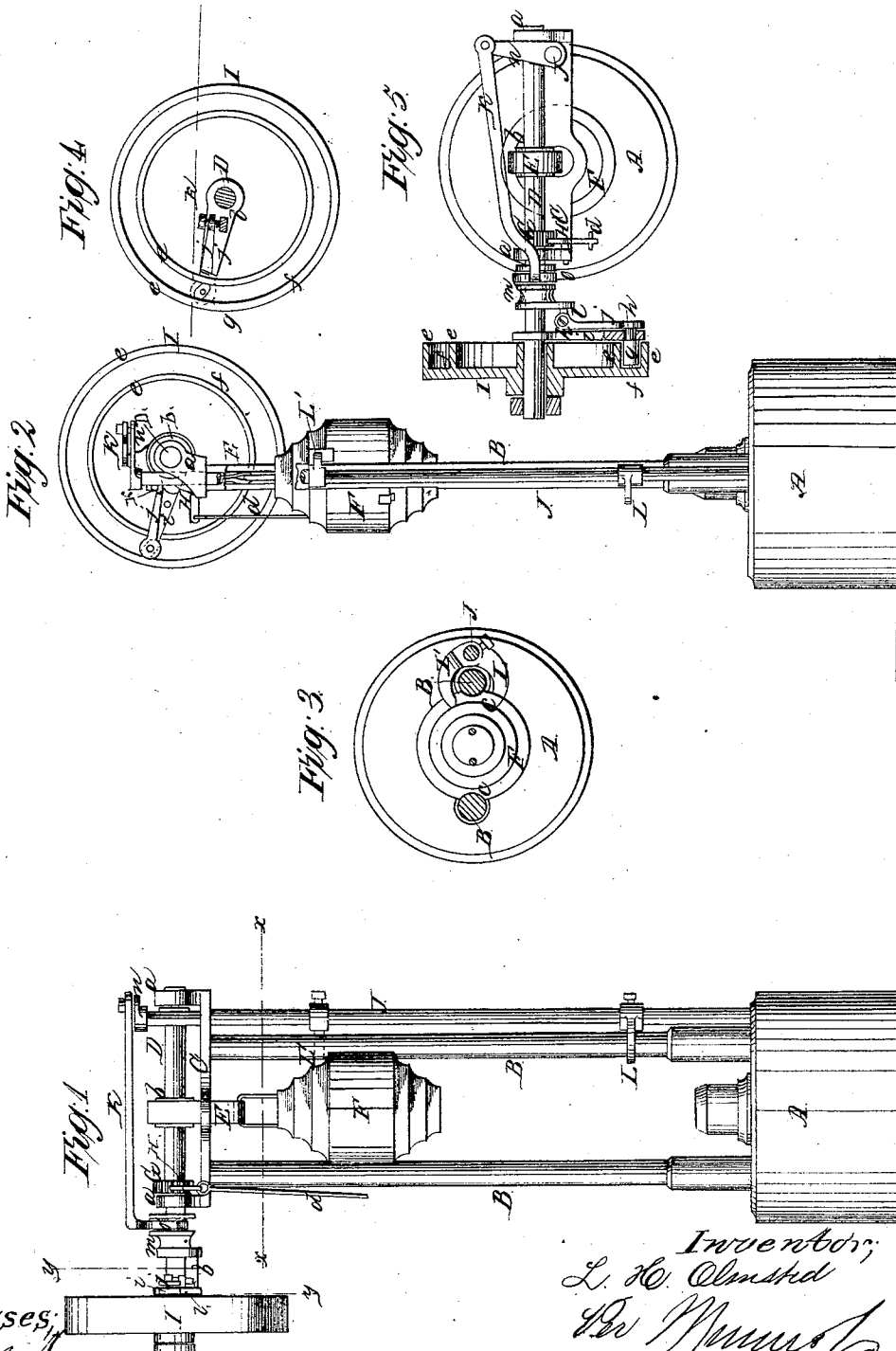


J. H. Olmsted.

Drop Hammer.

N^o 66,879.

Patented Jul. 16, 1867.



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L. H. OLMSTED, OF STAMFORD, CONNECTICUT.

Letters Patent No. 66,879, dated July 16, 1867.

IMPROVEMENT IN DROP-HAMMERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, L. H. OLMSTED, of Stamford, in the county of Fairfield, and State of Connecticut, have invented a new and improved Drop-Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view of my invention.

Figure 2, a side view of the same.

Figure 3, a horizontal section of the same, taken in the line $x x$, fig. 1.

Figure 4, a vertical section of a portion of the same, taken in the line $y y$, fig. 1; and

Figure 5, a plan or top view of the same, with the driving-pulley in section.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved drop-press for swaging, punching, and like purposes, and it consists of a novel automatic mechanism, as hereinafter fully shown and described, whereby the driving-pulley of the machine may be operated continuously, and the rising and falling weight placed under the complete control of the operator.

A represents a base-block; to which two uprights, B B, are attached, said uprights being of a suitable height, and connected at their upper ends by a cross-bar, C, as shown clearly in fig. 1. On each end of the cross-bar C there is an ear or lug, a , and these ears or lugs serve as bearings for a horizontal shaft, D, having a pulley, b , open with a strap, E, attached, the letter having a weight, F, at its end. The weight F is allowed to rise and fall freely between the uprights B B, which serve as guides for the same, the weight having vertical grooves $c c$ made in it to receive the uprights, as shown clearly in fig. 3. On the shaft D there is also keyed a ratchet, G, with which a pawl, H, engages, said pawl being pivoted to one of the ears or lugs, a , and having a cord, d , attached to its outer end, which may extend down to a treadle on the flooring on which the base-block A rests. I is a driving-pulley, placed loosely on the shaft D at one end of it. This pulley is hollow, or of shell form, (see figs. 2, 4, and 5.) and its inner side has two horizontal concentric flanges, $e e$, which form an annular groove, f , to receive a pin, g , which is of oval form in its transverse section, as shown in fig. 4. This pin g is constructed with a journal, h , which passes through an arm, t , attached to the shaft D, and the outer end of said journal is connected to an arm, j , which has a set-screw, k , passing through its outer end, the set-screw bearing against a sliding or adjustable wedge, l . This wedge l is attached to a collar, m , which is fitted loosely on the shaft D, so that it may slide thereon, but it is connected with the shaft by means of a feather and groove, so that it may turn with the shaft at all times. J is a vertical shaft, which is by the side of one of the uprights B, and has its lower end stepped in the base-block A, said shaft passing up through the cross-bar C, which serves as an upper bearing for it, and having an arm, n , projecting horizontally from its upper end, the arm n being connected by a bar, K, with the sliding-collar m , to which the wedge l is attached. The bar K is provided with a pendent fork, o , to fit in a groove made circumferentially in the collar. This mode of connecting the bar K with the collar m admits of the latter rotating with the shaft D, and at the same time allows the bar K to slide the collar. On this shaft J there are two arms, L L'—one, L, being at its lower, and the other, L', at its upper end. The position of these arms on the shaft J is shown clearly in fig. 1.

The operation is as follows: The pulley I is turned with a continuous motion, and the weight F is raised by the winding of the strap E on the pulley b whenever the pulley I is connected with the shaft D. This connection is formed by the pin g binding or wedging itself between the flanges $e e$ of the pulley I, which is done by the wedge l being forced between the arms $i j$ and turning the pin g in a radial position with pulley I, the wedge l , when forced between said arms, moving the arm j , and consequently the pin g , which is attached to said arm. The wedge l is moved, of course, with the sliding-collar m , and the collar is moved by the bar K, attached to the arm n on the upper end of the shaft J. As the weight F reaches its highest point, it actuates the upper arm L' on the shaft J, turns said shaft a certain distance, and thereby actuates the bar K, so that the latter will move the collar m and draw out the wedge l from between the arms $i j$, and thereby free the pulley I from the shaft D. The weight F would now fall by its own gravity were it not for the pawl H engaging with the ratchet G, and when the operator wishes the weight to fall, he simply pulls the cord d , or actuates a

treadle, to which said cord is attached, and thereby raises the pawl H from the ratchet G, and the weight F descends, the weight as it reaches its lowest point striking the lower arm L, and thereby actuating the shaft J, so that the bar K will force the wedge *l* between the arms *i, j* and move the pin *g*, causing the latter to bind between the flanges *e e*, and forming a connection between the pulley I and shaft D, so that the weight F will again rise, and so on. It will be seen that if a rapid continuous rising and falling movement of the weight F is required, the pawl H is kept free from the ratchet G. It will, of course, be understood that the weight F and base-block A have proper dies or punches attached according to the work to be performed.

I do not claim the friction driving-pulley I, but I do claim as new, and desire to secure by Letters Patent—

1. The combination of the friction driving-pulley I and shaft D, with the devices for engaging and disengaging the one from the other, consisting of the weight F, the upright shaft J provided with the arms L L', the bar K, attached to an arm, *n*, on the upper end of said shaft, and the sliding-collar *m*, on shaft D, all arranged to operate in connection with a friction-clutch pulley, substantially as set forth.

2. I further claim the ratchet G and pawl H, in combination with the mechanism set forth in first clause of claim, substantially as and for the purpose specified.

L. H. OLMSTED.

Witnesses:

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