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Patented June 19, 1900.

J. A. WATERMAN.

FEED CONTROLLING MECHANISM FOR SAWMILL CARRIAGES.

(Application filed Dec. 26, 1899.)

(No Model.)

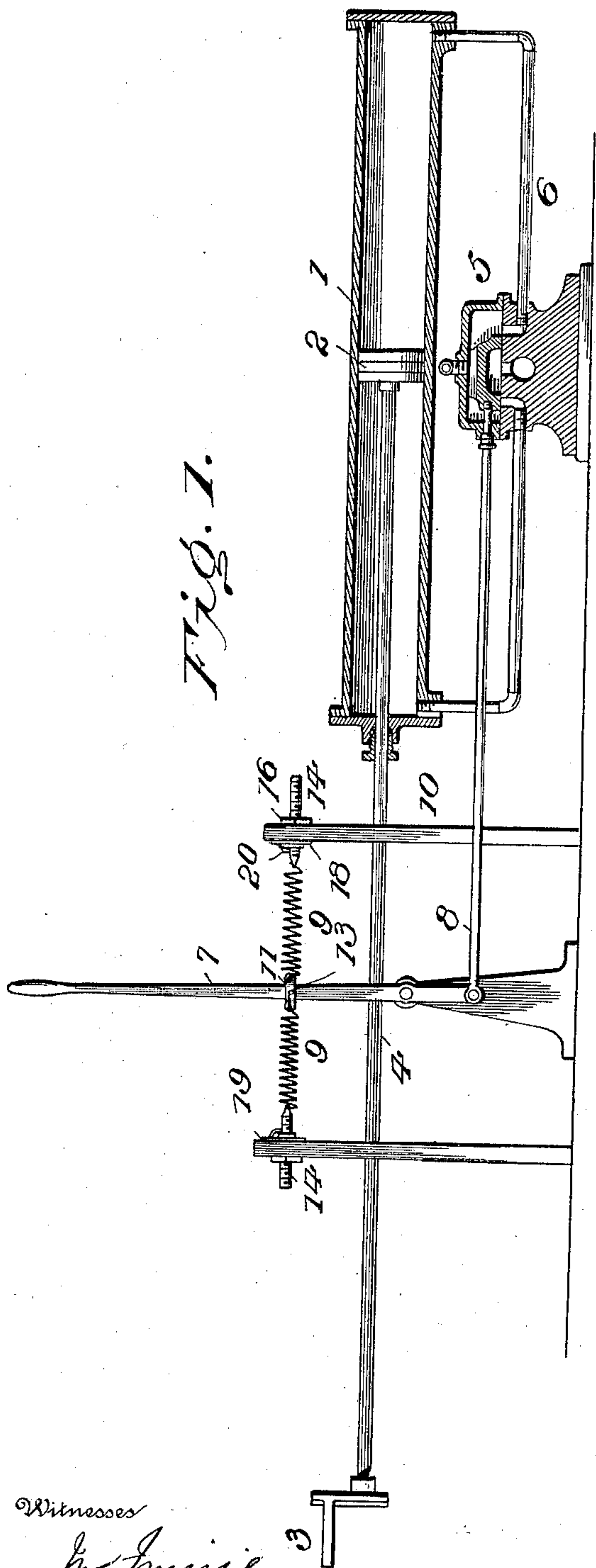


Fig. 2.

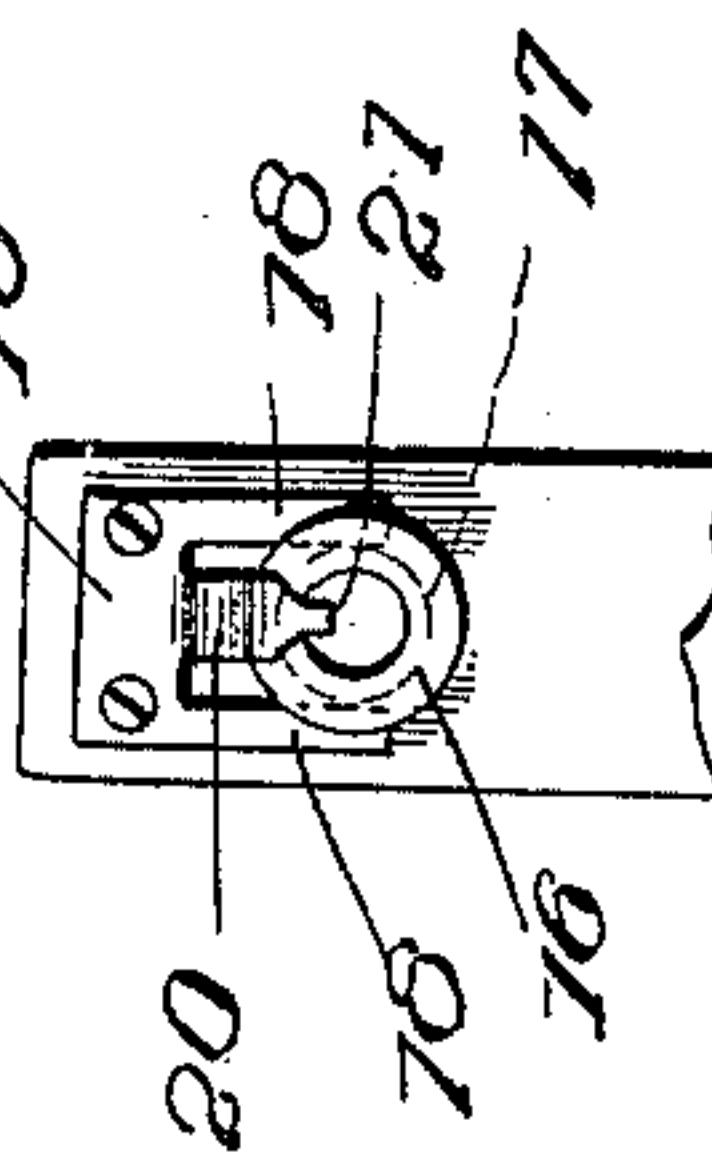


Fig. 4.

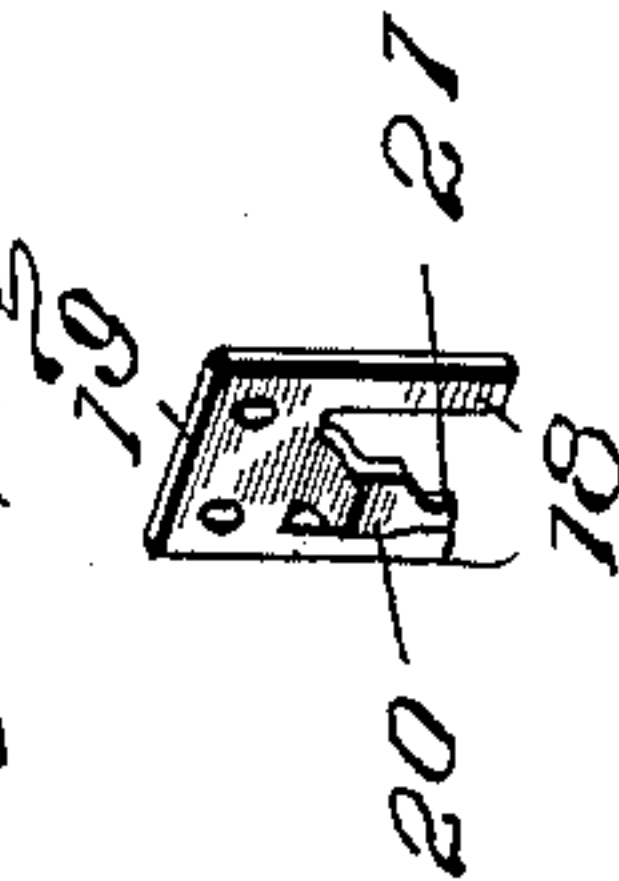
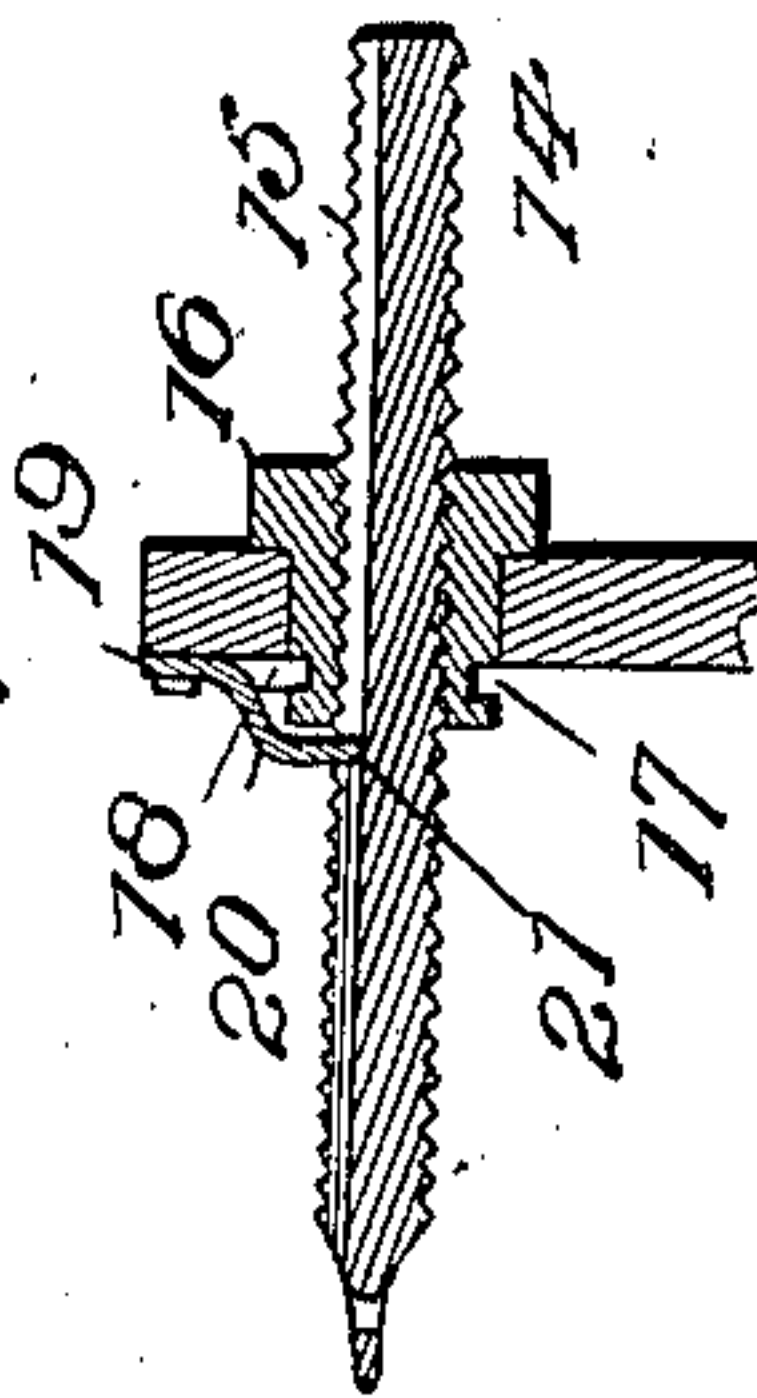


FIG. 5.



Fig. 2.



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FEED-CONTROLLING MECHANISM FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 652,062, dated June 19, 1900.

Application filed December 26, 1899. Serial No. 741,592. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. WATERMAN, a citizen of the United States, residing at Shortville, in the county of Clark and State of Wisconsin, have invented certain new and useful Improvements in Feed-Controlling Mechanism for Sawmill-Carriages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the feed mechanism of the reciprocating carriages of sawmills, the purpose being to prevent injury to the operator and machinery in the event of the controlling-lever slipping from the grasp of the operator or breaking, the energizing agent being automatically cut off in either direction of travel of the carriage, whereby the latter is stopped the instant the abnormal condition occurs.

The improvement consists, essentially, of the novel features, details of construction, and combination of the parts, which hereinafter will be more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a diagrammatic view showing the invention operatively applied. Fig. 2 is a sectional detail of the upper end portion of a standard and the adjusting means for the springs, showing the relation of the parts. Fig. 3 is a front view. Fig. 4 is a detail view of the lock-plate for the nut and tension-screw. Fig. 5 is a detail view of the clip for attaching the springs to the operating-lever.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The cylinder 1, piston 2, operating therein, carriage 3, attached to the end of the piston-rod 4, valve mechanism 5, pipes 6, connecting opposite ends of the cylinder with the valve mechanism, and the operating-lever 7 are well-known parts of woodworking machinery for imparting a reciprocating movement to the work-holder required to traverse a predetermined path in opposite directions. A rod 8 connects the lever 7 with the valve of

the mechanism 5, whereby the admission of the operating agent to opposite ends of the cylinder in alternation is controlled.

Under normal conditions the lever 7 occupies a neutral position, with the motive agent cut off from both ends of the cylinder 1. Upon moving the lever forward or backward the valve attached to the rod 8 is correspondingly moved to admit the motive agent to the desired end of the cylinder for actuation of the carriage in the proper direction. This lever 7 is held by the operator, and it frequently happens that it slips from the grasp or becomes broken. In either case it is desirable to return the lever to a normal position, so as to shut off the supply of motive agent to the cylinder and stop the further movement of the carriage.

The aforesaid result is attained by the springs 9, disposed upon opposite sides of the lever and extending oppositely therefrom and adjustably attached at their outer ends to standards 10, rising from a base or support. A clip composed of companion plates 11 is applied to the lever. These plates have their middle portions curved in opposite directions to receive between them the lever, and clamp-screws 12 connect the ends of the plates and cause them to grip the sides of the lever. Loops 13 are formed with or applied centrally to the plates 11, and the inner ends of the springs 9 are attached thereto. This clip enables the attachment to be applied to any feed-controlling lever.

The outer ends of the springs 9 are attached to externally-threaded rods 14, each having a longitudinal groove 15 and movable with reference to the supporting-standard 10. A nut 16 is rotatably mounted in each standard, and its reduced part is formed with an annular groove 17, which receives the legs 18 of a lock-plate 19, attached to the standard 10. By this means the nut is held to the standard against casual displacement and is rotatable to effect a longitudinal movement of the rod 14 when it is required to increase or lessen the tension of the spring. The lock-plate 19 is formed with legs 18 to embrace the sides of the rod 14 and enter the groove 17 of the nut and with a tongue 20, terminat-

ing in an extension 21, which projects into the groove 15 and prevents rotation of the rod 14 when turning the nut 16 to effect longitudinal adjustment of said rod when it is required to vary the tension of the spring.

The automatic positioning means for the operating-lever has the springs 9 adjusted so as to exert an equal force upon opposite sides of the lever, thereby insuring its correct positioning when released from the operator's control. The adjusting means for the rods 14 afford convenient and easily-operable devices for positively moving the said rods in each direction, which is of vital consequence in securing nicety and precision of adjustment of the tension of the springs.

The device can be applied to the feed mechanism of any reciprocating carriage, and when the lever 7 is moved from a neutral position, either forward or backward, one spring is compressed and the other expanded, and when the lever is released the combined action of the spring return the lever to a normal position quickly and positively and effects a stopping of the carriage.

Having thus described the invention, what is claimed as new is—

1. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, springs attached to the said lever and extending therefrom in opposite directions, and means for adjustably connecting the outer ends of the springs to a support, substantially as described.

2. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, a clip comprising companion plates clamped against opposite sides of the lever and having loops at an intermediate point, and springs attached to the loops and extending in opposite directions, substantially as specified.

3. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, springs attached to the said lever and extending therefrom in opposite directions, standards, a nut rotatably fitted to each standard, a rod threaded into each nut and having the outer end of each of the said springs attached, respectively, thereto, and a lock-plate for holding the nut to the standard and prevent-

ing rotation of the rod, substantially as described.

4. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, springs attached to the said lever and extending therefrom in opposite directions, standards, a nut rotatably fitted to each standard and having an annular groove, a threaded rod for each nut longitudinally grooved and having the outer end of each of the said springs attached, respectively, thereto, and a lock-plate secured to the standard and having portions cooperating with the grooves of the nut and threaded rod, substantially as specified.

5. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, springs attached to the said lever and extending therefrom in opposite directions, standards, a nut rotatably fitted to each standard and having an annular groove, a threaded rod for each nut longitudinally grooved and having the outer end of each of the said springs attached, respectively, thereto, and a lock-plate secured to the standard and comprising spaced legs to embrace the sides of the nut and enter the groove thereof and an intermediate tongue to enter the groove of the rod, substantially as set forth.

6. In combination with a reciprocating carriage, and actuating mechanism therefor including a valve mechanism for the motive agent, an operating-lever connected with the movable part of the valve mechanism, springs clipped at their inner ends to the lever and projecting in diametrically-opposite directions therefrom, standards, a nut rotatably fitted to each standard and having an annular groove, a threaded rod for each nut longitudinally grooved and having the outer end of each of the said springs attached, respectively, thereto, and a lock-plate secured to the standard and comprising spaced legs to embrace the sides of the nut and enter the groove thereof and an intermediate tongue to enter the groove of the rod, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. WATERMAN. [L. S.]

Witnesses:

CARL STANGE,
HERMAN NORTH.