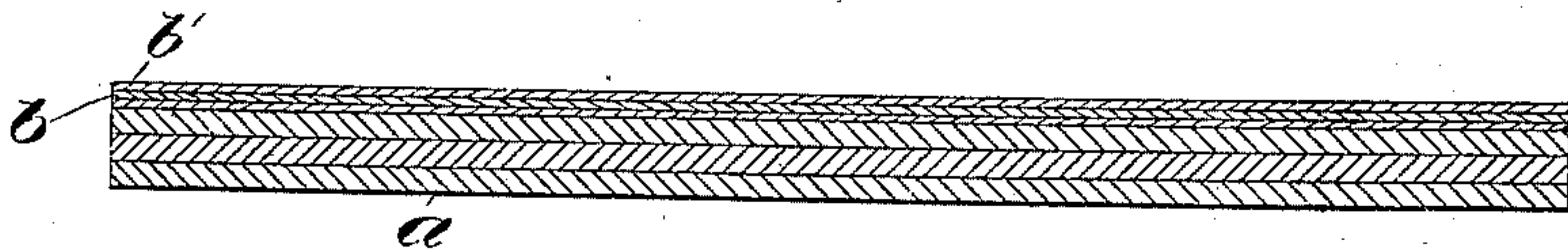


(No Model.)

C. M. GAGE.
MATRIX BOARD.

No. 465,847.

Patented Dec. 29, 1891.



Witnesses:

Fred S. Gumbel
Edgar A. Goshen

Inventor:

Charles M. Gage.
by Crosby & Morgan/attys.

UNITED STATES PATENT OFFICE.

CHARLES M. GAGE, OF PEPPERELL, MASSACHUSETTS.

MATRIX-BOARD.

SPECIFICATION forming part of Letters Patent No. 465,847, dated December 29, 1891.

Application filed July 5, 1888. Serial No. 279,099. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. GAGE, of Pepperell, county of Middlesex, State of Massachusetts, have invented an Improvement in Matrix-Boards, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a novel matrix-board, especially applicable for stereotyping, electrotyping, &c.

In accordance with my invention my improved matrix-board is made of sheets of paper composed of vegetable fiber, preferably two or more of the said sheets of paper being treated, as will be described, whereby the elasticity of the fiber is destroyed, and having a waxy surface, so that when an impression is made on the paper—as for instance, by a type—the impression is well defined and formed substantially perfect, the said impression, owing to the non-elasticity of the matrix-board, being preserved for a substantially indefinite period of time.

The drawing represents in section, on an enlarged scale, a matrix card-board embodying my invention.

In order that my invention may be readily comprehended, I will hereinafter enumerate the method preferred by me for making my improved matrix-board, which for purposes of convenience may be supposed to be composed of three distinct parts—viz., first, a back; second, a body composed of prepared paper, and, lastly, a finishing-sheet having a waxy surface.

The back of my improved board is substantially hard and is preferably made of three or more sheets *a* of paper pasted together and which may be hard calendered paper, such as known to the trade as “book-paper,” or which may be paper made from wood fiber, rags, or a mixture of both, the said paper being free from knots or hard pieces. The back as thus prepared has pasted to it preferably two or more layers or sheets *b* of paper to form the body, the said sheets being made for the best results from linen and cotton rags, but which may be made from any vegetable stock having a long fiber. These sheets, before being pasted to the back, are treated, preferably, with a solution composed of shellac, borax,

and water compounded for the best results in the following proportions, viz: Six pounds of shellac, three pounds of borax, and sixteen quarts of water. The solution thus prepared is boiled until the shellac is thoroughly cut, which takes usually from two to three hours. The sheets of paper to be treated are dipped into the solution and thoroughly dried in any well-known or usual manner. The matrix-board will then preferably have applied to it a finishing-sheet of paper made of a strong long vegetable fiber. The finishing-sheet *b'* is pasted onto the prepared sheets and will have applied to it a coating of paraffine, or wax, or other analogous substance.

The matrix-board thus prepared is especially designed for electrotyping, stereotyping, &c., the impression imparted to the surface of the board, as by a type, being well defined, and owing to the elasticity of the fibers of the chemically-prepared paper being destroyed by the solution the impressions made in the said matrix-board are substantially uniform and are “type-high,” as it is technically known—that is, the depth of each impression is such as to produce the desired or proper height of type in the stereotype or electrotype, and owing to the non-elasticity of the prepared paper this uniformity of depth is maintained for substantially an indefinite period of time, so that a matrix-board from which a stereotype or electrotype has been once taken may be used again, even after a very considerable lapse of time.

It is evident other well-known substances may be used instead of borax to cut the shellac—as, for instance, alcohol.

I prefer to make the matrix-board of three parts, as specified; but in some instances the finishing-sheet may be omitted and the impression made directly upon the prepared paper, the latter being covered with a coating of paraffine, wax, &c.

I prefer to make the back of the matrix-board of paper composed of vegetable; but, if desired, the said back may be made of paper composed of animal fiber or a mixture of animal and vegetable fiber, or the said back may be of other material—as, for instance, papier-maché, wood, leather, &c.; but in all cases the prepared sheets of paper will be of vegetable fiber.

The essential feature of the invention is the body *d*, deadened or rendered inelastic so as to preserve the impression intact.

I claim—

- 5 1. A matrix-board comprising a back of hard paper, a body of softer paper which is rendered inelastic by a solution of shellac, and a waxysurface, substantially as described.
- 10 2. A matrix-board consisting of a back of hard paper, a body of softer paper which is

shellacked to render it inelastic, and a waxed finishing-sheet, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES M. GAGE.

Witnesses:

G. W. GREGORY,
JAS. H. CHURCHILL.