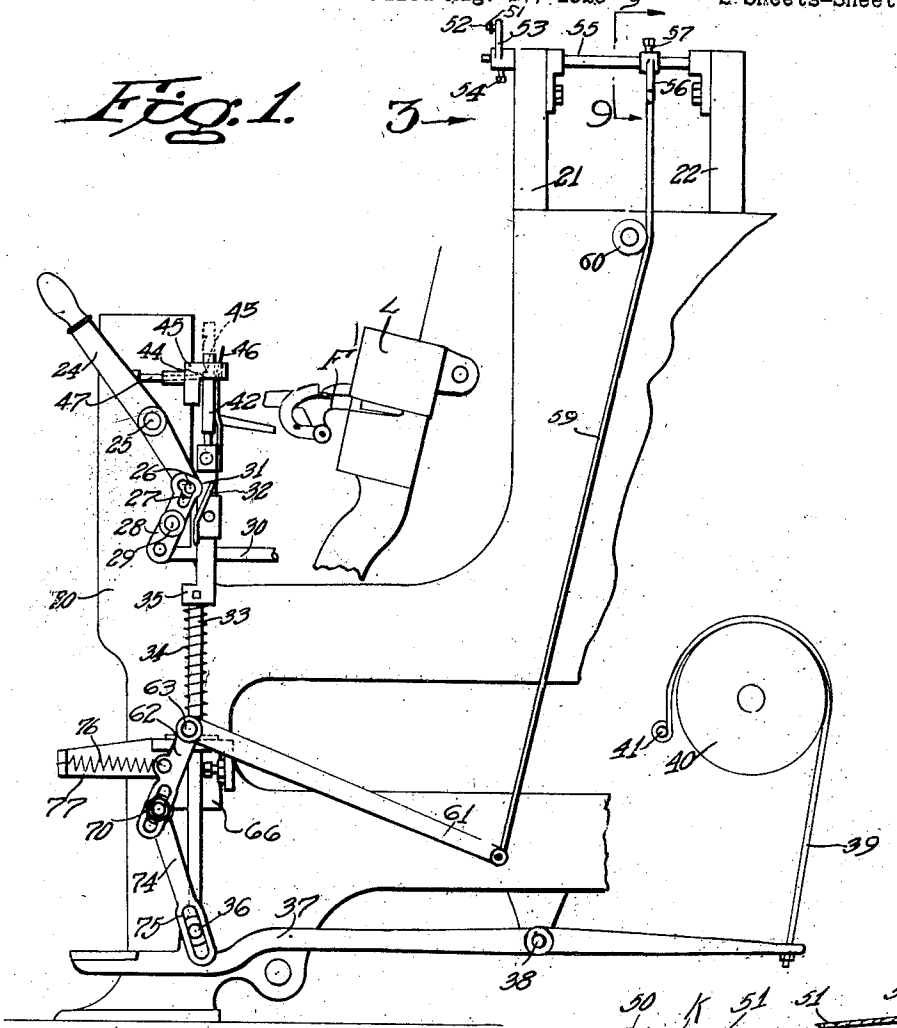
June 24, 1930. W. M. WATTIE 1,766,862

BRAKE CONTROLLING MECHANISM FOR LOOMS

Filed Aug. 27, 1929 2 Sheets-Sheet 1

Fig. 1.



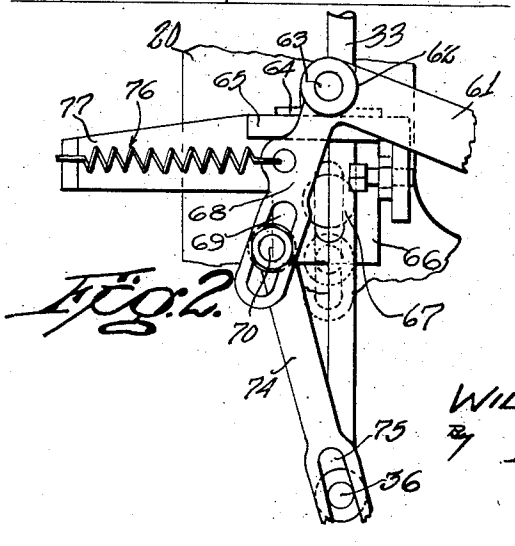


Fig. 2.

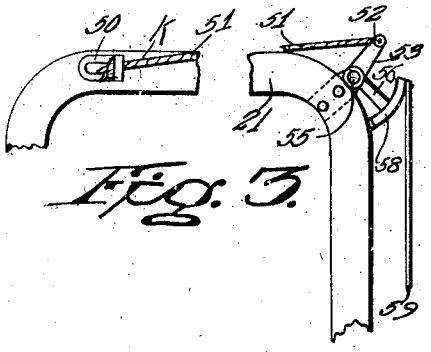


Fig. 3.

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BRAKE CONTROLLING MECHANISM FOR LOOMS

Filed Aug. 27, 1929 2 Sheets-Sheet 2

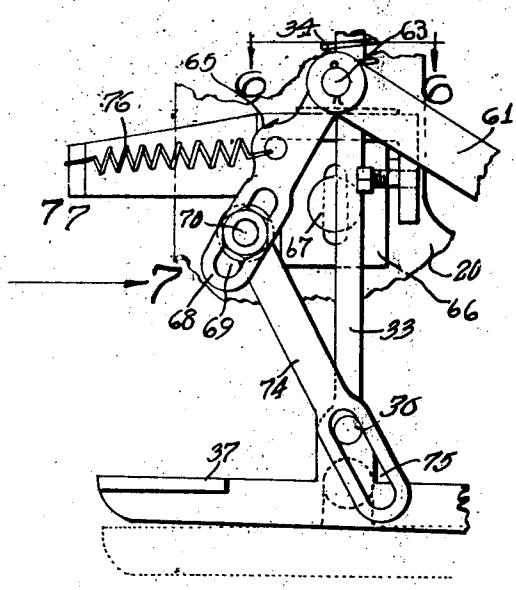


Fig. 4.

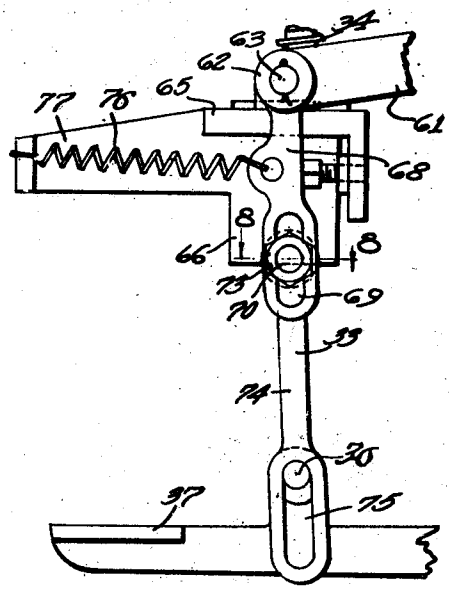


Fig. 5.

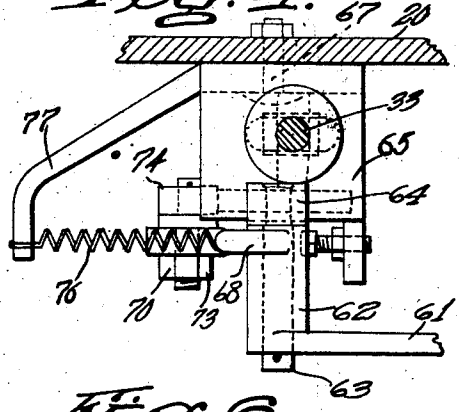


Fig. 6.

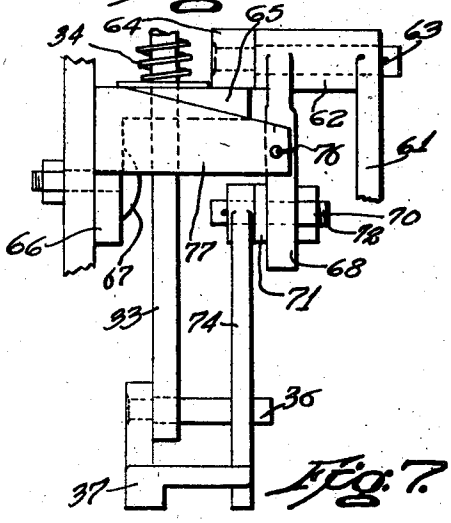


Fig. 7.

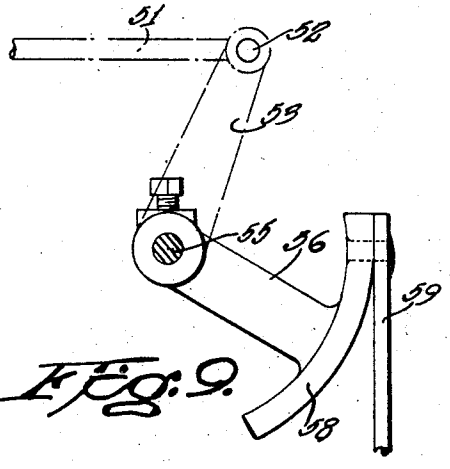


Fig. 9.

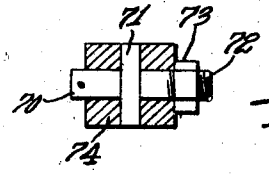


Fig. 8.

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Patented June 24, 1930 1,766,862

UNITED STATES PATENT OFFICE

WILLIAM M. WATTIE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

BRAKE-CONTROLLING MECHANISM FOR LOOMS

Application filed August 27, 1929. Serial No. 388,827.

This invention relates to improvements in brake controlling mechanisms for looms and it is the general object of the invention to enable the weaver when at the head end of the loom to relieve the brake after the loom has stopped.

In certain types of looms, such as those on which worsted cloth is woven, it is customary to have the harness controlling mechanism or the so-called head located at one end of the loom, and the power or driving mechanism at the other end. In order to stop the loom as quickly as possible upon breakage of the filling thread it is customary to provide a brake which when set can be relieved only at the driving end of the loom. It not infrequently happens on fancy looms where two or more shuttles are employed that a picking-out operation is necessary after the loom has been stopped by the filling stop motion, this operation requiring the weaver to manipulate the head at the end of the loom opposite the brake mechanism. In looms as at present constructed it is necessary for the weaver to go to the driving end of the loom and relieve the brake before starting the pick-out operation. It is an important object of my present invention to place means within reach of the weaver so that the brake can be relieved without requiring the weaver to go to the power end of the loom.

It is a more particular object of my invention to provide a brake relieving member to extend along the loom and be operatively connected at the brake end of the loom to a toggle joint which will operate the brake mechanism with an expenditure of comparatively little effort on the part of the weaver.

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 claims.

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

Fig. 1 is a side elevation of a portion of the loom showing the brake controlling mechanism,

Fig. 2 is an end elevation on an enlarged scale of certain of the structure shown in Fig. 1,

Fig. 3 is a front elevation of the front upper portion of a loom having part of my invention applied thereto, the harness controlling mechanism being indicated on one end and the brake structure at the opposite end,

Figs. 4 and 5 are views similar to Fig. 2 but showing the parts in different positions during the operation of the device,

Fig. 6 is a horizontal section looking down on line 6—6 of Fig. 4,

Fig. 7 is a front elevation taken in the direction of arrow 7, Fig. 4,

Fig. 8 is a detailed section on line 8—8 of Fig. 5, and

Fig. 9 is an enlarged vertical section on line 9—9 of Fig. 1.

I have shown in my present invention adapted more particularly to the so-called Knowles loom which operates with a center filling fork and may have a head for controlling the harnesses at the left hand end and driving mechanism at the right hand end.

Referring particularly to Fig. 1 I have shown a loom side 20 having front and back arches 21 and 22, respectively. A shipper handle 24 is secured to a shipper rod 25 and carries at the lower end thereof a pin 26 which is received by a slot 27 in lever 28. The latter is pivoted at 29 to the loom frame and the lower end thereof is connected to the rearwardly extending rod 30 which controls the shipping mechanism not shown herein. When the loom is running the shipper handle is moved to the left as viewed in Fig. 1 or in its forward position, the pin 26 being in the rear portion of the slot 27 and the rod 30 being moved forwardly. The upper part of the lever 28 is rounded as at 31 and is positioned for engagement with an upwardly and rearwardly inclined cam 32 moving with an upright rod 33. The latter is surrounded by a compression spring 34 interposed between casting 35 on the rod and a fixed stand 66 through which the rod extends.

The lower end of rod 33 is pivoted to stud 36 carried by foot lever 37 pivoted on fixed stud 38. The rear end of the lever 37 is connected to a flexible brake band 39 which extends around a portion of brake drum 40 and is anchored to the loom stand at 41. The upper end of casting 35 has secured therein a bar 42 having a notch 43 which engages a retaining edge 44 on bracket 45 secured to the loomside. A leaf spring 46 secured to the casting 35 tends to hold the notch and retaining edge in holding relation. A filling fork designated generally at F on the lay L is effective through mechanism not shown herein to move a plunger 47 rearwardly against the bar 42 when a fault occurs in the filling.

Under normal running conditions the notch holds the rod 33 and lever 37 down, so that the rear end of the lever is raised to slacken the flexible strap or band 39. When the plunger 47 acts to release the bar 42, the spring 34 will move the rod 33 upwardly, causing cam 32 to rock lever 28 to throw the driving power off, and also lowering the rear end of lever 37 so that the strap or band 39 is tightened to hold the brake drum 40.

The matter thus far described is of usual construction, forming no part of my present invention, and may be substantially the same as set forth in prior patent to Gagnon No. 1,369,417.

By referring to Fig. 3 it will be seen that the head motion K is located at the left hand side of the loom or the side opposite the brake lever 37. Where the loom is of substantial width it is desirable that the weaver shall be able to depress the foot lever rod 33 and thereby slacken the band 39.

In order to accomplish this result I provide a clip 50 on the forward arch 21 and secure therein one end of a cable or rope 51. The right hand end of the latter is attached as at 52 to the upper end of an arm 53 secured by means of a set screw 54 to a small shaft 55 mounted in the arches. A second arm 56 is secured to the shaft by means of set screw 57 and is provided with an arcuate end 58, see Fig. 9, to the upper end of which is secured a flexible strap 59. The strap extends downwardly around guide sheave 60 and is attached at the lower end thereof to an arm 61 of a control lever 62 pivoted on fixed stud 63. The latter is supported in a bearing 64 mounted on a horizontal shelf 65 of the previously mentioned bracket 66 held to the loomside by means of bolt 67.

The lever 62 has a depending arm 68 slotted 69 to receive an adjustably mounted stud 70. As shown in Fig. 8 this stud is provided with a shoulder 71 and a threaded end 72 which receives a check nut 73. The nut is drawn tightly against the arm 68 so as to hold the stud rigidly with respect to the lever 62. The position of the stud with respect to the axis of the lever may be varied by loosening the nut 73. Pivoted to the stud 70 is the upper end of a link 74 the lower end of which is slotted as at 75 to receive the extended end of stud 36. In order that the strap 59 may be held taut and the lever 62 retained in normal position I provide a tension spring 76 interposed between the arm 68 and a finger 77 preferably extending from the bracket 66.

In operation the parts will be in the position set forth in Fig. 1, the lay moving toward and from the shipper handle during the normal running of the loom. The rod 33 will be in down position because notch 43 is in engagement with edge 44. The lever 62 and link 74 will be down as shown in Fig. 1, the stud 70 being out of alignment with the studs 36 and 63, and the band 39 will be slack. When the loom stops because of the filling fault the plunger 47 will operate as already set forth and the rod 33 will be moved upwardly by compression spring 34, the stud 36 moving up in the slot 75 and the band 39 gripping the drum 40 to stop the loom.

Upon noticing that the loom has stopped for a filling fault the weaver will go to the left or head end of the loom preparatory to making a pick-out. The rope 51 will be pulled to the left as viewed in Fig. 3, thereupon causing upward movement of the strap 59 with resultant rocking of the lever 62 around the fixed stud 63. The link 74 is thereupon moved downwardly into engagement with the stud 36. Continued pulling of the cord 51 will move the rod 33 downwardly until the leaf spring 42 is able to reestablish holding connections between the notch 43 and the retaining edge 44. This section raises the rear end of the lever 37, and thereby relieves the brake. The pick-out may then be made without requiring the weaver to go to the power end of the loom.

From the foregoing it will be seen that I have provided a very simple means for enabling the weaver to relieve the brake while remaining at the head end of the loom, thereby saving time and rendering the pick-out operation more convenient. It will also be seen that I employ a toggle joint so that the depression of the rod 33 will cause very little effort on the part of the weaver. Moreover, under normal conditions the link 74 is in such a position as to relieve the parts connected thereto of strain.

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 loom having brake mechanism located at one side of the loom and movable to braking and also non-braking positions, a lever operatively connected to the brake mechanism and movable therewith, means defining a toggle joint interposed between a fixed point and the lever, and a connection from the toggle extending to the opposite side of the loom and effective when operated with the brake in braking position to move the toggle and lever to move the brake mechanism from braking to non-braking position.

2. In a loom having a brake mechanism located at one side thereof and having a vertically movable control member for the mechanism, the mechanism movable to braking and non-braking positions, a lever movable about a fixed axis, a link pivotally connected to the lever and capable of being operatively related to the control member, the link and lever in effect forming a toggle joint, a flexible connection connected to the lever and extending to the opposite side of the loom and capable when pulled with the brake in braking position of causing the toggle joint to move the control member to cause the brake to move from braking to non-braking position.

3. In a loom having brake mechanism located at one side thereof and movable to braking and also non-braking positions, a brake lever operatively connected to the mechanism and movable with the latter to braking and non-braking positions, a control lever movable about a fixed axis, a link interposed between the levers and forming with the control lever a toggle joint, and flexible connections extending from the control lever to the opposite side of the loom and capable when pulled with the brake in braking position to actuate the toggle to move the brake lever from braking to non-braking position.

4. In a loom having a brake mechanism located at one side thereof and movable to braking and non-braking positions, an element movable with the mechanism, a lever movable about a fixed axis, a link operatively connected to the lever and the element and forming with the lever a toggle joint, and a connection from the lever extending to the opposite side of the loom and effective when pulled with the brake in braking position to straighten the toggle and cause movement of the lever to move the brake mechanism from braking to non-braking position.

5. In a loom having a brake mechanism movable to braking and non-braking positions, a flexible control member operatively connected to the braking mechanism and extending to that side of the loom opposite the braking mechanism, guide means for the flexible controller, and brake relieving mechanism operatively connected to the brake mechanism and the flexible controller, the latter when pulled with the brake in braking position rendering the relieving mechanism effective to move the brake mechanism from braking to non-braking position.

In testimony whereof I have hereunto affixed my signature.

WILLIAM M. WATTIE.