

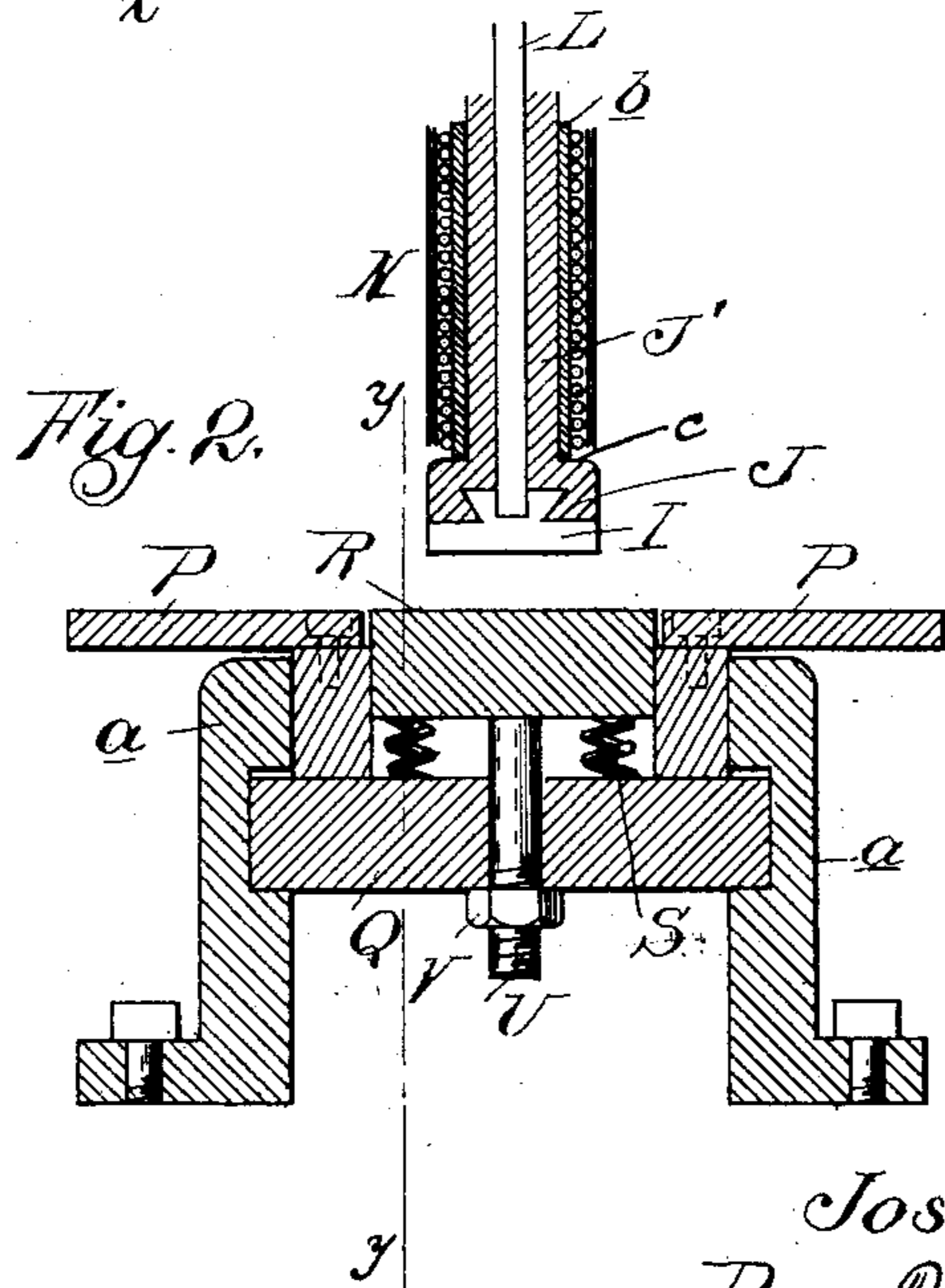
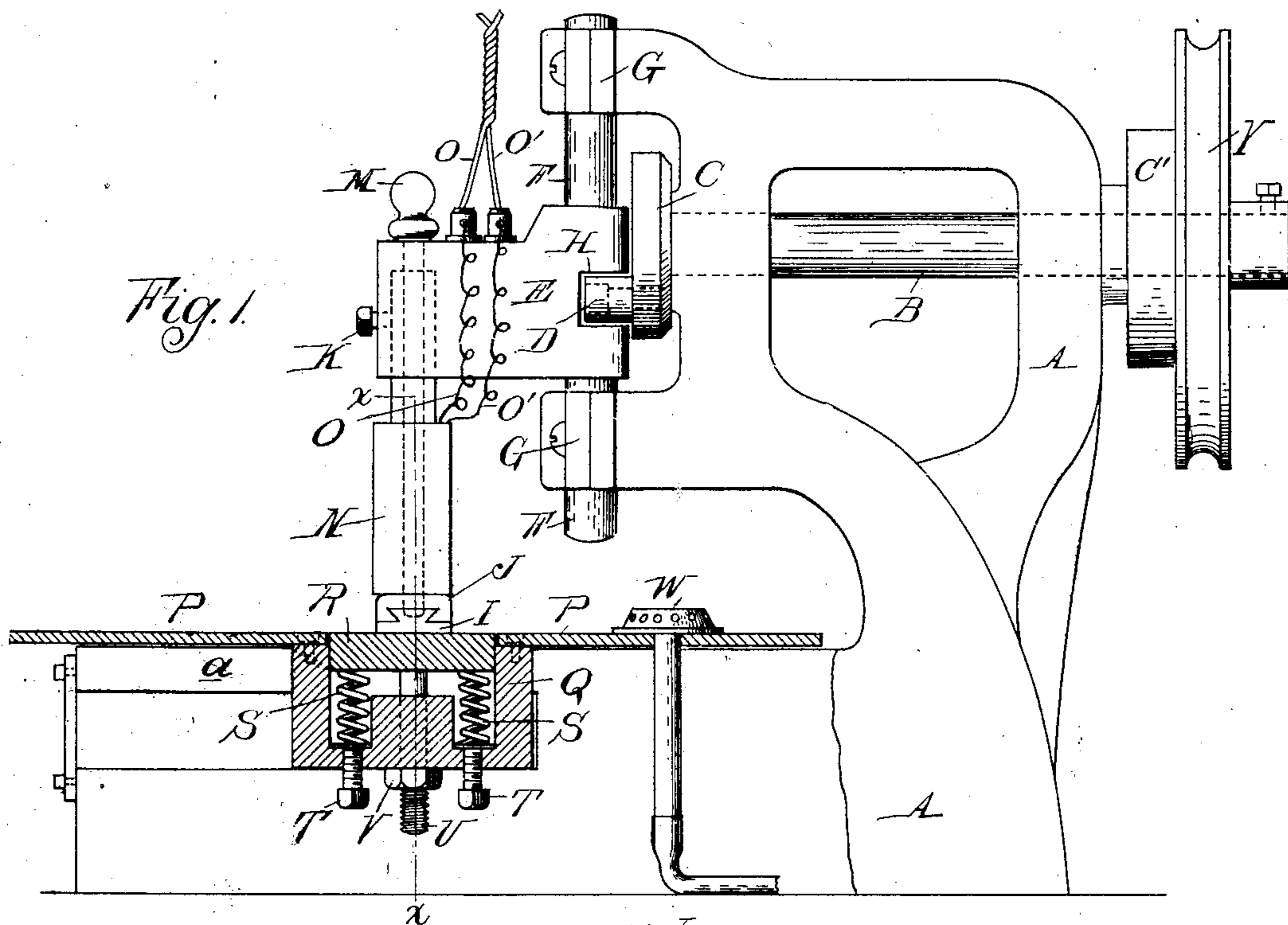
No. 685,833.

Patented Nov. 5, 1901.

J. G. GRALL.
EMBOSSING MACHINE.

(Application filed Dec. 27, 1898. Renewed Apr. 8, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH G. GRALL, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ROBERT MITCHELL MACHINERY COMPANY, A CORPORATION OF MICHIGAN.

EMBOSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 685,833, dated November 5, 1901.

Application filed December 27, 1898. Renewed April 8, 1901. Serial No. 54,929. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. GRALL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Embossing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention refers to that kind of embossing upon leather and the like in which metal leaf is first pasted over the spot on which the embossing-die is to operate and which requires the die to be heated in order to prevent the metal leaf from adhering to the die.

One object of my invention is to do away with the use of a heating-flame, which in the present construction of such machines is made use of to heat the die in the interval between its operation and which has the disadvantage of smudging the die more or less, with the result that it soils the impress made by the die.

Another object is to make a machine which requires little power and is simple and compact in its construction and can be readily operated by a boy or girl, whereby it is especially adapted for factory use, as in the manufacture of shoes, where it is the custom to stamp each shoe with the name or trade-mark of the dealer or manufacturer.

To this end my invention embodies the application of electricity as a means for heating the embossing-die and other features of construction, all as more fully hereinafter described, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my machine, with the table and bed-plate in longitudinal section, substantially on line *yy*, Fig. 2. Fig. 2 is a cross-section on line *xx*, Fig. 1.

A is the frame of the machine.

B is a drive-shaft journaled in horizontal bearings in the frame.

C is a crank-disk secured upon the drive-shaft.

D is a crank-pin.

E is a cross-head provided with vertical guides F, engaging in vertical guide-bearings

G on the frame above and below the cross-head, respectively, suitable guide-lugs (not

shown) being provided to prevent the guides F from rotating in their bearings.

H is a horizontal slot formed in the cross-head, into which the crank-pin D engages. 55

I is the embossing-die, detachably secured by a mortise-and-tenon connection to the lower end of the die-holder J, having the shank J', the upper end of which is secured detachably by a set-screw K in a socket in the cross-head. 60

L is a locking-pin extending down through the die-holder into a recess of the embossing-die to lock the same in place, and M is a wooden knob attached to the upper end of the locking-pin. 65

N is an electric heating-coil sleeved upon the lower end of the die-holder and resting on the shoulder *c* adjacent to the embossing-die.

O O' are the electric conductors connecting the terminals of the coil with the source of electricity. 70

P is a table supported upon a bed-plate Q, slidably secured between cheeks *a* of the frame. 75

R is a yielding bed-plate set in a recess in the table below the embossing-die.

S designates springs yieldingly supporting the bed-plate R upon the bed-plate Q.

T designates adjusting-screws for regulating the tension of the springs. 80

U is a bolt centrally projecting from the under side of the bed-plate R through the bed-plate Q and carrying an adjusting-nut V.

W is a burner secured upon the table P in the rear of the embossing-die and suitably connected with a source of supply. 85

In practice the parts being constructed and arranged as shown and described they are intended to operate as follows: If suitable connection is made between the heating-coil and the source of electricity, (which is done by means of a switch in a suitable place in proximity with the machine,) the heat generated in the coil is transmitted to the die-holder and embossing-die and maintains the latter substantially at a uniform degree of heat as best suited to the operation. Upon motion being transmitted to the shaft B the crank-pin (by engaging into the slot of the cross-head) imparts a vertical reciprocating motion to the cross-head and die connected there- 90 95 100

with. Supposing the machine to be used in the manufacture of shoes, the particular parts thereof upon which the mark is to be affixed are preferably prepared by an attendant operator, who places a suitably-sized piece of gold, silver, or aluminium leaf over the spot to be embossed, using a suitable size or paste to make it slightly adhere. The piece thus prepared is taken by the operator and placed under the embossing-die to make an impress and removed after the impress is made. The metal leaf not acted upon by the die is then brushed off, while the impress of the die remains traced in gold or silver.

My invention requires but very little power and can be driven by a sewing-machine belt applied to the groove-pulley Y on the shaft B, and instead of operating the machine by continuous motion a suitable clutch C', controlled by a foot-lever, (not shown,) is used to stop and start the motion at the will of the operator.

To make my machine available, if the source of electricity should be wanting, I have arranged the table P to slide in longitudinal direction between the cheeks a the necessary distance so that when drawn out in front the burner W can be placed below the die and heat the same by gas-flame in the interval of the work.

The heating-coil may be of any suitable construction and applied to the die in any manner to obtain the object of my invention. As shown in the drawings, the heating-coil is wound upon a porcelain tube b, which slips over the die-holder, and the loss of heat by radiation is prevented by covering the coil on the outside with asbestos sheet. In this manner the heating-coil can be readily removed from the die-holder J after the latter is taken out from the socket in the cross-head.

By means of the adjustment provided by the screws T the bed-plate R can be made more or less yielding or raised and lowered by means of the adjusting-nut V. The manner of securing the embossing-die by means of the locking-pin J is also very simple and permits of replacing it with other interchangeable dies, a variety of which is generally required with the present practice of marking the name of each dealer on the goods to be manufactured for him.

What I claim as my invention is—

1. In an embossing-machine, the combination of the vertical reciprocating die-holder J, the die I detachably secured to said die-holder, and the electric heater N removably sleeved upon the shank J' of the die-holder adjacent to the die.

2. In an embossing-machine, the combination with the table, the die-holder and its die supported above the table, of an electric heater sleeved on the shank of the die-holder in permanent heating contact therewith, and an auxiliary gas-heater carried by the table, said table being slidingly secured in position

and adapted to move the auxiliary heater under the die.

3. In an embossing-machine, the combination with the supporting-frame and table supported thereon, of a drive-shaft secured in horizontal bearings of the frame longitudinally thereof, the crank secured to the front end of said shaft and having a crank-pin, the cross-head operating in vertical guides in the frame and provided with a horizontal slot into which the crank-pin engages, the die-holder vertically adjustably secured in a socket formed in the cross-head, the die removably secured to the die-holder and the electric heater sleeved on the shank of the die-holder and carried thereby.

4. In an embossing-machine, the combination with the supporting-frame, the vertically-reciprocating cross-head in said frame, the vertical die-holder detachably secured in a socket in said cross-head, the die having a mortise-and-tenon engagement with the die-holder and a locking-pin passing through the cross-head and die-holder and engaging into a recess in the die.

5. In an embossing-machine, the combination with a vertical reciprocating cross-head, the die-holder J, having the shank J', adjustably supported in the socket formed in the cross-head, and the electric heating-coil sleeved on the lower end of the shank and resting on the shoulder c formed on the head of the die-holder and in heating contact therewith.

6. In an embossing-machine, the combination with a vertical reciprocating cross-head, the die-holder having a shank and a heating-coil sleeved thereon, said shank forming a core for the heating-coil and having a portion projecting above the coil and supported in a socket formed in the cross-head.

7. In an embossing-machine, the combination with a reciprocating cross-head carrying the die, of a die-holder having a shank secured in a socket in the cross-head and having a head at its lower end to which the die is secured, and an electric heating-coil sleeved on the shank of the die-holder in heating contact with the die-holder.

8. In an embossing-machine the combination with a reciprocating cross-head carrying the die, of a die-holder having a shank secured in a socket in the cross-head and having a head at its lower end to which the die is secured, an electric heating-coil sleeved on the shank of the die in heating contact with the die-holder to indirectly heat the die, and a reciprocating table carrying an auxiliary source of heat adapted to apply the heat directly to the die.

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

JOSEPH G. GRALL.

Witnesses:

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