to its horizontal position by a positioner 22 which moves in timed relation with the shuttle boxes not shown at that end of the loom opposite the magazine. When one of the shuttle boxes is active positioner 22 will locate hook 18 to the rear of stud 19, but when the other shuttle box is active positioner 22 moves forwardly to locate the hook 18 in the path of stud 19. When a replenishing operation is called lever 20 will rock in a clockwise direction and stud 19 will have an idle motion if hook 18 is behind the stud, thereby permitting the magazine to remain against stop 13.

If, on the other hand, replenishment is called when hook 18 has been moved forwardly stud 19 will depress rod 17 to rock the magazine in a counter-clockwise direction, see dotted lines Fig. 1, away from stop 13 to locate the lowest bobbin in the other stack of bobbins in transfer position. As stud 19 rises under these latter conditions the magazine will be rocked back to its normal position by spring 14. It is ordinarily necessary to move stud 19 to a sufficiently high position to permit hook 18 to move rearwardly therefrom, and the result of this condition is that the magazine engages stop 13 before stud 19 has completed its up motion. There is therefore an attendant shock or abrupt stoppage of the magazine when it engages the stop 13. The effect of this sudden stoppage is to disturb the bobbins in the magazine and also tend to change the setting of the stop.

When the magazine is in its normal position it is subject to vibration due to loom operation, and this vibration causes the bobbins to roll on their axes with consequent undue tightening or slacking of their weft ends. The likelihood of vibration of the magazine is increased by the fact that it is supported on a pivotal mounting and is therefore subject to slight movements away from the stop 13.

The foregoing is of usual construction and operation and is set forth more fully in my prior Patent No. 2,128,974.

In carrying my present invention into effect I provide a combined brake and vibration dampener positioned on the loom to engage part of the magazine when the latter is in its normal position. As shown in Figs. 2 and 3 a carrier 30 is bolted at 31 to the loom frame 10 and has a forwardly extending horizontal arm 32. A lateral foot 33 on arm 32 supports an upright stud 34 on which is pivoted a brake arm 35. The rear end of the latter is provided with an adjustable stop screw 36 for engagement with a boss 37 on the carrier 30. The front end of arm 32 is provided with a barrel 40 in which is located compression spring 41 the outer or free end of which engages the forward end of the brake arm 35. The latter may be provided with a pad of friction material 42 such as leather for engagement with the inner vertical bobbin guide plate 43 of the magazine.

In normal operation the stop screw 36 is spaced slightly away from stop boss 37 so that the spring 41 can urge the friction pad 42 of the brake arm 35 against the magazine plate 43, thereby dampening vibration of the magazine. When a replenishing operation of the loom requires rocking of the magazine, plate 43 will move forwardly, or to the left as viewed in Fig. 3, out of engagement with the brake lever 35 and spring 41 will move the latter into the path of the plate 43 until such movement is stopped by screw 36.

When the magazine rocks back to its normal position the rear part of plate 43 will engage the brake shoe the effect of which is to retard return movement of the magazine so that the latter will approach its stop 13 gradually and without undue shock.

The brake arm 35 is preferably so located as to engage the upper part of the magazine plate 43 at a considerable distance above the pivot stud 12. The brake is sufficiently strong to arrest any tendency which the rocking magazine may have due to loom vibration to move around its support stud 12 away from the stop 13. There may be some vibration of the magazine during loom operation, but this vibration is reduced to a minimum due to the brake arm 35.

From the foregoing it will be seen that I have provided a simple form of brake and vibration dampener having a yieldingly mounted brake arm 35 which engages a part of the magazine, such as plate 43, to prevent vibration of the magazine away from its stop 13. Arm 35 also retards return movement of the magazine to its normal position and therefore eliminates shock incident to engagement of the magazine with its stop 13.

Having thus described my invention it will be seen that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed, but what I claim is:

1. In a weft replenishing loom having a frame, a reserve bobbin magazine having an end plate, a pivotal support for the magazine on the frame, a stop on the frame, a spring holding the magazine in normal position against the stop, means rocking the magazine about said pivotal support from said normal position to a transfer position, said spring thereafter returning the magazine to normal position, and a brake and vibration dampener member pivotally and resiliently mounted with respect to the loom frame and positioned to engage said end plate when the magazine returns to normal position to retard movement thereof and remain in engagement with said end plate when the magazine is in normal position to prevent vibration thereof around said pivotal mounting.

2. In a weft replenishing loom having a frame, a reserve bobbin magazine having an end plate, a pivotal support on the frame for the magazine, a stop on the frame, a spring holding the magazine in normal position against the stop, means rocking the magazine about said pivotal support from said normal position to a transfer position, said spring thereafter returning the magazine to normal position, a stand secured to the frame, a brake and vibration dampener arm pivoted on the stand, and resilient means on the stand holding the arm against said end plate to arrest vibration of the magazine around said pivotal support when the magazine is in normal position and engage said end plate to retard angular movement of the magazine about said pivotal support when the magazine returns to said normal position.

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