

B. F. UPHAM.
METHOD OF BENDING PRINTING SURFACES.
APPLICATION FILED JAN. 30, 1908.

1,038,991.

Patented Sept. 17, 1912.

Fig. 1



Fig. 2

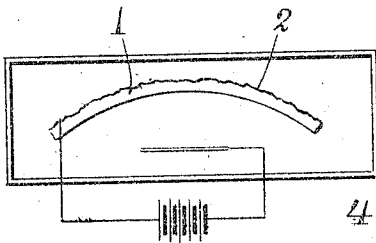
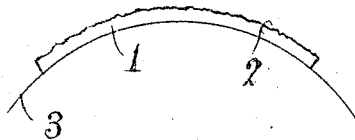


Fig. 3

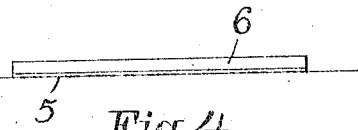


Fig. 4

Witnesses:
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UNITED STATES PATENT OFFICE.

BURT F. UPHAM, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO SOUTHGATE MACHINERY CO., OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

METHOD OF BENDING PRINTING-SURFACES.

1,038,991.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed January 30, 1908. Serial No. 413,389.

To all whom it may concern:

Be it known that I, BURT F. UPHAM, a citizen of the United States, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Methods of Bending Printing-Surfaces, of which the following is a full, clear, and exact description.

The object of this invention is the effecting of improved means for producing duplicate flat and curved printing surfaces which shall be able to print exactly registering impressions, for use particularly upon cylinder presses having an auxiliary cylindrical printing surface such as set forth in my patent numbered 909,260, granted Jan. 12, 1909. The necessity for my process arises from the fact that when a backed electrotype shell is curved for use upon such a press, the printing surface is materially elongated, and hence will not register with the impressions made by the flat type matter. In my previous methods for correcting such distortion, disclosed in my patents numbered 909,832, 906,586 and 903,342, the electrotype shells are treated after their formation. In my present process, the treatment begins with the mold or matrix in which the shell is to be made.

Referring to the drawings forming part of this specification, Figure 1 is an edge view of a mold or matrix made in the usual way by forcing a printing surface into a sheet of wax or lead. Fig. 2 represents this matrix bent upon a curved surface. Fig. 3 shows the matrix in the operation of having a shell electroplated thereon. Fig. 4 is an edge view of the shell thus made, after it has been flattened and backed up to fit it for use upon the flat bed of a cylinder press.

In Fig. 1, the reference numeral 1 designates a mold or matrix of wax, lead, papier mâché or other material, into the surface of which a printing surface has been forced in the usual manner, and an obverse impression or mold 2 formed therein. This matrix is then laid upon a curved surface of proper radius, with its face 2 outward, and bent to conform thereto. This of course elongates

the said face, and shortens the inner surface of the mold; the amount of such elongation being determined by the thickness of the mold and the curvature of the surface 3, but such amount being arranged to exactly equal the elongation which is given to the backed electrotype plate when it is bent in the usual way to fit the cylinder upon which it is to be used. This curved mold is then submerged in an electrotyping bath 4, indicated in Fig. 3, and a shell electroplated thereon in the customary manner. The mold being then removed and this shell stripped therefrom, such shell 5 is flattened by laying on a plane surface, and giving a backing 6 in the regular way. As this shell retains the elongation given to the mold-surface 2, it will register with the distorted electrotype plate curved for the press cylinder in the ordinary manner. This manner consists in making a mold from the original flat printing surface in the same way as above described; then taking an electrotype shell from said mold; backing up said shell, and finally curving said backed shell to fit the cylinder; such curving being done with the shell outward. What I claim as my invention and for which I desire Letters Patent is as follows, to wit:—

The herein described method of producing electrotype plates which register with each other, the same consisting in making a mold from an original flat plate, taking an electrotype shell from said mold, backing it up and then curving it to fit the cylinder for which it is desired, taking a mold from said original plate and curving it, taking an electrotype shell from the last-named mold, removing such shell and flattening it, and then backing it up flat, whereby said curved electrotype and said flat electrotype shall mutually register.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 28th day of January, 1908.

BURT F. UPHAM.

Witnesses:

A. B. UPHAM,
M. C. GATES.