No. 734,762. PATENTED JULY 28, 1903.

F. E. SMITH.

DIE.

APPLICATION FILED JULY 2, 1902.

NO MODEL.

Fig. 1.

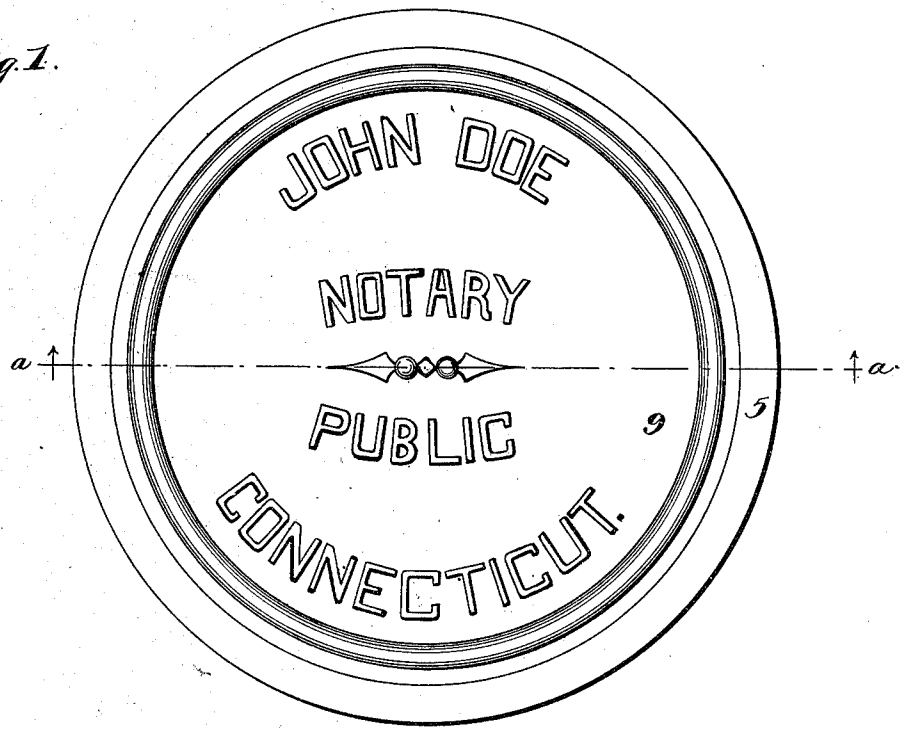


Fig. 2

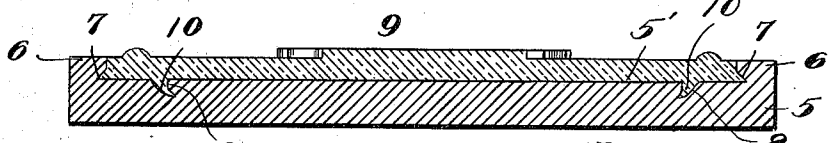


Fig. 3

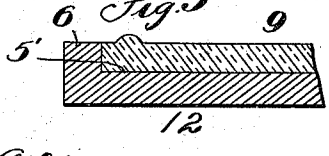
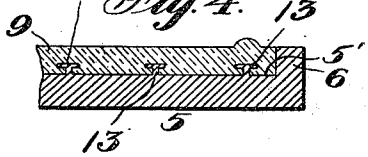


Fig. 4.



Witnesses:

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Wm. P. Laraway

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By his Attorneys:

Bridgett & Peck

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 734,762. Patented July 28, 1903.

UNITED STATES PATENT OFFICE.

FRANK E. SMITH, OF HARTFORD, CONNECTICUT.

DIE.

SPECIFICATION forming part of Letters Patent No. 734,762, dated July 28, 1903.

Application filed July 2, 1902. Serial No. 114,147. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. SMITH, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dies, of which the following is a specification.

My invention relates to dies, particularly those employed in seal-presses.

Heretofore it has been common to form the letters, numerals, design, or impression-surface of the die in a disk or plate of celluloid and to secure this disk by cement or other adhesive material to either the base of the press or to the face of the plunger thereof. Trouble is frequently caused by the detachment of these disks or plates from their supports, thereby necessitating frequent repairs, in which there is liability of defacing or otherwise injuring the impressing or stamping surface of the die.

The object of my invention is the provision of a die in which the impression-surface is so secured to its support that it practically forms a part thereof and is so locked in position that it will not be detached.

In the accompanying drawings, Figure 1 is a plan view of a die constructed in accordance with my invention. Fig. 2 is a transverse section on line *a a* of Fig. 1 looking in the direction of the arrow. Fig. 3 is a section of another form of base or support.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates a support composed of any desired material—as, for instance, brass, lead, or an alloy thereof—and recessed to form a cup-like central portion 5′, the bottom of the wall 6 of which may be undercut, as at 7, Fig. 2, for a purpose hereinafter described. The bottom of the cup in this form of the invention has a circular downwardly and laterally projecting groove 8 formed therein, and in practice the material 9—for instance, celluloid—upon which the impression-surface is formed is softened by heat and then forced under pressure into the cup 5′ and recesses 7 and 8 thereof, and simultaneously with this operation the letters, figures, or other characters are formed in the face of said impression-surface.

Heretofore it has been customary in seal-presses to first form the upper die of some hard material and to employ a soft metal similar in composition to solder for the lower or reverse die, said metal being reduced to a liquid by heat and cast into and upon the upper die, which is used as a mold. Dies produced in this manner wear easily and often with ordinary use become crushed, thereby rendering the seal useless.

By my improved process the lower die may be made with equal facility, with the additional advantage that it permits a superior material to be used. The material preferably employed is celluloid, although it is obvious that other materials—such as cement, amalgam, or gutta-percha, which are in, or may be brought to, a plastic condition—could be utilized.

Referring more particularly to Fig. 2 of the drawings, it will be seen that by recessing the support proper in the manner therein illustrated a positive lock between said support and the improved die will be formed, for if from climatic or other conditions the material of the die should contract the hook-shaped projections 10 of said material which has been compressed into the groove 8 of the support will then be caused to grip the tighter, and if, on the other hand, the conditions should be such as to cause expansion of the material the result would be to lock it the more firmly in the recess 6 of the support.

In Fig. 3 there is illustrated means for locking the die to the support 5, comprising a series of button-like projections 13, upon and over which the material is compressed, although it is distinctly to be understood that the invention is not limited to the exact form of projections shown, for the shape and size of said projections may be varied without departure from the invention, and other means for accomplishing the result of locking the impression-surface in place may be substituted, if desired. It will also be observed that the spaces between these headed projections 13 constitute locking-recesses.

From the above description it will be seen

that by the simple process described a durable die or impression-surface firmly locked to its support may be produced.

Having thus described my invention, what I claim is—

1. The combination, with a chambered base having a continuous inclined inner wall and also having a locking element in the surface bordered by said wall, of an impression-surface of plastic material softened by heat and forced under pressure into said base and to engage the locking element and inclined wall thereof.

2. The combination, with a chambered base having a continuous downwardly-inclined inner wall, and also having a continuous locking-groove opposite in inclination to that of said wall, of an impression-surface of plastic material softened by heat and forced under pressure into the chamber and its groove.

3. A die comprising a chambered base having a circumferential, downwardly-inclined locking-groove, and a locking element in the surface bordered by said groove, and an impression-surface forced under pressure to fill the chamber of said base and to engage said locking element and groove.

4. A die for seal-presses comprising a chambered base having an inclined inner wall and a locking-groove of reverse inclination to that of said wall, and an impression-surface of celluloid softened by heat to a plastic condition and then forced under pressure into the chamber and locking-groove of said base.

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

FRANK E. SMITH.

Witnesses:

FRANCES E. BLODGETT,

FRANK G. CAMPBEL.