

No. 627,542.

Patented June 27, 1899.

F. R. STAFFORD.

APPARATUS FOR MANUFACTURING DOOR PLATES OR SIGNS.

(Application filed Sept. 14, 1898.)

(No Model.)

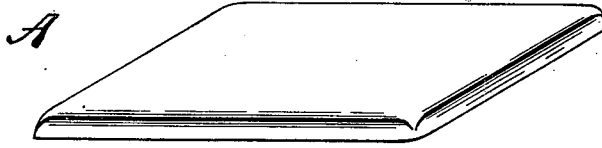


FIG. 1.

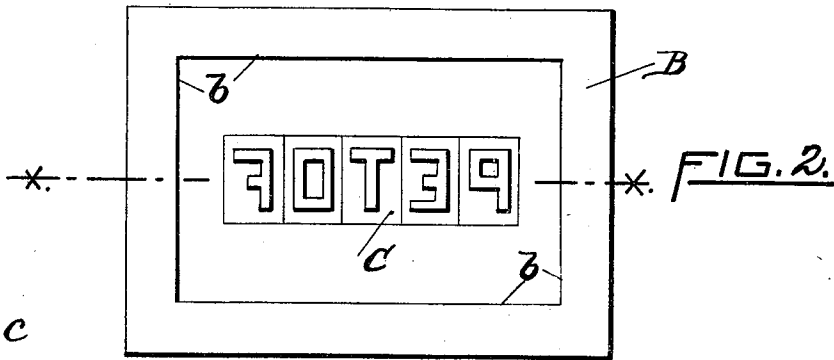


FIG. 2.

FIG. 6.

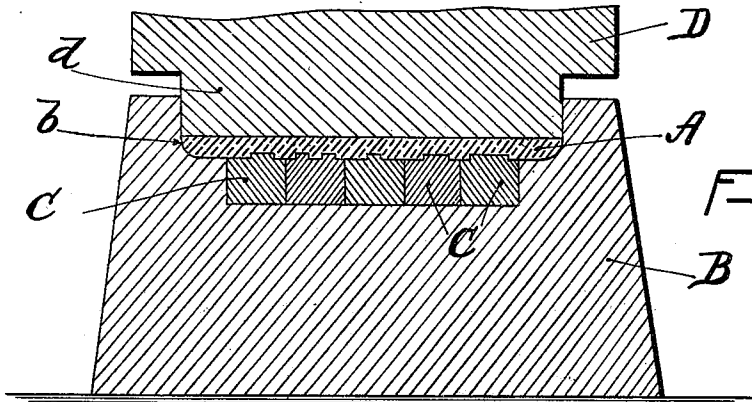


FIG. 3.

FIG. 4.

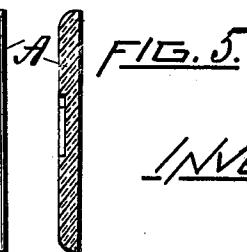
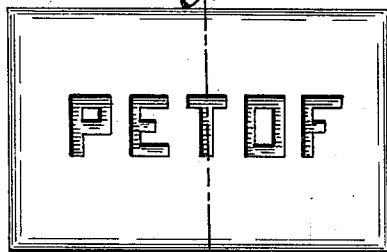


FIG. 5.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MANUFACTURING DOOR-PLATES OR SIGNS.

SPECIFICATION forming part of Letters Patent No. 627,542, dated June 27, 1899.

Application filed September 14, 1898. Serial No. 690,933. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. STAFFORD, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Devices or Apparatus for the Manufacture of Door-Plates or Signs, of which the following is a specification, reference being had therein to the accompanying drawings.

Like letters indicate like parts.

Figure 1 is a perspective view of the blank piece of metal from which the door-plate or sign is to be made. Fig. 2 is a top plan view of the die used in said manufacture, together with the types set in a central recess therein. Fig. 3 is a central vertical section of said die and of the type-blocks therein as seen on line *xx* of Fig. 2 and also of the plunger which operates in conjunction with said die and of the metallic blank in position between the plunger and die to receive the impression of the types. Fig. 4 is a top plan of the finished door-plate or sign. Fig. 5 is a sectional view of the same as seen on line *yy* of Fig. 4. Fig. 6 is a perspective view of a modified form of the type.

My invention is a device or apparatus for the manufacture of door-plates or metallic signs and the proper marking of the same.

It consists of the combination of a die having a suitable depressed bed surrounded by vertical walls and adapted to receive and laterally support therein a plate of an easily-compressible metal, which bed is provided with a groove or channel, movable type dies or blocks inserted in and held by said groove or channel, and a plunger movable by power to said die and having its operative end fitting in said depressed bed of the die, within the walls thereof, as hereinafter particularly described.

In the drawings, A is a metallic blank suitable for a door-plate or sign. This blank should be made of a somewhat easily compressible metal, such as brass, German silver, or the like.

B is a die-block made of steel and having a depressed bed, (indicated by the lines *b b* in Figs. 2 and 3,) thus providing vertical walls on the sides of and surrounding said depres-

sion, as shown. The bottom of the depression or bed has a recess, as shown in said figures, in which recess are placed type dies or blocks C, each having a letter or symbol raised and projecting therefrom. The plunger D is made of steel and is provided with an end *d*, which fits into the first-named depression of the die-block B. The types C exactly fill the recess, or, if necessary, blank blocks may be used for properly spacing the letters or filling the recess beyond the letters, as desired, as will be readily understood. These types are preferably made of steel and the plate A of brass or a soft metal, which may be silver-plated or otherwise finished.

When the selected types have been put in position, as seen in Figs. 2 and 3, the blank A is laid face downward upon them. The plunger D, operated by any suitable power, preferably by a hydraulic press, is forced down upon the blank A, and the pressure so exerted causes the type or raised portion of the steel dies or blocks C to be embedded or sunk into the softer metal of the plate A, thus imparting their configuration to said plate. The finished plate is seen in Fig. 4, where the letters are shown as formed or sunken into the body of the plate, such depression being plainly indicated in the sectional view of said plate in Fig. 5.

The type-blocks C are of uniform length and have their bottoms formed in a true plane, so as to rest firmly and squarely in the type-recess of the die B. The top surface of the body portion of said dies or blocks C—that is, the portions contiguous to the raised type—thus lies in a true plane, and the edges of said type-dies are ground so accurately and smooth that there is no space whatever between said dies or blocks C when inserted and secured in the type-recess of the die-block B. The result of the forcing operation, therefore, is that not only are the letters or figures exactly formed in the plate A, but the whole surface of said plate outside of said letters or figures is compacted and made perfectly smooth and finished without any ridges, marks, or irregularities between said letters or figures. The plate A thus maintains its true outline and contour, and the upsetting action, which usually accompanies the opera-

tion of punching, is wholly prevented by my invention.

The sides of the types which form the letters or figures in the plate should be slightly beveled to enable the withdrawal of said type from the plate after the operation has been completed. The edges of the letters or figures so formed in the plate are sharp and clean-cut and present the same appearance as hand-engraved work. The depressions formed by the type may, if desired, be filled in with wax or enamel, as in other door-plates or signs.

In Fig. 6 I show a modified form of my invention, where the type *c* is separately made without any block or body portion. In such case the type-recess of the die-block *B* is dispensed with and the bottom of said recess is smooth and in a true plane. The type *c* is laid in position upon the bottom of said recess and there held temporarily in place by a thin layer of beeswax or otherwise. The metal plate *A* is then laid upon said types, and the plunger *D* descends with power and forces or sinks the types into the plate *A*, from which the types are afterward removed by any suitable means. This modified form of the invention is especially useful in the manufacture of large metallic signs.

I claim as a novel and useful invention and desire to secure by Letters Patent—

In devices for the manufacture of door-plates and signs, the combination of a die having a depressed bed of a certain outline and provided with exterior walls and adapted to receive and laterally support a metallic plate, which exactly fits in said depressed bed of the die within the walls thereof, and which is made of an easily-compressible metal, a groove or channel in the bottom of said bed, type dies or blocks inserted in and supported by said groove or channel and having their working faces or ends in contact with said plate, and a plunger movable by power to the die first aforesaid and fitting into the depressed bed thereof within said walls, all arranged as shown and operating to sink the outer ends of said type dies or blocks into said plate and to compact and condense the metal of said plate within said bed and walls and around the ends of the type dies or blocks, substantially as specified.

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

FRANK R. STAFFORD.

Witnesses:

WARREN R. PERCE,
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