

UNITED STATES PATENT OFFICE.

HUDSON M. KITCHELL, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE
KITCHELL EMBOSSING COMPANY, OF BAYONNE CITY, NEW JERSEY.

PROCESS OF EMBOSSING PAPER, CARD-BOARD, AND LIKE IMPRESSIBLE MATERIALS.

SPECIFICATION forming part of Letters Patent No. 453,596, dated June 2, 1891.

Application filed December 17, 1888. Serial No. 293,856. (No specimens.)

To all whom it may concern:

Be it known that I, HUDSON M. KITCHELL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented and made certain Improvements in the Process of Embossing Paper, Card-Board, and Like Impressible Materials; and I hereby declare that the following specification is a full, clear, and exact description and explanation of the same, so that those skilled in the art of embossing impressible materials may understand, use, and practice the process herein set forth.

I am aware that paper, leather, and other materials of like impressionable character have heretofore been embossed by means of dies with various raised or depressed designs. Such dies have been made from some metal with the designs engraved in it or electro-typed upon it.

I am also aware that molds have been made of soft plastic materials and compositions of materials for molding metals; but I am not aware that ever previous to my discovery and invention thereof dies in contradistinction to molds as known in the arts have been made of soft and plastic materials other than metals, so that soft designs can and are impressed, cut, or engraved in it and then hardened to such a point that the material from which the dies are made will be both hard to resist abrasion and tough enough to resist cracking while in use whenever needed in embossing pliable materials.

My invention consists in covering a suitable backing with a coat of plastic material, then forming a design in the plastic coating, and then transferring the design to the paper or other article to be ornamented. I use a compound plastic material so prepared as to be soft and pliable for a sufficient length of time to allow the designs to be engraved or molded by hand or impressed in it and then hardened in any suitable way.

The ingredients composing the plastic compound are as follows: glue, molasses, water, and plaster-of-paris in the following proportions: dissolved glue, one pound; water, one

gallon; molasses, one pint; plaster-of-paris, twenty pounds; but I do not confine myself to these exact proportions. These ingredients are then placed in a receptacle and thoroughly mixed together. It then becomes a thick sticky mass that can be easily modeled into the desired design and is of great strength and hardness when dry.

The *modus operandi* employed in making the various designs is as follows: The composition after being mixed is poured on a large sheet of flexible metal or flexible card-board and worked over the surface of the card-board or metal sheet with the hands or a brush until it is perfectly smooth and of an even thickness all over the surface. The design is then drawn or engraved in the plastic composition while it is still in a soft or hard state. The implements used in drawing or engraving the design are the hands or small pieces of wood with the points sharpened to various thicknesses. After the design is finished the metal or card-board sheet, with its plastic surface, is allowed to thoroughly dry. It is then smoothed down with sand-paper. When this is finished, a sheet of paper or card-board is laid on this design, and then another sheet of card-board is laid on top of that. Then they are made to pass between two iron rollers having immense power and pressure, which presses the card-board down into the lines of the design drawn or engraved on the plastic compound, and when the card-board is taken from this surface the design will be found embossed on the card-board in high relief. The engraving can be done, if so desired, after the plastic surface of the die is thoroughly dried.

It is well known that the art of making dies of metal by the electrotpe process or by engraving is a very tedious and expensive one and adds largely to the cost of production of embossed materials. My process, as hereinbefore set forth, obviates this difficulty and renders it possible to produce embossed materials cheaply, quickly, and with a wider scope than with the old methods. A great variety of designs on the dies can and are made with rapidity and the cost largely reduced.

No claim is made herein to the article described, as this is covered by my patent No. 440,166, of November 11, 1890.

Having now fully described my invention
5 and the manner of practicing it, what I claim as new and useful, and desire to secure by Letters Patent, is—

1. The within-described process of emboss-
ing card-board and the like, which consists in
10 spreading upon a flat flexible surface a plastic substance, then forming the desired design therein, and then transferring the design to the article to be ornamented.

2. The method, substantially as hereinbe-
15 fore set forth, consisting of the following operations, viz: first, covering a hard flat flexi-

ble blank with a coat of plastic material, and, second, engraving the said plastic coat while in a soft or hard condition.

3. The within-described process of emboss- 20
ing card-board and the like, which consists in covering a suitable backing with a coat of plastic material, then engraving a design in the plastic coat, hardening and smoothing the plastic material, and then transferring the 25
design to the paper or other article to be ornamented.

HUDSON M. KITCHELL.

Witnesses:

W. L. BENNEM,
JAS. E. WARNER.