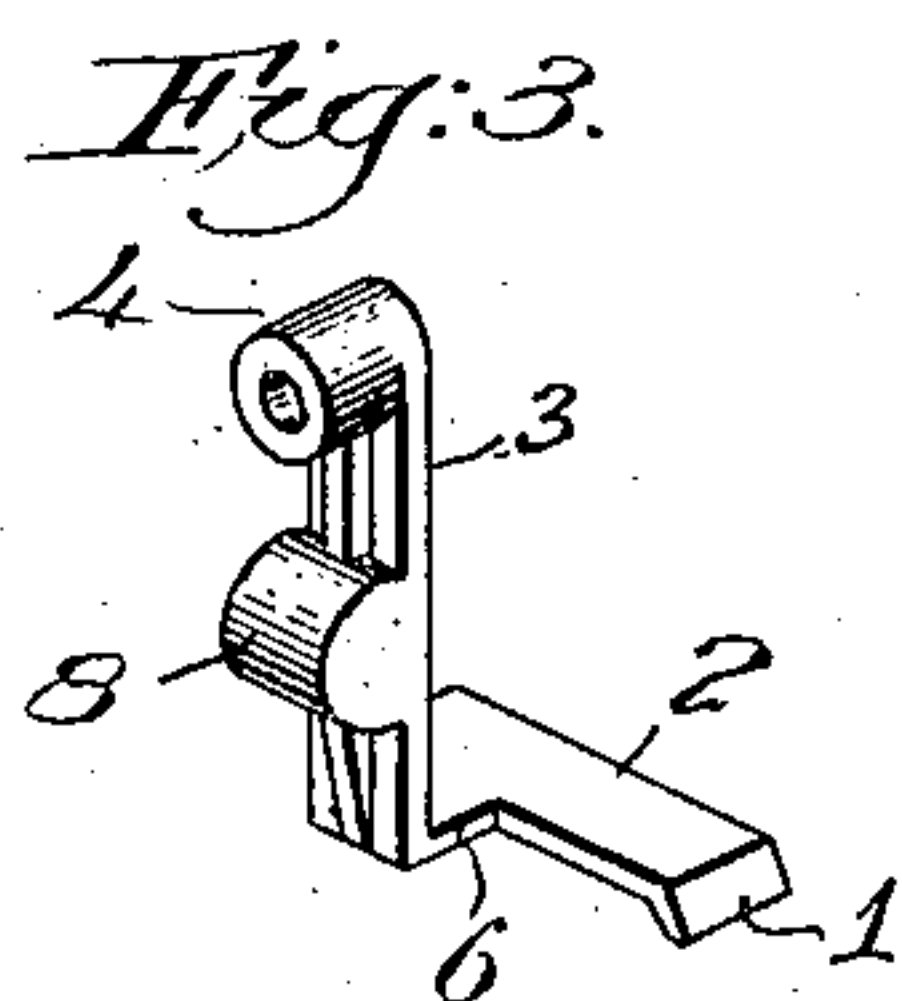
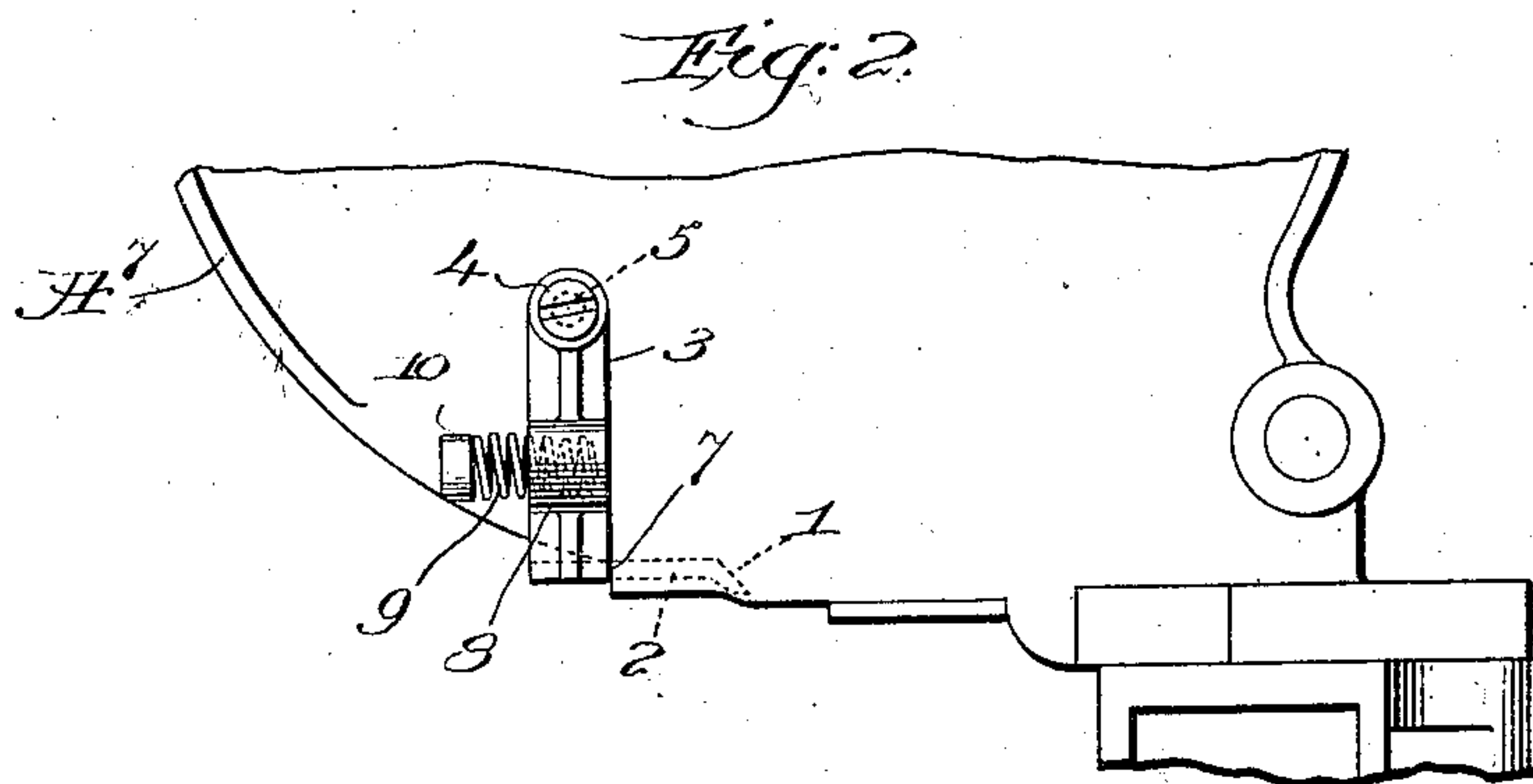
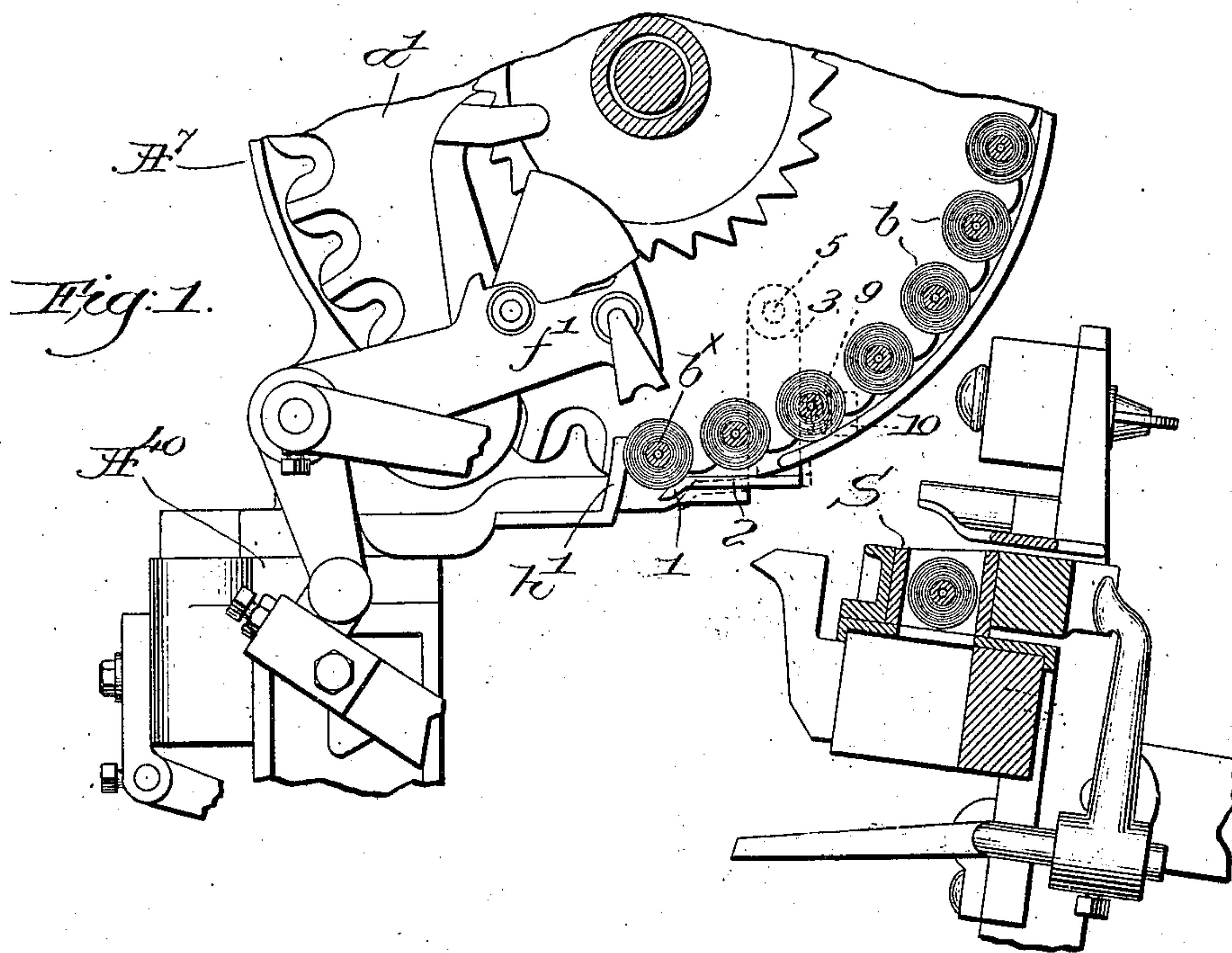


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W. B. BIRMINGHAM.
FILLING REPLENISHING MECHANISM FOR LOOMS.

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FILLING-REPLENISHING MECHANISM FOR LOOMS.

No. 846,773.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed October 1, 1906. Serial No. 336,819.

To all whom it may concern:

Be it known that I, WILLBURN B. BIRMINGHAM, a citizen of the United States, and a resident of Raleigh, county of Wake, State of North Carolina, have invented an Improvement in Filling-Replenishing Mechanism for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention relates particularly to filling-replenishing looms of the Northrop type, such as shown in United States Patent No. 529,940, wherein a filling carrier or bobbin is at the proper time transferred automatically from a filling-feeder to the shuttle; and my invention has for its object the production of a novel combined supporting and guiding device or buffer to cooperate with a filling-carrier when transferred.

Figure 1 is a side elevation and partial transverse section of a portion of the filling-replenishing mechanism of a Northrop loom with one embodiment of my invention applied thereto, the replenishing mechanism being at rest. Fig. 2 is an inner side elevation of the feeder-stand, showing my novel buffer mounted thereon. Fig. 3 is a perspective view, detached, of the buffer and the support therefor.

The feeder-stand A^7 on the breast-beam A^{40} , the filling carriers or bobbins b , supported in the intermittingly-rotatable feeder, (one of the disks a' thereof being shown in Fig. 1,) the transferrer f' to remove the filling-carriers and transfer them to the running-shuttle S , and the fixed wall or abutment h' on the stand forming one side of a discharge-throat, may be and are all of well-known construction.

As will be understood by those familiar with the Northrop type of loom the abutment h' directs or guides one side of the head of a filling-carrier as the head when transferred passes through the throat.

Opposite the abutment and forming the opposite side of the throat is a yieldingly-controlled buffer which cooperates with and guides and supports the adjacent side of a filling-carrier head when transferred, and in my present invention such buffer is mounted to swing on a fixed fulcrum located at a distance above and back of the buffer for a purpose to be explained.

Herein the buffer 1 is shown as a flat but inclined or beveled extremity or foot formed on the end of an extension 2, projecting rigidly from the lower end of an elongated arm 3, the latter and its extension 2 forming a substantially L-shaped support for the buffer. At its upper end the arm has a lateral hub 4 on the face opposite that from which the extension 2 projects, the hub receiving loosely a fulcrum stud or pin 5, fixedly held in the stand A^7 and projecting horizontally from the inner side thereof. Such fulcrum-pin is located at a distance above both the abutment h' and the buffer and well behind them, as herein shown, so that the movement of the buffer toward and from the abutment will be in a short and relatively flat arc. This will be manifest by comparing the full and dotted line positions of the buffer in Fig. 1.

As shown, the arm 3 is located adjacent the inner side of the feeder-stand A^7 , and the extension 2 is laterally offset from the arm at 6, Fig. 3, to permit said extension to lie adjacent the outer side of the stand, with the buffer 1 opposite the abutment. The stand is cut away to leave a shoulder 7, which serves as a stop for the buffer-support, the offset 6 when resting against the shoulder limiting movement of the buffer toward the abutment. A tubular spring seat or pocket 8 is formed on the arm 3 to receive one end of a spring 9, the other end resting against a lug 10 on the stand, (see Fig. 2,) the spring normally acting to yieldingly press the buffer toward the abutment h' .

The buffer and its L-shaped support are conveniently made as a casting, the buffer thereby being rigid on the support.

As shown in Fig. 1 by full lines, the normal position of the buffer is in a plane opposite and inclined with relation to the abutment, the buffer extending somewhat beneath the head of the filling-carrier b^x next to be transferred, thereby assisting in supporting the filling-carrier. When the transferrer f' acts to force the latter downward, the head passes down between the abutment and buffer, sliding along the inclined face thereof and moving it rearwardly against the action of spring 9 away from the abutment h' to thereby widen the throat sufficiently for the head of the filling-carrier to pass therethrough. Such movement of the buffer is in a circular

arc having the fulcrum 5 as a center; but as the fulcrum is such a distance above the buffer and back of it and as the widening of the throat is comparatively small the arc of movement of the buffer will be quite flat. Consequently while the buffer is moved out of the way of the filling-carrier head it cannot descend far enough to by any possibility come into engagement with the shuttle or the shuttle-box as the lay swings up and back. The spring 9 returns the buffer to operative position as soon as the head of the filling-carrier has passed the lower edge of the buffer, the latter cooperating with the head until the same is well into the shuttle. While the buffer is thus arranged to approach the shuttle very closely when transfer is effected, it cannot go far enough to engage the shuttle, so that all liability of smashing the shuttle or the replenishing mechanism from such engagement is obviated.

The form of buffer shown is very strong and durable; and it is easily and cheaply made.

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

1. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a fixed abutment forming one side of a discharge-throat through which the head of a filling-carrier passes when transferred from the feeder, a buffer to cooperate with and guide and support the opposite side of the head of the filling-carrier, a depending arm on the lower end of which the buffer is mounted, a fixed fulcrum at the upper end of and on which the arm swings toward and from the abutment, and a spring to act upon the arm and normally retain the buffer in operative position.

2. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a fixed abutment to cooperate with and guide one side of the head of a filling-carrier when transferred, a buffer to cooperate with the opposite side of the head, supporting and guiding the same, an elongated substantially L-shaped support on the lower end of which the buffer is mounted, a fixed fulcrum for the upper end of and on which the support swings toward and from the abutment, and means to yieldingly press the support toward the abutment and maintain the buffer operative.

3. The combination, with an intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, and a transfer, of a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, an oppositely-located buffer fulcrumed on the stand above and back of the abutment, a spring to yieldingly move the buffer into operative position, and a stop to limit movement of the buffer to-

ward the abutment, said buffer forming the other side of the discharge-throat.

4. The combination, with an intermittingly-rotatable feeder to hold a plurality of filling-carriers, a stand on which it is mounted, and a transfer, of a fixed abutment forming one side of a discharge-throat for a filling-carrier when transferred, an oppositely-located buffer forming the other side of the throat, a depending arm fulcrumed at its upper end on the stand and having a rigid forward extension at its lower end on which the buffer is mounted, and a spring to act upon the arm and normally position the buffer.

5. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of a fixed abutment forming one side of a discharge-throat through which the head of a filling-carrier passes when transferred from the feeder, a depending L-shaped support having a fixed fulcrum above and back of the abutment, a spring to press the support toward the abutment, and an inclined buffer on the lower end of the support opposite the abutment, to cooperate with and guide and support the adjacent side of a filling-carrier head when transferred.

6. The combination, with a feeder to hold a plurality of filling-carriers, and a transfer, of an abutment, a spring-controlled buffer opposite the abutment, a buffer-support rigidly connected with the buffer and upturned above it, and a fulcrum for and on which the upper end of the buffer-support is pivotally mounted.

7. A support and guide for a filling-carrier in filling-replenishing mechanism for looms, consisting of an L-shaped support having a fulcrum-hub at its upper end and an inclined or beveled foot at its lower end, a spring-seat on the support, and a fixed fulcrum on which the fulcrum-hub is loosely mounted.

8. The combination, with a filling-feeder, of a discharge-throat therefor having a fixed side, a spring-controlled buffer forming the opposite side and movable toward and from the fixed side a fixed fulcrum located at a distance above and back of the buffer and upon which it is movable and a stop to limit movement of the buffer toward the fixed side of the throat.

9. An L-shaped support for a filling-carrier in filling-replenishing mechanism for looms, pivoted and sustained at its upper end only and having a beveled foot at its lower end, and means for holding it yieldingly in the path of the replenishing filling-carrier.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLBURN B. BIRMINGHAM.

Witnesses:

J. M. BEASLEY,

L. D. WOMBLE.