

(No Model.)

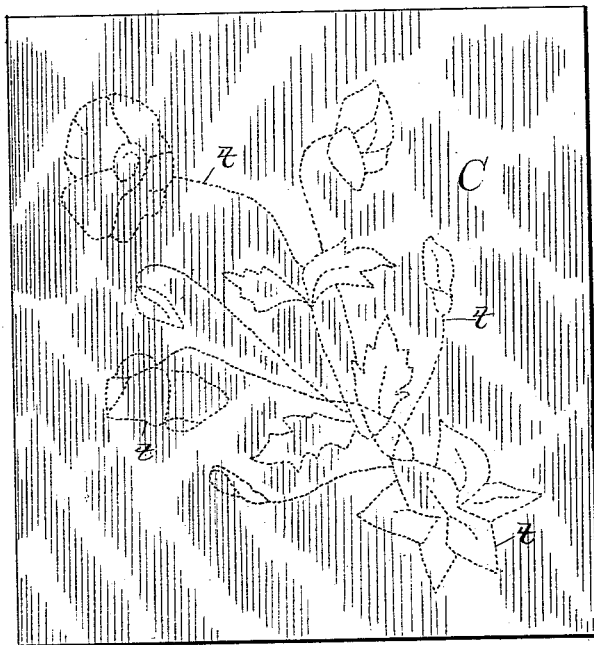
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METHOD OF MANUFACTURING DIES FOR PRODUCING PERFORATED  
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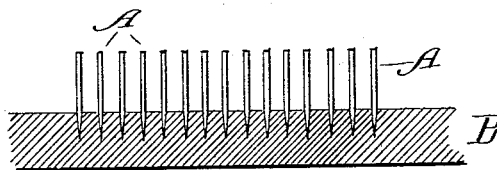
No. 346,580.

Patented Aug. 3, 1886.

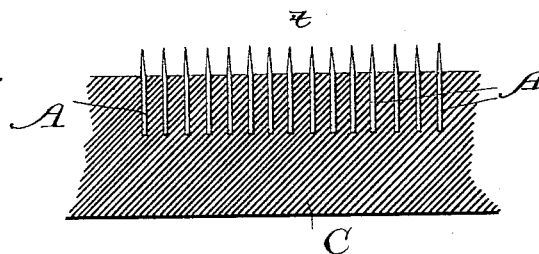
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
Chas. E. Gaylord.  
Wason Bros.

Inventor:  
Henry B. Cobb,  
By Dymforth & Dymforth,  
Attys

# UNITED STATES PATENT OFFICE.

HENRY B. COBB, OF WILMINGTON, DELAWARE.

METHOD OF MANUFACTURING DIES FOR PRODUCING PERFORATED PATTERNS.

SPECIFICATION forming part of Letters Patent No. 346,580, dated August 3, 1886.

Application filed June 29, 1885. Serial No. 170,103. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY B. COBB, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented a certain new and Improved Method of Manufacturing Dies for Producing Perforated Patterns; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates particularly to the manufacture of dies for patterns of the nature of those which are prepared for the stamping with designs of material to be embellished with embroidery, upon which the designs of the pattern are transferred by painting over the latter, whereby the paint becomes deposited upon the material in dots through the numerous minute perforations forming the configurations upon the pattern-sheet. Hitherto the manufacture of these pattern-sheets has entailed a laborious operation that requires considerable time to perform, and permits at the most but a few patterns to be made at one such operation. These causes render the production of this article expensive; and it is my object to overcome the causes which are productive of disproportionate expense in the manufacture by providing dies from which to take the patterns by impression, in a manner similar to the proceeding of printing on a press, and formed by the method constituting my invention, which consists, essentially, in inserting pins into a readily-penetrable substance to cause them to form a design, and setting the pins in their adjusted positions by embedding them toward their exposed extremities in a suitable substance in a plastic state, which becomes hard by exposure.

My invention also consists in certain steps forming details in the manner of procedure.

Referring to the drawings, Figure 1 is a plan view of a die for producing perforated patterns formed according to my improved method; Fig. 2, a sectional view showing the points of the pins inserted into a soft-wood board, which forms one step in the manufacture of the die, and Fig. 3 a sectional view of the same, showing, in elevation, the pins employed to produce the design set into a retaining substance.

A A are headless pins of uniform size, the

points, *t*, of which are driven to an equal depth—a suitable instrument being employed to gage the depth of penetration—preferably into a board of soft wood, B. The surface of the board is, by preference, provided with a design, the lines of which are followed in driving the pins, though it is thought an expert designer may be capable of forming his design upon the surface originally with the pins. Instead of using soft wood for the purpose, other substance—such as thick paper—may be employed.

When the pins are adjusted at their points in the manner just described, a suitable cement, or plaster-of-paris, or molten metal—such as lead—is applied to the surface, preferably confined by a suitable frame surrounding the design, and embeds the exposed portions of the pins, which, when the embedding substance becomes hard by exposure, are set within the bed-plate; and the die thus formed is removed from the surface penetrated by the points of the pins, and is thus rendered ready for use, preferably in a press, in which the design on the die is most readily and rapidly transferred to sheets of paper, which are perforated by the projecting pin-points forming the design. The extent of projection of the points may be regulated in driving the pins to form the die, to perforate only one sheet at a time without injuring the pin-points in transferring the design to produce a pattern, or they may be caused to project to produce the transfer simultaneously upon several sheets; but dies formed for the last-named purpose should, when used to produce perforated patterns upon single sheets, be provided with one or more sheets penetrated by the pin-points and operating to reduce the extent of projection of the latter sufficiently to adapt the device to its work without danger of injury to the parts.

If desired, the substance into which the pins are first inserted to form the design may be soft rubber, when it is not necessary that they shall penetrate entirely through the substance, since the pressure brought to bear upon the die in using it will cause the points to penetrate and puncture the sheet or sheets in the operation of pattern-making. This or an analogous substance, therefore, when used, of course renders

unnecessary the last step of the method—*i. e.*, the removal of the pins from contact with the substance penetrated by them.

If molten metal is used to form the bed which serves to set the pins, the surface into which the points are inserted should be coated with some non-combustible material—such as asbestos—either in the form of paint or a paper sheet.

What I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described method of forming dies for making perforated patterns, which consists in inserting pins into a readily-penetrable substance to form a design, and setting the pins in their adjusted positions by embedding them toward their exposed ends in a suitable substance in a plastic state, which hardens on exposure, substantially as described.

2. The herein-described method of forming dies for perforated patterns, which consists in inserting the points of pins a predetermined distance into a soft substance to form a design with the pins, setting the pins in their adjusted positions by embedding them toward their exposed extremities in a suitable substance in a plastic state, which hardens on exposure, and removing the points of the pins when firmly set from contact with the soft substance penetrated by them, substantially as described.

HENRY B. COBB.

In presence of—  
EDWARD THORPE,  
MASON BROSS.