

A. G. SCOPES.
 EMBOSSED PHOTOGRAPHS OR OTHER PICTURES.
 APPLICATION FILED MAY 18, 1908.

957,630.

Patented May 10, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

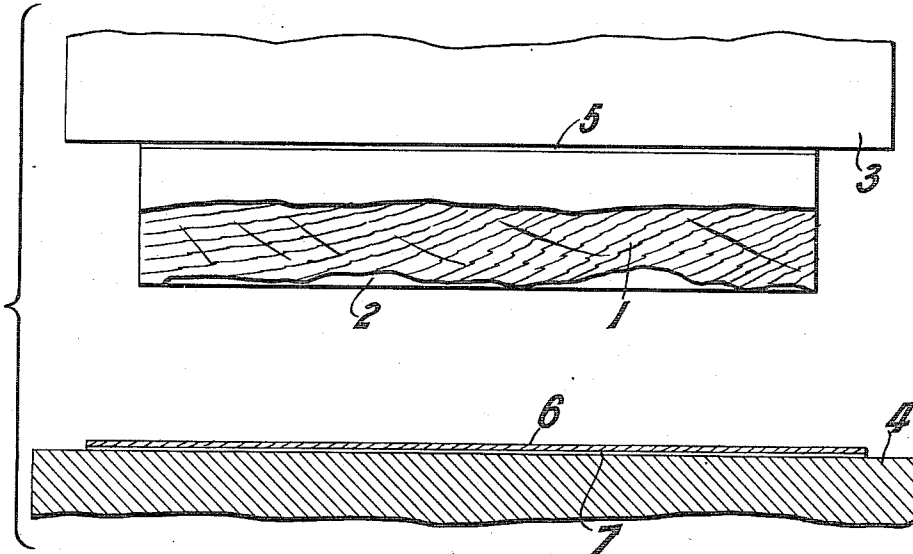


FIG. 2.

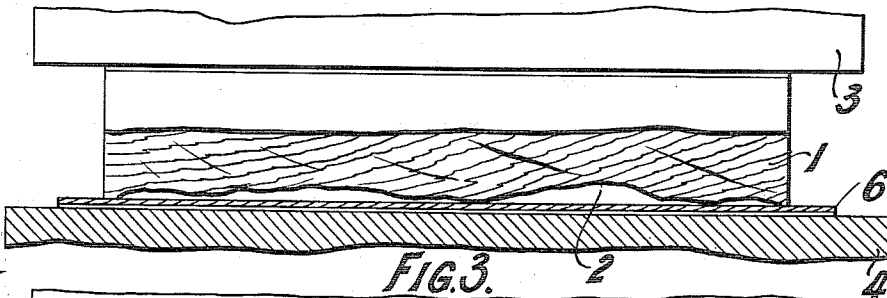
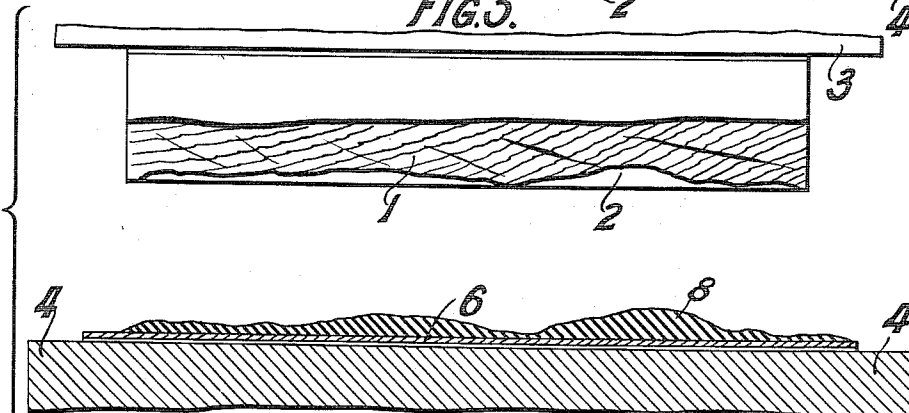


FIG. 3.



Witnesses
 Chas. H. Smith
 A. L. Berrell

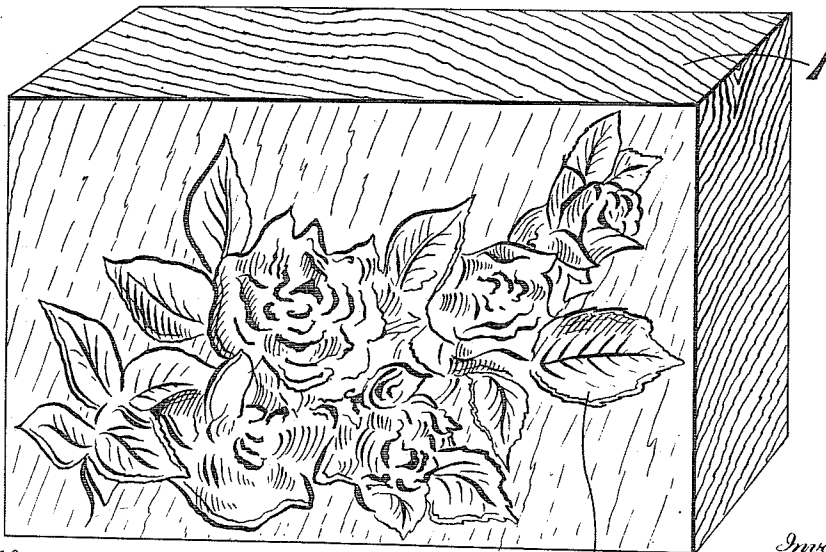
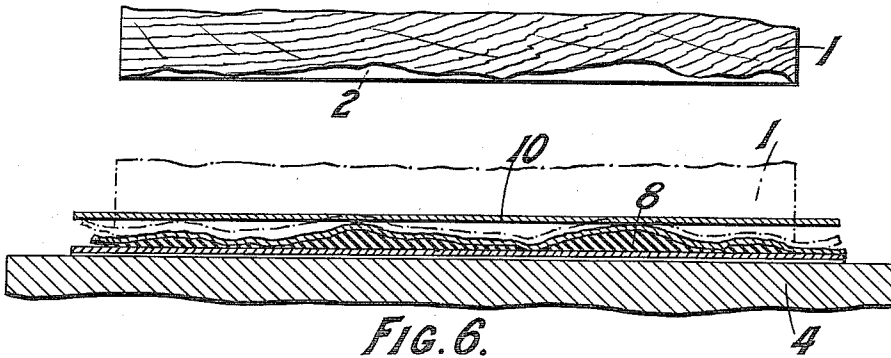
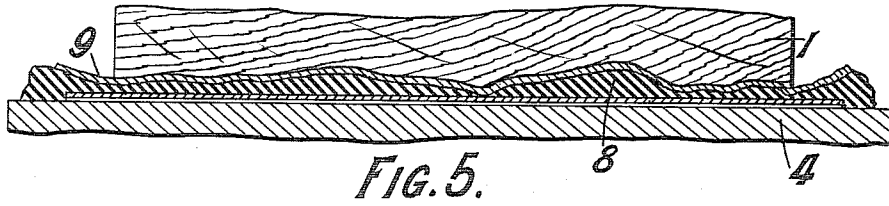
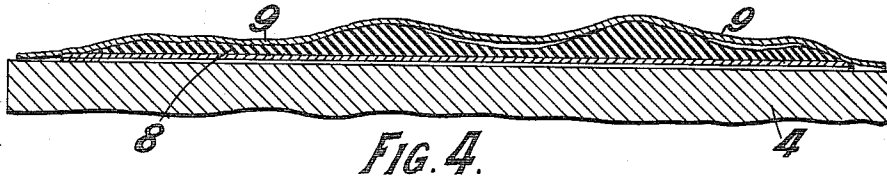
Inventor
 Alfred G. Scopes.
 by Harold Berrell
 his atty

A. G. SCOPES.
 EMBOSSING PHOTOGRAPHS OR OTHER PICTURES.
 APPLICATION FILED MAY 18, 1908.

957,630.

Patented May 10, 1910.

2 SHEETS—SHEET 2.



Witnesses
 Chas. Smith
 Wm. Berrell

Inventor
 2 Alfred G. Scopes.
 by Harold Terrell
 for him

UNITED STATES PATENT OFFICE.

ALFRED GOWING SCOPES, OF IPSWICH, ENGLAND.

EMBOSSING PHOTOGRAPHS OR OTHER PICTURES.

957,630.

Specification of Letters Patent.

Patented May 10, 1910.

Application filed May 18, 1908. Serial No. 433,467.

To all whom it may concern:

Be it known that I, ALFRED GOWING SCOPES, a subject of the King of Great Britain, residing at Ipswich, in the county of Suffolk, England, have invented certain new and useful Improvements in Embossing Photographs or other Pictures, and of which the following is a specification.

It has been proposed to print photographs upon rounded or bulged paper to give the image or picture upon the photograph the appearance of standing out in relief. A considerable advance upon this well known process consisted in forming a mold from a block of wood carved out to the various depths required to produce a molded impression of the picture, and then the photographic print having been mounted upon a cardboard backing and suitably damped, was laid face downward upon the mold so that the print registered with the mold. Then a sheet of spongy indiarubber was laid upon the back of the print and the whole combination placed under a considerable pressure and left under that pressure until the print was set, and when removed the photographic print had a certain amount of relief permanently imparted to portions or features of the picture.

This process although producing fairly good results, had certain disadvantages because portions of the picture could not be brought out into such sharp relief as was considered desirable, owing to the difficulty of forcing the indiarubber backing sufficiently into the intaglio portions of the mold, and if the relief portions of the picture were numerous and were required to be of any considerable height above the plain surface of the paper, enormous pressure was required to be applied to the indiarubber backing which consequently became rapidly deteriorated; beyond this, a still further and more serious disadvantage from a manufacturer's point of view was found in the fact, that the necessary quality of the indiarubber backing was extremely expensive and even then not lasting, and beyond all this the extremely elastic pressure to which the relief portions of the picture were subjected, to force them into the depressions of the mold, rendered it necessary to leave the picture under pressure some considerable time to produce a proper and permanent relief, and therefore the process was slow and occupied

the presses in a factory for such a period of time as naturally increased the expense of out-put. Now I have found that bas-relief photographs or pictures can be produced by employing the improved process according to this invention, and as hereafter described, and this at greatly less expense than heretofore, while at the same time the parts can be produced more sharply in relief without the picture so treated having to be left under pressure for any considerable time.

An essential element in the improved process, according to this invention, is the manufacture and provision of a proper and suitable die to operate in opposition to the recessed mold, and in carrying out the manufacture so that it may be a commercial success I have found it is essential that the die should be capable of being very easily and cheaply manufactured, and that it shall be made so that it automatically registers with the mold; moreover, the die must be sufficiently hard and capable of being produced with elevations of the required height to precisely and accurately fit and fill all the recesses which have been formed in the mold.

I will now describe the present invention with reference to the accompanying series of diagrams Figures 1 to 6, which illustrate the moving head and the stationary platen of a press, one carrying the wood mold and the other the die made according to this invention in various stages of manufacture, and Fig. 7 is a perspective view illustrating the mold detached and composed of a block of wood 1 having the intaglio portions of the picture formed in it by carving as at 2.

In carrying out the present invention, the mold 1 (Fig. 7) is first produced substantially in the well known manner before stated, that is, a tracing of the picture which is to be embossed is taken, and transferred in a reverse position on to the face of the wood-block, and the requisite formation of the mold—that is the depressions corresponding to those parts of the picture which are required to be outstanding when embossed—are cut into the face of the wood-block as at 2, by any known carving process effected by hand or otherwise, and such a block, so carved, is fixed on the moving head 3 of a press by for example a layer of adhesive material 5 as is indicated at diagram Fig. 1, and upon the bed 4 of the press a

piece of comparatively soft thick paper 6 is attached by a layer of adhesive material 7, such as dextrin.

In the course of manufacture of the die according to this invention, the head of the press 3—carrying the mold 1—is then brought down as is shown at Fig. 2 on to the layer of paper 6, which may be thick blotting-paper, and which is, as aforesaid, secured by adhesive (which may consist of dextrin) to the surface of the stationary platen of the press, and so an impression of the block 1 is produced on the paper 6 on the platen 4.

In carrying out the present process, the die is to be manufactured directly upon the stationary bed or platen of the press, and by doing so, that is by making the die *in situ* in the press, I insure that the said die shall automatically register with the mold. Accordingly, a composition is then prepared consisting of plaster of paris, dextrin and water mixed in such proportions that a paste is produced of such consistency that it will not easily flow, and this composition 8 is then spread over the paper layer 6 on the platen of the press, the said composition being roughly placed so that there is a thicker layer over those parts marked on the paper pad 6 which will constitute the relief portions of the picture which is to be produced, and it will be readily observed by inspection of the marked surface of the paper 6—the mold 1 having been raised—the positions in which the layer of composition should be thickly laid, that is where high relief portions are to be produced.

The diagram Fig. 2 of the drawings, shows the mold 1 brought down with pressure on to the paper layer 6 of the platen in order to mark the latter, and Fig. 3 shows the mold 1 raised and the plastic composition 8 roughly spread upon the paper layer 6. Over this composition, a piece of paper 9—which has been treated with dextrin solution on its surface—is placed with the so treated surface in contact with the composition as is indicated by the diagram Fig. 4, which shows the platen of the press with the composition thereon, and then the mold 1 is brought down onto the paper-covered composition as shown at Fig. 5; at the time that composition is still soft, and it will be found that the paper cover 9 and the composition 8 will enter the intaglio portions of the mold 1.

It may be observed, upon inspection, after the mold 1 has been raised, that the composition and the paper cover completely fill the intaglio portions of the block where they are not very deep, but in many cases when the mold 1 is raised, it will be seen that the soft paper-covered composition has not completely filled the deeper intaglio portions of the mold.

If it is found that the impression upon the paper-covered composition—which is to compose the die—is not perfect, the paper cover 9 is pulled off, and this can be done without any great disturbance of the composition beneath it; and then a further supply of composition is placed upon those portions which obviously require a greater height. The paper 9, or any similar piece of paper treated with dextrin, is then laid over the composition so augmented, and the head of the press is again brought down, and it will be found in most cases that a perfect impression is produced of all the intaglio portions of the mold upon the paper-covered composition 8, which is then allowed to dry and become hard, which it very rapidly does. When a perfect die has been so produced and the composition has become hard, a paper copy or print of the original picture is then taken—which may be a photographic or other print colored or not—and upon the back of this picture is first fixed a piece of thick soft paper, such as blotting-paper, by a layer of adhesive material such as dextrin. Then the backed picture 10 is placed upon the die with the face of the picture toward the mold 1 as shown at Fig. 6, and is so placed, by the aid of register marks, in any well known way, so that the relief portions correspond to the raised parts of the die. Then the mold 1 is brought down with a considerable pressure, and after remaining under that pressure for a few seconds, the mold may be raised and the picture removed and allowed to dry, that is, the adhesive material by which the backing is secured to the picture is allowed to dry, and it will then be found that the predetermined parts have been permanently raised and given the effect of a bas-relief picture, and the backing of the picture permanently retains the parts in relief and prevents the same being again flattened.

I claim as my invention:—

1. The hereinbefore described process of forming a cameo or relief die from an intaglio die or recessed mold for embossing pictures, consisting in applying a coating of adhesive to a sheet of yielding material, placing the sheet of yielding material adhesive side down on a suitable bed beneath the intaglio die and bringing this intaglio die down with pressure to obtain an impression of the margin and flat portions thereof on the said sheet of yielding material, raising the intaglio die, placing a layer of suitable hard setting plastic composition on the said piece of yielding material and making the said layer of plastic composition thickest over those parts of the yielding material to be formed in the greatest relief, then covering the same with a sheet of yielding material having an intervening adhesive and

then bringing the intaglio die down a second time with pressure to shape the said covering of yielding material and plastic composition conformably to the said intaglio die and allowing the thus formed
5 cameo die to set hard for use.

2. The hereinbefore described process of forming a cameo or relief die from an intaglio die or recessed mold for embossing
10 pictures and the like, consisting in applying an adhesive to one side of a sheet of soft paper, then placing the said sheet of soft paper adhesive side down in a suitable flat bed beneath the intaglio die, then bringing
15 the intaglio die down with pressure upon the said sheet of soft paper to obtain therein an impression of the margin and flat parts of the said intaglio die, then raising the intaglio die, then placing a layer or layers of
20 hard setting plastic composition on the said

piece of soft paper and making the said layer or layers of plastic composition thickest over those parts of the piece of soft paper, as shown by the impression made therein, which are to be formed in the greatest
25 relief, then covering the said plastic composition with a sheet of paper with an intervening adhesive and then bringing the said intaglio die down with pressure a second time upon the said paper and plastic
30 composition to shape the same conformably to the intaglio die and allowing the cameo die thus formed to set hard for use.

In witness whereof I have hereunto set my hand in the presence of two witnesses. 35

ALFRED GOWING SCOPES.

Witnesses:

GRIFFITH BREWER,
THOMAS W. ROGERS.