(No Model.)

G. P. HELFRISH.

MANUFACTURE OF PAPER PLAQUES.

No. 255,168. Patented Mar. 21, 1882.

Fig. 1.

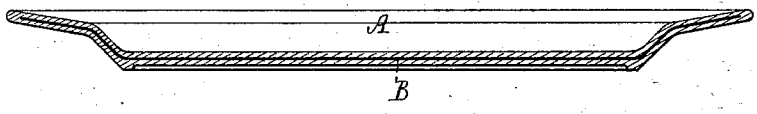
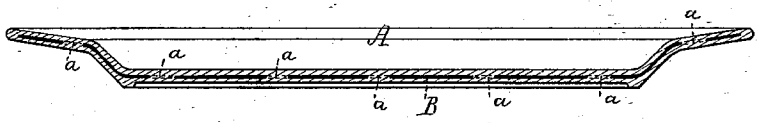


Fig. 2.



Witnesses.
S. N. Piper
E. B. Pratt.

Inventor.
George P. Helfrish.
by R. H. Eddy atty

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE P. HELFRISH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO LOUIS PRANG, OF SAME PLACE.

MANUFACTURE OF PAPER PLAQUES.

SPECIFICATION forming part of Letters Patent No. 255,168, dated March 21, 1882.

Application filed November 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. HELFRISH, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Plaques of Paper; and I do hereby declare the same to be described in the following specification and represented in Figures 1 and 2 of the accompanying drawings, which are transverse sections of such a plaque made in accordance with my invention, the nature of which is defined in the claims hereinafter made.

The invention specially relates to the manufacture of plaques made of paper or papier-maché, which in drying, as well as afterward, are very liable to become warped, the object of the invention being not only to strengthen them, but to cause them to retain their proper forms while in the process of manufacture and drying, as well as subsequently.

In carrying out the invention I combine with the wet or moist paper or plastic papier-maché body of the plaque a thin metallic re-enforcing disk or plate, to be inserted within the said body while it is wet or moist and before it is pressed into its concavo convex form by dies, the re enforcing plate being thoroughly covered on its opposite surfaces and on or about its edges by the wet paper or papier-maché. Having thus properly covered the re-enforcing plate, as described, the whole is to be placed between dies and pressed by them into the requisite concavo-convex form, the combined re-enforce and body material being subsequently subjected to heat or other suitable means of evaporating the water or moisture. When wet paper is used it is well to cover the surfaces with paste, glue, or cement of some suitable kind, in order to effect not only a strong adhesion of the layers of paper to each other, but to the re-enforce. The body material is usually made of layers of paper laid on each other on each side of the re-enforce, the pack on one side of it extending beyond it and lapping for a short distance on the pack on the other side; or the article may consist of two layers or disks of pasteboard and the re-enforcing plate between them, in which case, as well as when papier-maché or sheets of paper constitute the body material, the re-enforcing plate is perforated or made foraminous, in order that the material on either side of it may be pressed into and through the re-enforce, so as to come into close contact with or unite with the material on the opposite side of such re-enforce.

In the drawings, Figures 1 and 2 represent the paper plaque in its transverse section, the re-enforce being shown in Fig. 2 as perforated or foraminous. In some cases it may be a woven wire or meshed fabric. In each of these figures the body material is shown at A and the metallic re-enforce at B.

By first applying the body material to the re-enforce in a flat state and next reducing both to a concavo-convex form by dies the paper and re-enforce become simultaneously expanded and reduced to shape and combined, and the water is expelled to much better advantage than follows from first reducing by dies the re-enforce to form and next applying the paper to it; and, besides, the paper may be applied in the form of pasteboard, which it cannot be when the re-enforce is concavo-convex, as the dies would cause, in most if not all cases, overstraining and rupture of the board.

I therefore claim—

1. As a new or improved article of manufacture, a plaque having a body consisting of paper or pasteboard, and a re-enforcing plate of metal, arranged therein and completely covered thereby, and both rendered concavo-convex simultaneously between and by dies, as set forth.

2. As an improved article of manufacture, a plaque composed of layers of paper or pasteboard and a foraminous or perforated metallic plate or meshed re-enforce, arranged as described, and rendered simultaneously concavo-convex and smoothed by means of dies, as set forth.

GEORGE P. HELFRISH.

Witnesses:

R. H. EDDY,

E. B. PRATT.