

(No Model.)

R. E. WILSON.

EMBOSSING DIE AND PROCESS OF MAKING SAME.

No. 540,377.

Patented June 4, 1895.

FIG. 1

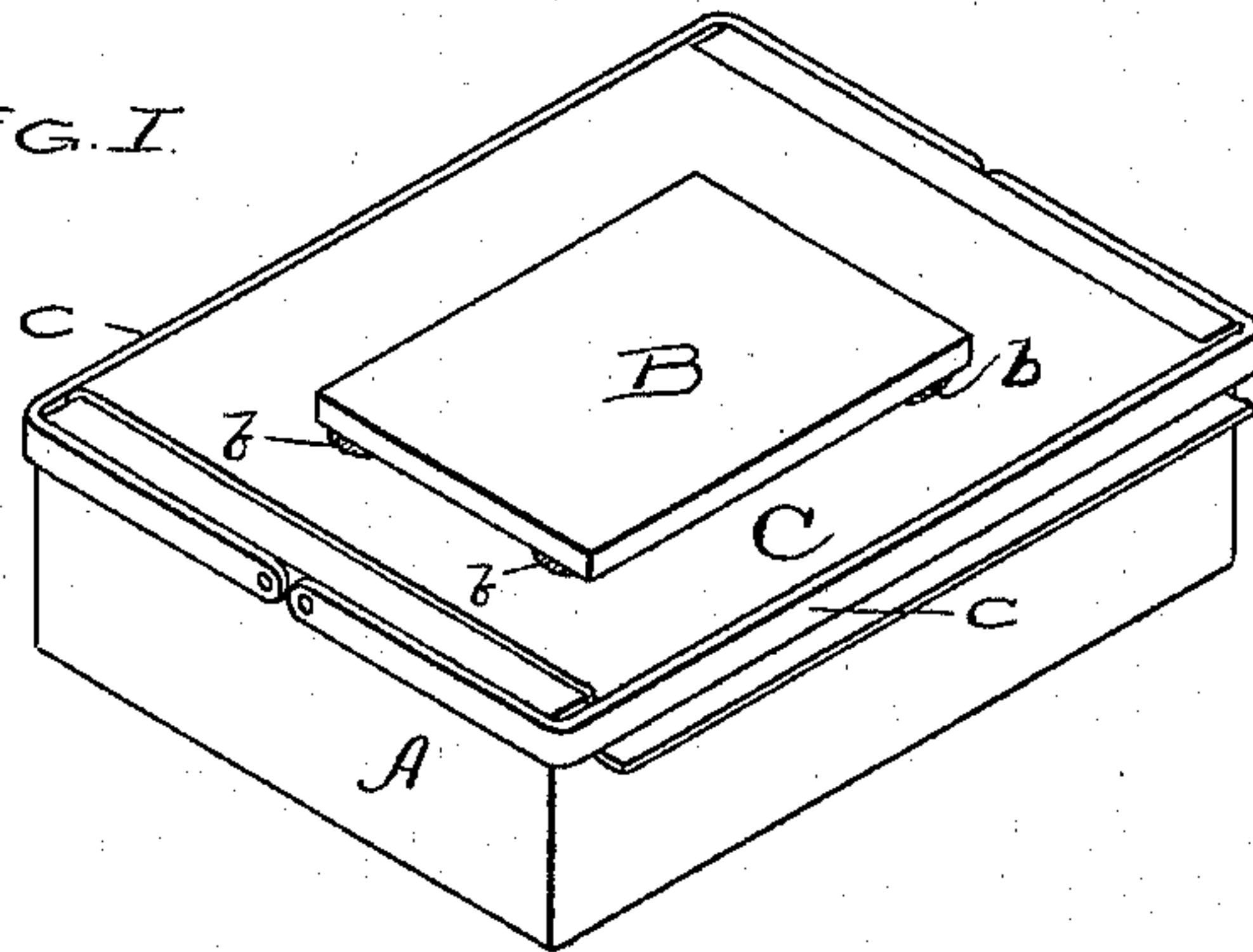


FIG. 2

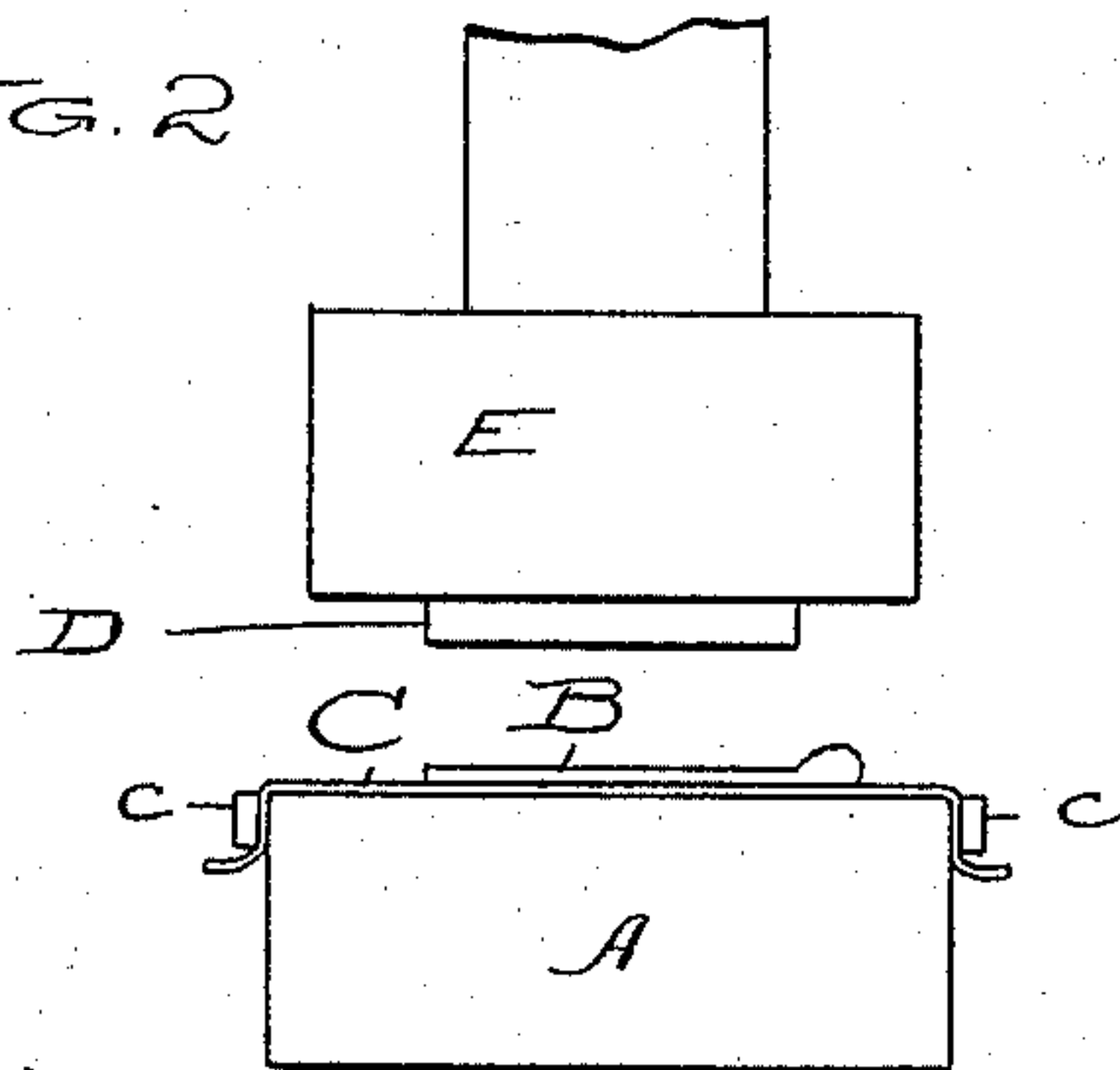
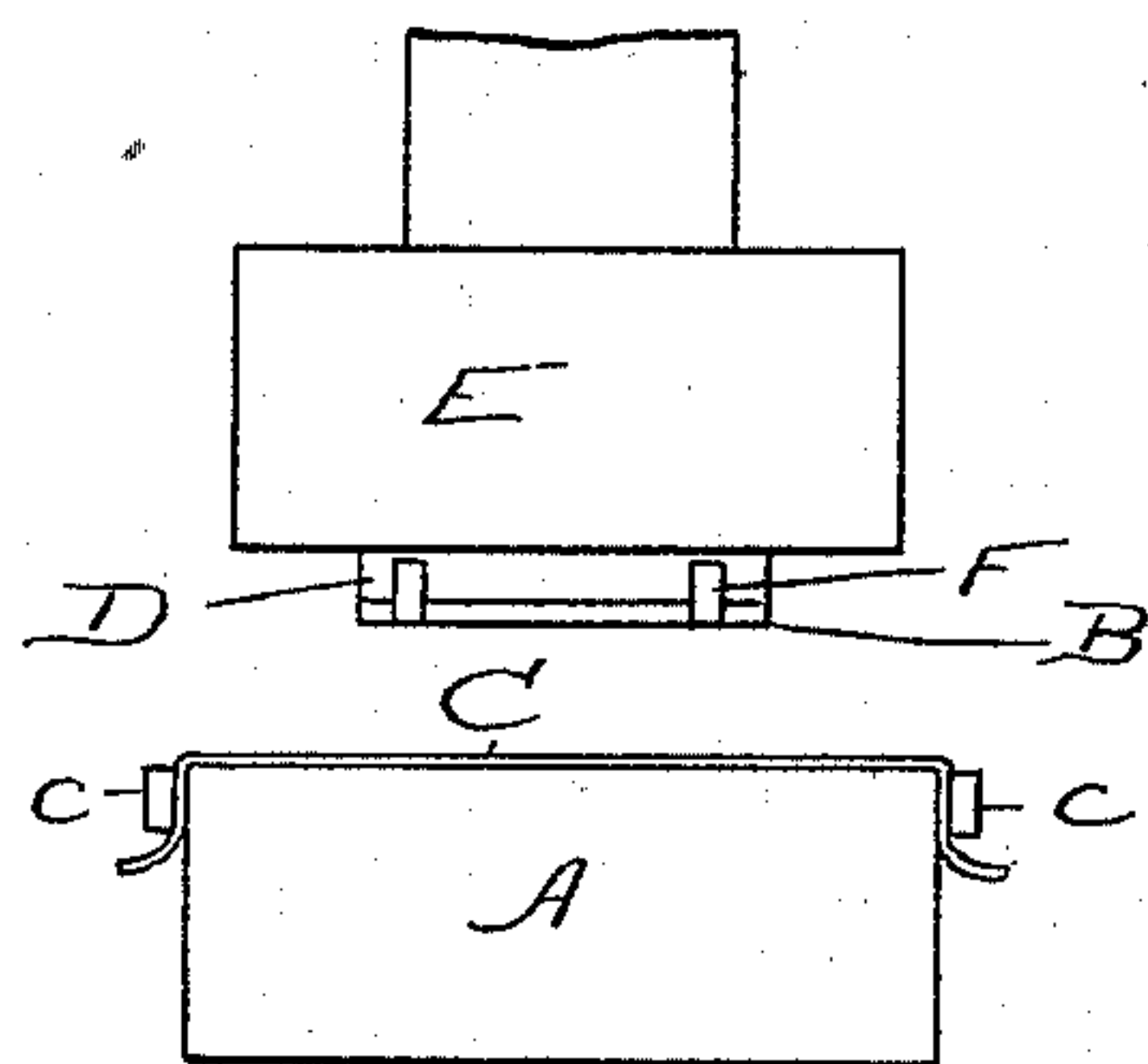


FIG. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

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EMBOSSING-DIE AND PROCESS OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 540,377, dated June 4, 1895.

Application filed March 18, 1895. Serial No. 542,095. (No specimens.)

To all whom it may concern:

Be it known that I, RAYMOND E. WILSON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Composition for Processes of Embossing, of which the following is a specification.

My invention relates to the art of making embossed or raised letters or figures in printing on paper or cardboard.

Heretofore various compositions have been employed for making the male embossing die by impression from the female or engraved die, but such male embossing dies have not heretofore proven satisfactory in operation in respect either to durability or to the quality of work produced, owing to their softness and tendency to wear and become injured, especially in operation upon cardboard or heavy paper; and it has therefore been customary heretofore to have the male embossing die made in metal or copper by stereotyping or otherwise at considerable expense where embossing is to be done on cardboard or heavy paper, or where any considerable number of copies are required, as but a very few copies, a few hundred at most, can be practically produced by the composition embossing dies heretofore in use.

I have discovered that by making the male embossing die, by impression from the female or engraved die, of a composition of gum shellac and guttapercha in equal parts, a male embossing die will be produced from and by which a great number of very perfect and excellent copies or impressions may be taken even upon cardboard or heavy paper, and by which almost any desired number of copies may be successfully taken upon ordinary paper.

In practicing my invention I proceed by the following method or process: I first take equal parts by weight of shellac and guttapercha and put the two gums in a pan of hot water and heat or boil the same until the shellac and guttapercha both dissolve and unite together in a gummy mass of about the consistency of melted beeswax or honey. The melted mass is now sticky or tacky, and I next work it well and thoroughly mix the two in-

gredients together, the working being done preferably with the hands and in much the same manner as dough is worked or as molasses candy is worked or drawn; the working being continued until the mass ceases to be sticky or tacky in character, so that it will not adhere to the hands or to other objects. The composition is now still warm and plastic and of about the consistency of putty. I next place one or more sheets of paper upon the platen of the press and secure the same there by the clamp bars of the platen. I next apply the female die or engraved plate to the paper to indicate thereon the size and position of the male die required to be made from the composition. I next apply mucilage to the surface of the paper sheet on the platen, or at two or more points thereon, to cause the composition to adhere to the paper and thus fix it in place on the platen. I next apply the composition to the platen, or rather to the sheet or sheets of paper secured on the face of the platen; the composition being still warm and plastic and preferably applied about one fourth of an inch in thickness. I next force the female die or engraved plate down upon the plastic composition on the platen with sufficient pressure ordinarily to reduce the composition to about one-eighth of an inch in thickness, thus forming a perfect and complete impression of the female or engraved die in the plastic composition. I then let the press stand for about five minutes, more or less, until the plastic composition hardens. I then open the press and trim off the marginal edges of the composition male embossing die with a knife by first scratching or marking the lines along which the composition embossing die is to be trimmed or cut, when it will fracture along said lines much the same as glass fractures when marked with a diamond. The composition embossing die is then ready for use in the press, in connection with its counter or female die.

The composition embossing die thus produced is exceedingly hard, smooth and durable, almost like glass, and in operation makes fine and perfect work.

After my composition male embossing die has been for a time used it may if required

be removed from the platen and again replaced thereon for subsequent use when desired.

To replace the composition die on the platen
 5 I proceed as follows: I first fix a sheet of paper to the platen as before. I then bring down the male die on the paper to indicate the approximate position for the composition die. I then apply mucilage to the paper on the platen
 10 in order to cause the composition die to adhere to the paper. I then carefully adjust the face of the male composition die to that of the female or engraved die and secure it thereto by strips of paper pasted to the side or end edges
 15 of the two dies and extending from one to the other. I next close the press and force the composition die down against the paper, leaving the press closed until the mucilage causes the composition die to adhere firmly to the
 20 paper fixed to the platen. I then cut or tear off the strips of paper uniting the two dies; when the press and dies are ready for operation.

In the accompanying drawings, forming a
 25 part of this specification, I have, to enable my invention to be more clearly understood, at Figure 1 shown in perspective view a platen furnished with a composition female die embodying my invention. Fig. 2 is an elevation
 30 showing one side trimmed and one side untrimmed, and Fig 3 is an elevation illustrating the manner of replacing the die in the platen.

In the drawings A represents the platen; B,
 35 the composition male die; C, the sheet of paper; c, the clamp bars on the platen; b, the mucilage or adhesive matter; D, the female or engraved die, and E the plunger of the press.

40 F represents the strips of paper for securing the composition die to the metal or female die in replacing the former on the platen.

While I prefer to employ the two gums named in equal parts, the relative proportions
 45 may be varied within reasonable limits.

After the composition die has been used and the required number of copies made, it may be broken up and redissolved in water and the same material used over and over
 50 again many times for making new dies.

I claim—

1. The embossing die for printing on paper or cardboard, composed of gum shellac and

gutta percha only in the proportion substantially as specified. 55

2. The method or process of making male embossing dies consisting in first taking and dissolving substantially equal parts of gum shellac and guttapercha in water, then working the composition until it ceases to be sticky
 60 or tacky, then applying the same to a sheet of paper fixed to the platen of a press and securing the same to said paper with adhesive matter, then making the impression of the female or engraved die thereon, then allowing the composition to cool and harden,
 65 then opening the press and separating the female or engraved die from the composition die, and finally trimming off the surplus material from the edges of the composition die,
 70 substantially as specified.

3. The method or process of making composition embossing dies consisting in dissolving gum shellac and guttapercha in water in the proportion substantially as specified;
 75 working the mass until it ceases to be sticky; applying the mass in a warm and plastic condition to the platen of a press, and then impressing it with the engraved die or plate,
 80 substantially as specified.

4. The method or process of replacing a composition embossing die on the platen of a press, consisting in the following steps: securing a sheet of paper to the platen; applying adhesive material to the paper; adjusting
 85 the face of the composition die to that of the engraved or metal die on the plunger of the press and securing the two dies together by pasting strips to their side or end edges; then closing the press and forcing the composition
 90 die into contact with the paper sheet furnished with adhesive material; and then, after the composition die has been firmly fixed by the adhesive material to the paper sheet, cutting or breaking the strips securing it to the metal
 95 or engraved die, substantially as specified.

5. The embossing die for printing on paper or cardboard composed of gutta percha and shellac, furnished with a paper backing secured thereto by adhesive material, substantially
 100 as specified.

RAYMOND E. WILSON.

Witnesses:

H. M. MUNDAY,
 LEW. E. CURTIS.