

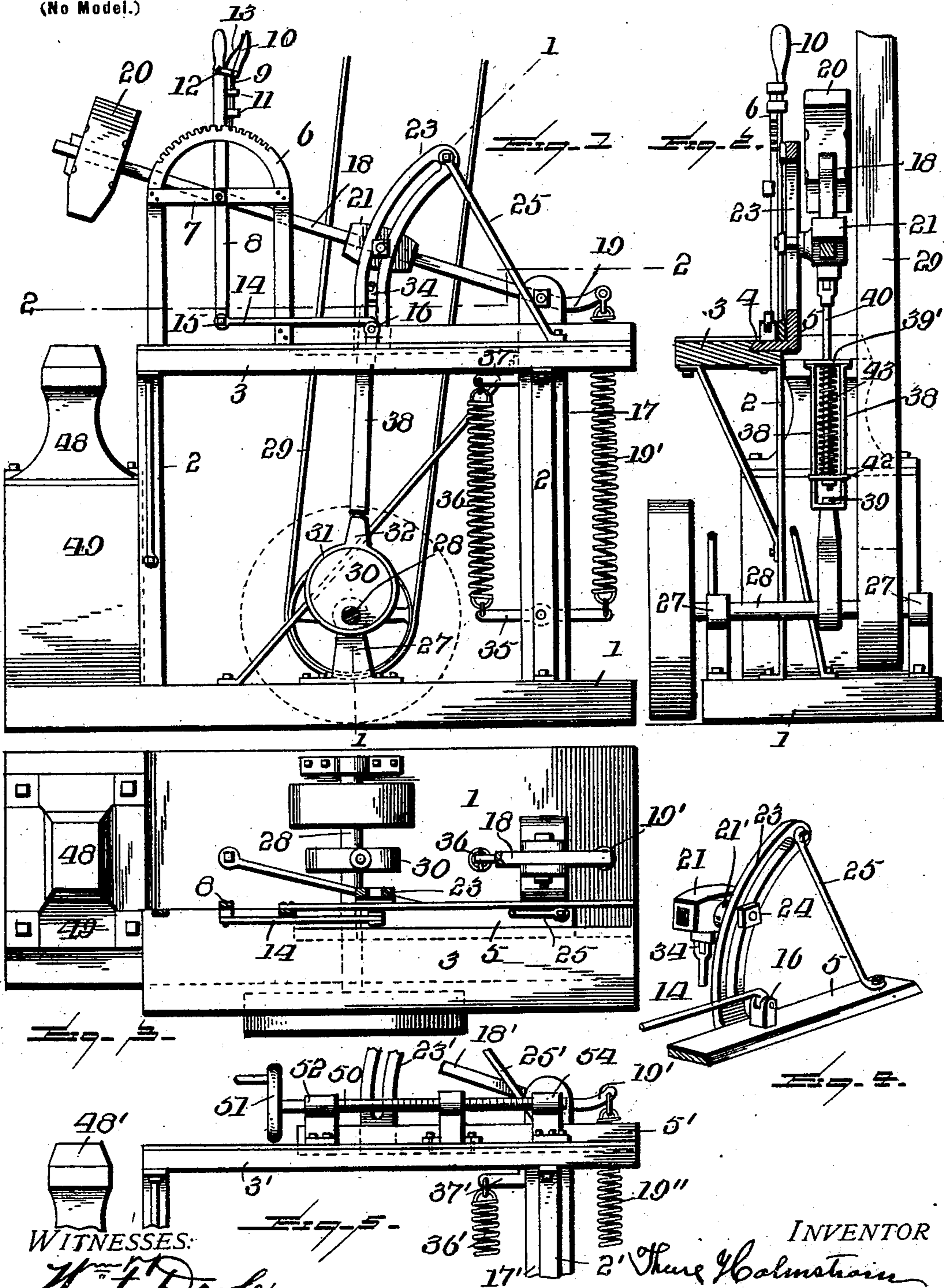
No. 710,358.

Patented Sept. 30, 1902.

T. HOLMSTROM.  
POWER HAMMER.

(Application filed June 3, 1902.)

(No Model.)



WITNESSES:

W. F. Doyle

Louis Thorstenau

INVENTOR

Thure Holmstrom

BY

E. W. Beise Attorney

# UNITED STATES PATENT OFFICE.

THURE HOLMSTROM, OF STARBUCK, MINNESOTA, ASSIGNOR OF ONE-HALF  
TO LOUIS THORSTENSON, OF STARBUCK, MINNESOTA.

## POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 710,358, dated September 30, 1902.

Application filed June 3, 1902. Serial No. 110,017. (No model.)

*To all whom it may concern:*

Be it known that I, THURE HOLMSTROM, a citizen of the United States, residing at Starbuck, in the county of Pope and State of Minnesota, have invented certain new and useful Improvements in Power-Hammers; 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.

My invention relates to certain new and useful improvements in power-hammers, and has for its object novel mechanism which will enable the adjustment of the length of the stroke of the hammer to be effected to as fine a degree as is desired without interfering with the movement of the hammer.

My invention has for its further object a device of the character described which shall embrace novel means for effecting a quick return of the hammer after the completion of the downward stroke.

The invention has for its still further object a device of this character which shall be simple and of economical construction, have efficient operation, and which may be comparatively cheap to manufacture.

With the above and other objects in view the invention further resides in the novel details of construction and combination of parts to be fully described in the following specification, and then pointed out in the claims.

Referring to the accompanying drawings, illustrating a practical embodiment of the invention, and wherein like characters of reference indicate similar parts throughout the several views, Figure 1 is a side elevation of the preferred form of the invention. Fig. 2 is a vertical sectional view thereof on the lines 1 1 of Fig. 1. Fig. 3 is a horizontal sectional view on line 2 2 of Fig. 1. Fig. 4 is a detail view of the slide or carriage carrying the mechanism for adjusting the throw of the hammer, and Fig. 5 is a side elevation of a modification of the invention.

By referring to the accompanying drawings it will be noted that the base 1 carries up-rights or standards 2, which at their upper ends bear a table 3, the table being on one side of the machine only and braced to best suit the needs of the class of work to

which the machine is to be adapted. Along its inner edge the table is provided with a guideway 4, preferably half-dovetail in cross-section, and which receives a sliding carriage 5. At the forward portion of the table a frame 6 is secured, being of a yoke form and having a segmental rack at its upper portion of substantially a half-circle. The feet of this frame or yoke may be secured to the table in any manner, they carrying at their upper portion a bar 7, intermediate the length thereof being pivoted a lever 8, carrying at its upper end a pawl 9, actuated by means of the handle 10, the pawl operating within the guides 11, carried by the lever, and being pivoted to the lever by means of the arm 12, the pawl and lever being held in their distended position by means of the spring 13. It will of course be understood that by simply moving the handle 10 toward the handle formed on the upper end of the lever the pawl will become disengaged from the teeth of the segmental rack, permitting the lever to occupy any desired position. The free or lower end of this lever carries a horizontal arm 14, which is pivoted thereto, as at 15, the other end of this horizontal arm being pivotally mounted on the carriage 5, as shown at 16. At the rear end of the base a standard 17 extends in a vertical direction, at its upper end receiving an arm 18, which is pivoted to the standard in proximity to the end of the arm, the portion of the arm to the rear of the standard being inclined upwardly with relation to the major portion of the arm, as shown at 19. The forward end of this arm receives the hammer 20, which, as is obvious, may be changed to adapt it to the varying classes of work. The connection of the arm to the carriage is shown as comprising a sleeve 21, apertured to receive the arm and having a free movement with relation thereto, this sleeve carrying a bolt or rod 21', which extends through a slotted segmental guide-plate 23, the bolt or rod on its free end receiving a nut 24, which retains the sleeve in its relative position to the guide-plate. This plate may be supported by a brace 25, secured to its outer end and to the carriage, as shown, the inner or lower end of the plate being received on and secured directly to the car-

riage. To the base are secured bearings 27, receiving a shaft 28, which has a drive-wheel secured thereto, and the latter, being actuated by any suitable means or power, (not shown,) transmitting motion to the belt 29, engaging over this drive-wheel. An eccentric or cam 30 is also secured to the shaft 28 and revolves freely within a strap 31, secured to its periphery, which at its upper end carries an apertured knob receiving a bolt extending through the lower end of a connecting-rod or pitman 40, the upper end of which is pivotally secured to the sleeve 21, as shown in Fig. 4 at 34.

In order to effect a quick return of the arm carrying the hammer, I provide the rear end 19 of the arm 18 with a spring 19', which extends downwardly and is secured at its lower end to a short lever 35, pivoted intermediate its ends to the standards 17. The other end of this lever is secured to the spiral spring 36, which at its upper end is secured to a lug 37, carried by the standard 17. The connecting-rod or pitman 40, as shown in Fig. 2 of the drawings, operates within two parallel side members, which at their lower ends are connected to the apertured knob 32 by means of the bolt 39. At their upper ends these side members carry a connecting-bar 39', receiving the rod 40, which, as previously stated, has a pivotal connection with the sleeve 21. The lower end of the rod 40 carries an apertured plate 42, which is slidingly mounted on the two side members 38 and engages a spiral spring 43 of a very great strength, the latter encircling the rod 40 and bearing against the connecting-bar 39'. This connection will materially decrease any jar or vibration which might be imparted to the machine during the operation.

At the forward end of the machine is arranged the anvil 48, supported upon the block 49, the anvil being so positioned as to lie directly in the path of the hammer when the same has reached the limit of its downward stroke.

In the modification shown in Fig. 5 it will be noted that the parts 48', 3', 17', 19', 5', 25', 23', 18', 19'', and 37' are not unlike those employed in the preferred form illustrated in the preceding figures. In this modification, however, I employ a different means for actuating the carriage, which, as shown, comprises a screw-threaded horizontal shaft 50, carry-

ing a hand-wheel 51 at its forward end, the shaft rotating freely within bearings 52 53, rigidly mounted on the table 3'. The carriage carries a sleeve 54, interiorly threaded to receive the rod or shaft 50 and which is adapted to be actuated by the movement of the said rod, according to the direction the latter is rotated in. In other particulars this modification operates precisely the same as the preferred form of the invention.

I claim—

1. In a device of the type set forth, the combination with the base and the standard carried thereby, of a table carried by the base, a carriage slidingly mounted on the table, an arm pivoted to the standard, and carrying a hammer on its forward end, a sleeve on said arm, a segmental plate carried by the carriage, with means carried by the sleeve operating through said segmental plate, means for actuating the arm in a vertical plane, means secured to the rear end of the arm for returning the same to its normal position, and means for moving the carriage in a horizontal plane.

2. A device of the type set forth, comprising a pivoted arm carrying a hammer on its one end, and means on its other end for returning the arm to its normal position, a movable carriage with a guide-plate thereon, means freely movable on the arm and movably connected to the guide-plate, and means connected to said last-named means for actuating the arm.

3. In a device of the type set forth, the combination with the base and the table, of a carriage movably mounted on the table, an arm pivotally carried by the base, with a hammer on the arm, a means for actuating the arm, a slotted segmental plate carried by the carriage, with a sleeve freely movable on the arm carrying a bolt engaging through said slotted plate, a means on the table for moving the carriage in a horizontal plane, and means carried by the carriage and engaging said last-named means, for forming a connection between the carriage and the last-named means.

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

THURE HOLMSTROM.

Witnesses:

LOUIS THORSTENSON,  
GEO. W. BEISE.