(No Model.)

S. W. BABBITT.

MACHINE FOR EMBOSSING WORKS IN SHEET METAL.

No. 454,149. Patented June 16, 1891.

Fig. 1.

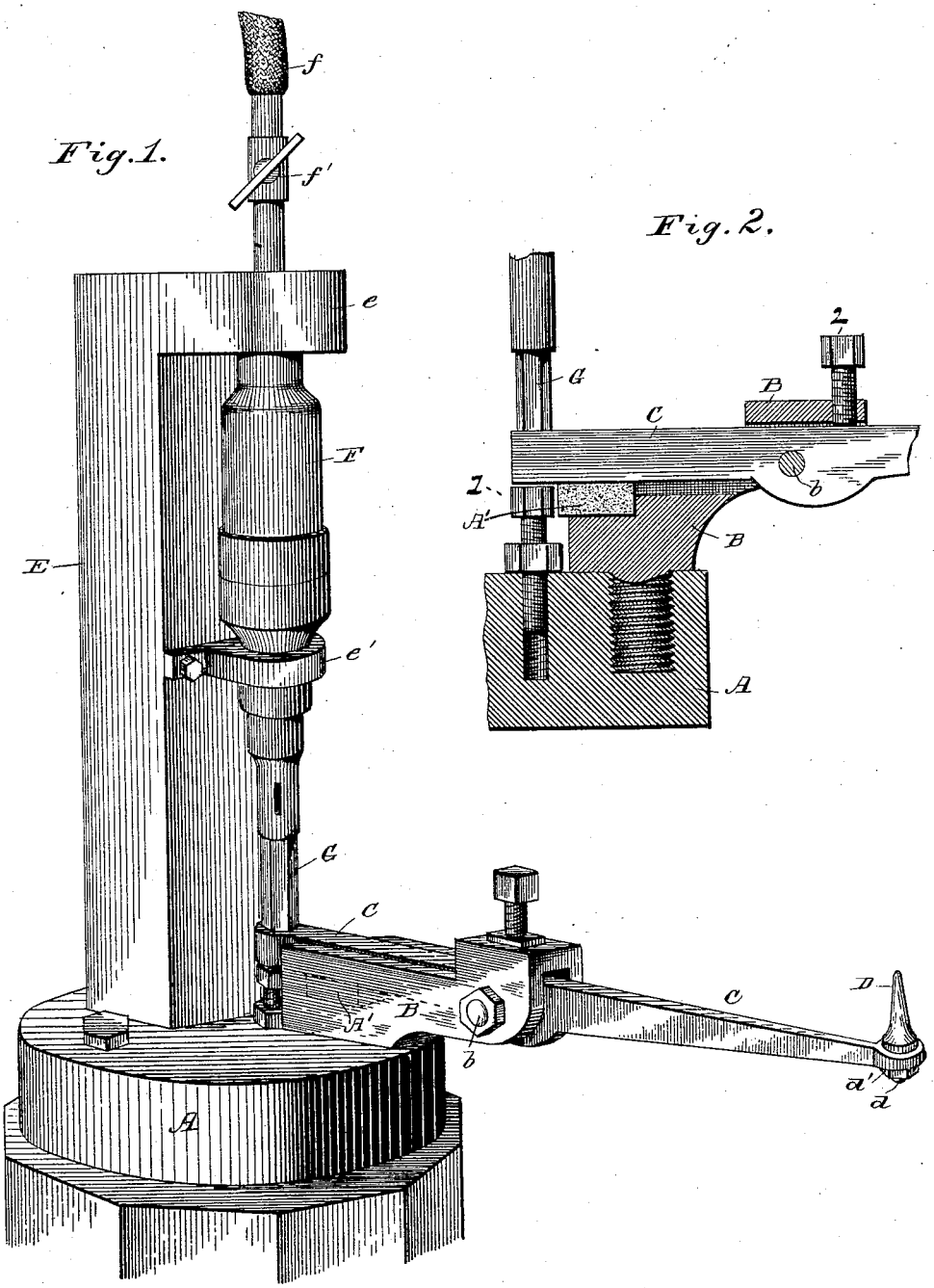

Fig. 2.

Witnesses:-
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SETH WM. BABBITT, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE WILCOX SILVER PLATE COMPANY, OF SAME PLACE.

MACHINE FOR EMBOSSING WORKS IN SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 454,149, dated June 16, 1891.

Application filed July 9, 1888. Serial No. 279,401. (No model.)

To all whom it may concern:

Be it known that I, SETH WILLIAM BABBITT, of Meriden, in the county of New Haven and State of Connecticut, have invented new and useful Improvements in Machines for Embossing Works in Sheet Metal; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to machinery for embossing articles made of sheet metal—such as cups, coffee-pots, urns, and all the various articles usually made of white sheet metal and silver-plated; and to this end my invention consists in the construction and combination of parts hereinafter described and claimed.

Heretofore in the art of ornamenting or embossing from the inside or under surface of sheet-metal ware it has been customary to employ what is commonly known as a "snarling-iron." This iron or tool consists of a tempered bar bent at a right angle at one end to enter and be clamped by the jaws of a vise, while its other or outer end is bent upward and fashioned into a point, blunt or sharp, as desired. In use the iron is clamped in a vise, the article to be embossed is held over the outer end of the iron, and the main or horizontal portion of the iron is struck by a mallet or hammer repeatedly. The blows of the iron against the sheet-metal surface are more or less rapid, according to the length and temper of the iron, and of course decrease in force after each stroke of the operator's mallet until the next stroke. It will thus be seen that there is a constant variation in the force of the blows of the snarling-iron, due not only to the decrease above mentioned, but also to the variation in the force used by the operator or his assistant in striking the iron with the mallet. This variation, besides rendering it almost impossible to produce an even raised surface, has the effect of lifting or embossing a greater portion of the metal than desired—that is, it "spreads" the line or portion to be raised. It is then customary to fill the depressions on the under surface with a backing, and then depress from the outside or upper surface those portions which have been unduly raised.

It is therefore the object of my invention to produce a machine that will enable an operator to produce an even and finished embossed design upon all such ware as has heretofore required the use of the snarling-iron and to do such work quickly and economically. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the machine, and Fig. 2 is a sectional detail view.

To a suitable base A is secured a bracket B, having bearings for the fulcrum-pin *b* of the lever C. Underneath the rear end of the lever C is placed a block rubber spring or cushion A′, and the forward end of the lever is provided with a hole to receive the shank *d* of the embossing-tool D, said shank being screw-threaded to receive a nut *d′* below the lever for securing said tool in its place. Other means for securing this tool in position may be used, or the tool may be simply the upturned end of the lever.

As shown in the drawings, I may use tools of varying degrees of sharpness, and, in fact, propose to do so in producing embossed lines of greater or less width.

In the base A in the rear of the bracket B is a threaded hole to receive a set-screw 1, the head of which may serve as a stop to limit the downward movement of the rear end of the lever. Another set-screw 2 passes through the top of bracket B, and may be turned to bear upon the lever C, in front of fulcrum *b*, to limit the movement of the lever. The set-screws 1 and 2 regulate the force of the blow of the embossing-tool, as they allow more or less vibration.

Projecting upward from the base A is a standard E, which supports in any suitable manner the motor F. As shown in the drawings, this motor, preferably a pneumatic tool, is held in bearings formed in lateral projections *e e′* from standard E.

At *f* and *f′* are shown, respectively, a pipe and cock for supplying and regulating the amount of air for operating the pneumatic tool.

The hammer G, which is given a rapid vertical reciprocating motion by the motor, is arranged above the rear end of the lever and in close proximity thereto, so that the downward motion of said hammer will depress the rear end of the lever, while the spring A′ will return the lever to its former position upon the rise of the hammer. In other words, the lever is kept in engagement with the hammer continuously by the spring, so as to cause the tool D to strike the work to be embossed, which is held over it by the operator with the same number of blows per minute as the hammer is given by the motor.

In place of a pneumatic tool I may use a steam-engine, an electric motor, or the hammer may be operated by a crank-rod from a system of multiplying gearing. In fact any motor that will give a rapid stroke may be used.

The lever, as shown, is pivoted at or near its center. It may be pivoted nearer either end, or it may be pivoted at one end, thus becoming a lever of the third class instead of the first. In either case a spring should be used to keep the lever in contact with the hammer.

The hammer or plunger may be directly connected with the lever, so as to operate the lever positively in both directions; but since the exceeding high rate of speed would tend to wear out the connection, I prefer the construction as illustrated.

Instead of using a rubber spring to return the lever to its position after each stroke of the hammer, I may use any other kind of spring. The pivoted lever, together with the means described for making it follow the movements of the motor, constitutes what may be called a "pivoted snarler;" and at that portion of the lever which receives the blows of the hammer I may place a removable piece of steel or other hard substance to take up the wear.

The operation of my machine is as follows: The motor being started, as in the case of a pneumatic tool, by turning the cock f' to admit the air, the lever will be rapidly vibrated and the operator holds the article to be embossed over the embossing-tool D, a pattern being generally first marked upon the upper or outer surface of the metal. The operator then presses the article downward, and, as the blows of the tool raise the material at the point of contact, moves the article along and around, following the pattern desired.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A pneumatic tool or other equivalent motor held in a grip or frame, in combination with a pivoted snarler for producing repoussè work on metals, as set forth.

2. In a machine for embossing works in sheet metal, the combination of a pivoted snarler having an embossing-tool projecting upward from one end, with a motor for vibrating said snarler, substantially as described.

3. In a machine for embossing works in sheet metal, the combination of a pivoted snarler having a removable embossing-tool projecting upward from one end, with a motor for vibrating said snarler, substantially as described.

4. In a machine for embossing works in sheet metal, the combination of a lever pivoted between its ends to a base and having an embossing-tool at one end, with a motor having a hammer to strike the other end of the lever, and a spring arranged to keep the hammer and lever in contact with each other, substantially as described.

5. In a machine for embossing sheet-metal ware, the combination of the lever C, having an embossing-tool at one end, with a motor having hammer G, spring A′, and a set-screw for limiting the vibration of said lever, substantially as described.

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

S. WM. BABBITT.

Witnesses:
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J. M. REYNOLDS.