G. C. Howard,

Sheet-Metal Die.

No. 55,658. Patented June 19, 1866.

Fig: 2

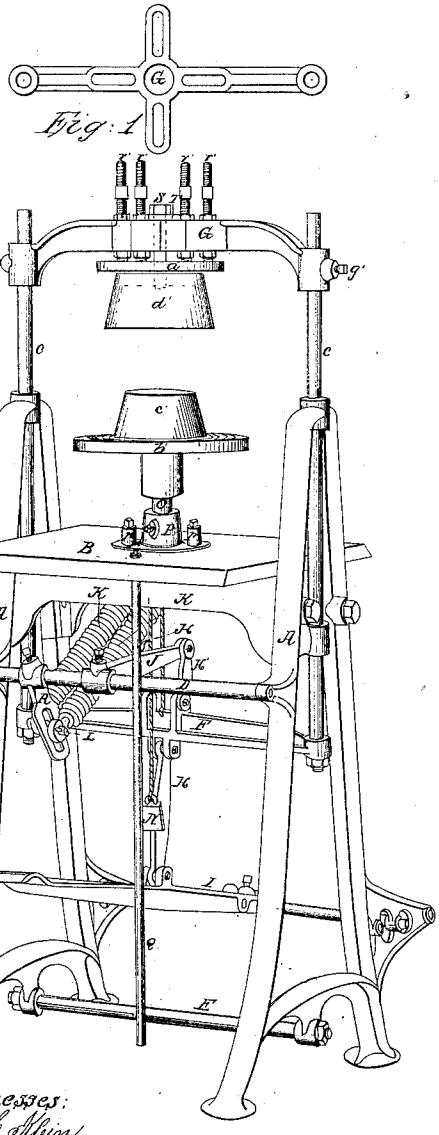


Fig: 1

Fig: 5

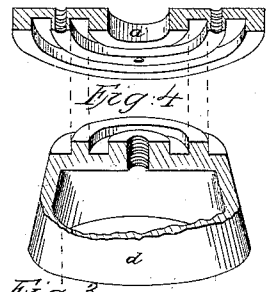


Fig: 4

Fig: 3

Fig: 6

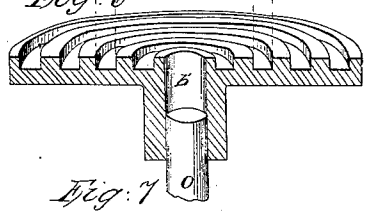
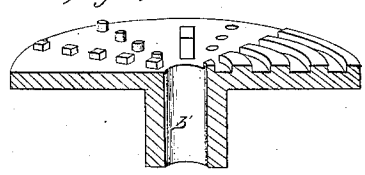


Fig: 7



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UNITED STATES PATENT OFFICE.

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IMPROVED MACHINE FOR PRESSING AND MOLDING PLIABLE MATERIALS.

Specification forming part of Letters Patent No. **55,658**, dated June 19, 1866.

To all whom it may concern:

Be it known that I, GEO. C. HOWARD, of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in a Machine for Pressing and Molding Pliable Materials; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the whole machine; Fig. 2, a plan of the yoke on which the upper centering-plate is either cast or secured by screws; Fig. 3, a vertical section of the male mold, in perspective; Fig. 4, a perspective view of the female mold, partly in perspective; Fig. 5, a vertical section of the upper centering-plate, in perspective; Figs. 6 and 7 are vertical sections of the lower centering-plate, in perspective.

My invention consists in the form of the housings A A, combining all the necessary bearings in one piece bolted to the table B, by which greater durability and simplicity is obtained; in the means for keeping the treadle down; in improved means of centering and adjusting the molds and dies, and in providing the treadle and housings with two or more fulcrum-bosses, by means of which the leverage can be varied without affecting seriously the position of the treadle and link.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A A are two housings, which form, in connection with the table B and the brace-rod M, the principal framing of the machine. They also constitute the bearings for the sliding pressure-rods C C, rock-shaft D, and treadle fulcrum-shaft E.

The rods C C are at the lower end connected by the cross-head F, and at the upper extremity by the yoke G, which can be secured at different heights by means of the set-screws g' g'. At the center of the cross-head are ears or bosses, to which the links H and H′ H′ are joined. The link H connects the cross-head with the treadle I, and the links H′ H′ communicate the motion of the cross-head to the rock-shaft D by means of the forked rock-arm J.

The spiral or helical wire springs K K are fastened on one end to the back side of the table B and on the other to the stud L, which is carried by the slotted rocking-arm R on the rock-shaft D. A weight, N, attached to a cord (which, running over a pulley on the lower side of the table B, is fastened to the cross-head F) may be used instead of the springs K K.

The centering-plates, Figs. 5 and 6, are furnished with grooves, slots, pins, holes, or similar devices, Fig. 7, and the molds or dies are provided with projections, grooves, holes, pins, or analogous things, corresponding to and fitting the grooves, slots, pins, holes, or similar devices on the centering-plates, for the purpose of facilitating the centering of the dies or molds.

The lower centering-plate, b', Figs. 6 and 1, rests upon the stem O, which is held in place by the adjustable stand P, secured to the table B by the bolts and nuts p' p'. The two slots in the stand P are at right angles to those immediately under it in the table B, so that the lower mold or die, c', can be adjusted horizontally.

The upper centering-plate, a', Figs. 5 and 1, is adjusted into a horizontal position, so as to bring its face parallel to that of the lower centering-plate, b', by the set-screws r' r' r' r', which also serve to keep it in place.

The upper mold or die, d', Figs. 4 and 1, is kept in place by the bolt S, which passes through the washer T, yoke G, upper centering-plate, a', Fig. 1, and finally screws into the mold or die.

The rod Q is fastened to the table B in such a manner that it always bears slightly against the side of the treadle I and moves entirely over it as soon as the treadle has passed its lower end, preventing it from rising until it is pushed aside again. There are two or more fulcrum bosses on the treadle, and an equal number on each one of the housings, which enable me to vary the amount of leverage of the treadle by putting shaft E through either one without changing materially the position of the link H and treadle I.

The operation of the machine is as follows: After the molds or dies have been put in position the treadle is compressed, which causes the upper mold to descend. When it arrives at its lowest point the rod Q slips over the treadle,

preventing thereby the mold or die from rising. A slight pressure with the foot against the side of the rod will liberate the treadle, which is immediately raised by the springs K K, or their equivalents, and the operation may be repeated.

I claim as my invention—

1. The form of housings A A, combining all the necessary bearings in one piece with the table B, constructed substantially as described.

2. Providing the treadle and housings with two or more fulcrum-bosses, substantially as and for the purpose specified.

3. The slots in the stand P, at right angles to those immediate under it in the table B, substantially as and for the purpose described.

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