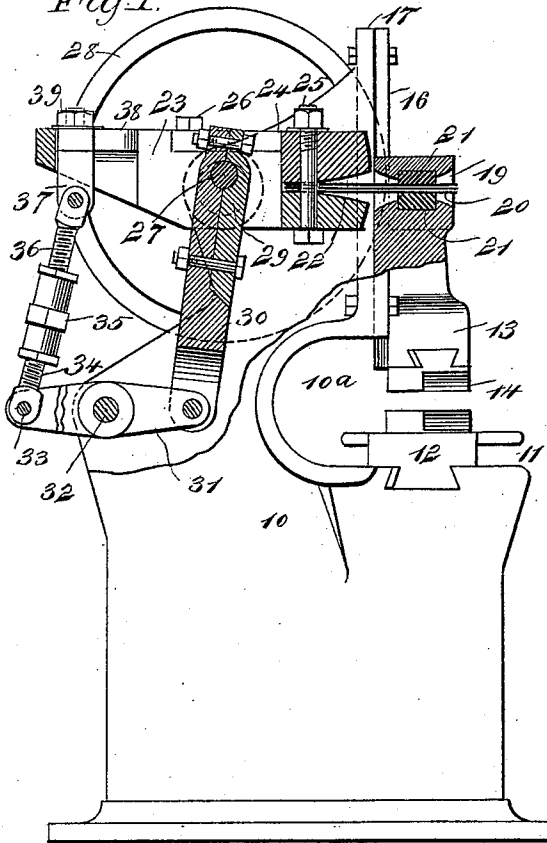


(No Model.)

J. B. SWEENEY & R. W. LAIRD.
POWER HAMMER.

No. 529,634.
Fig. 1.



Patented Nov. 20, 1894.

Fig. 2.

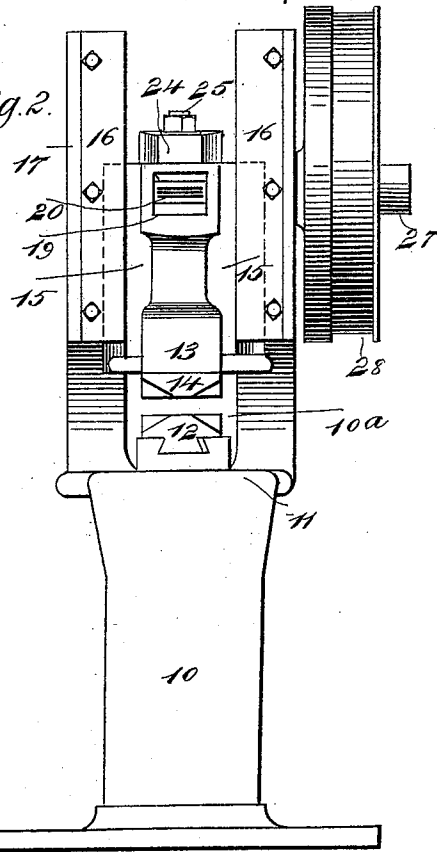
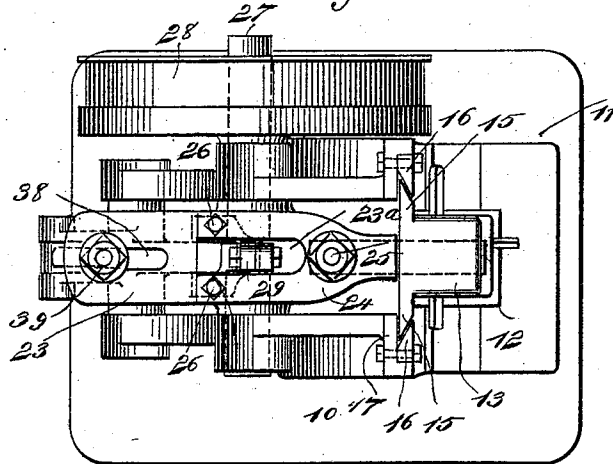


Fig. 3.



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ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES BERNARD SWEENEY AND ROBERT WALLACE LAIRD, OF ST. JOHNSBURY, VERMONT, ASSIGNORS TO THE LAIRD & SWEENEY MANUFACTURING COMPANY, OF SAME PLACE.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 529,634, dated November 20, 1894.

Application filed March 3, 1894. Serial No. 502,220. (No model.)

To all whom it may concern:

Be it known that we, JAMES BERNARD SWEENEY and ROBERT WALLACE LAIRD, both of St. Johnsbury, in the county of Caledonia and State of Vermont, have invented a new and Improved Power-Hammer, of which the following is a full, clear, and exact description.

Our invention relates to improvements in that class of power hammers which are adapted to deliver an elastic blow in simulation of the action of a hand hammer; and the object of our invention is to produce a very simple and efficient hammer of this kind, in which the vertically reciprocating hammer head is actuated by a tilting helve, the hammer head and helve being connected by a built-up spring formed of contiguous parallel plates, so that by using more or less plates the spring may be more or less resilient, and to provide a simple and easily operated means of driving and adjusting the helve so as to give a powerful blow and just the requisite stroke.

To these ends our invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken sectional elevation of the hammer embodying our invention. Fig. 2 is a front view of the same; and Fig. 3 is a plan view of the same.

The hammer is provided with a suitable frame 10, which is recessed in the usual way in front, as shown at 10^a, to make room for handling material being hammered and also to form the table 11, in which is mounted an anvil 12, the anvil being dovetailed in the table, as shown in Fig. 1, and above the anvil is the vertically reciprocating head 13 which has a die block or hammer face 14 dovetailed into its lower end, the die corresponding to the anvil below it, as the drawings show. These above described features are not claimed as novel.

The head 13 is provided with lateral vertical flanges 15 which are adapted to move in

ways formed between the removable plates 16 and the front flat face 17 of the main frame. The upper end of the head 13 is recessed, as shown at 19, the recess extending through the head from front to back and having curved upper and lower walls to provide for the easy bending of the spring 20 by which the head is moved, this spring extending through the recess 19 and being held between blocks 21 which are preferably yielding. The spring 20 is made up of a series of plates laid one on the other and in this way, by using more or less of the plates, the spring may be given any desired stiffness according to the nature of the work which is to be done. The rear end of the spring enters a slot 22 in the front end of the tilting helve 23, this helve being preferably made in two pieces having a cap 24 at the front end forming the top half of the helve, the cap 24 being secured in place by bolts 25 and 26, the former extending through the rear end of the spring 20, so as to bind the latter to the helve. It will thus be seen that when the helve tilts, it will impart a vertical motion to the head 13, and the spring does not bind as it is capable of sliding longitudinally between the blocks 21.

The helve is fulcrumed near its center on the power shaft 27, which is provided with a pulley 28 or equivalent means for driving it, and in the center of the shaft is an eccentric 29 moving in the split central portion 23^a of the helve, the eccentric carrying a pitman 30 which extends downward and is, at its lower end, pivoted to the front end of a rocking lever 31, which is journaled on a shaft 32 near the back of the machine frame, and the rear end of the rocking lever is pivoted, as shown at 33 to a screw 34 which connects by a screw coupling 35 with a screw 36, this being pivoted at its upper end to a clip 37, which is movable in a longitudinal slot 38 in the rear end of the helve 23 and is bound in place by a nut 39.

The screws 34 and 36 have opposite pitch, so that by turning the coupling 35, the distance between the rear end of the helve and the rear end of the rocking lever 31 may be regulated. The screws and coupling thus

form a connecting rod uniting the lever 31 and the helve and, by adjusting the length of the connecting rod, the depression of the head at each stroke, or the distance from the anvil at which this motion will be checked to suit different thicknesses of articles under treatment, may be regulated, while by adjusting the clip or block 37 the length of the stroke may be varied.

It will be seen that when the shaft 27 is revolved the pitman 30 will be moved up and down by its eccentric, the lever 31 will be tilted and, by means of the connecting rod, will impart an oscillating movement to the helve 23 which, by reason of its spring connection described, reciprocates the head 13, and the material to be hammered is, of course, placed in the usual way upon the anvil beneath the face of the hammer head.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A power hammer, comprising a tilting helve split at its front end, a reciprocating head arranged adjacent to the helve and provided with a recess having curved upper and lower walls, a pair of binding blocks in the recess, and a spring held in the split end of the helve and projecting between the binding blocks, substantially as described.

2. A power hammer, comprising a tilting helve, a reciprocating head arranged adjacent to the helve and provided with a recess having curved upper and lower walls, a pair of yielding binding blocks in the recess and a spring secured to the helve and projecting between the binding blocks, substantially as described.

JAMES BERNARD SWEENEY.
ROBERT WALLACE LAIRD.

Witnesses:

H. W. ALLEN,
C. W. RINTER.