P. M. FURLONG.

PLATE HOLDER FOR USE IN BENDING ELECTROTYPE PLATES.

APPLICATION FILED JAN. 14, 1909. RENEWED FEB. 4, 1910.

956,521. Patented May 3, 1910.

Fig. 1

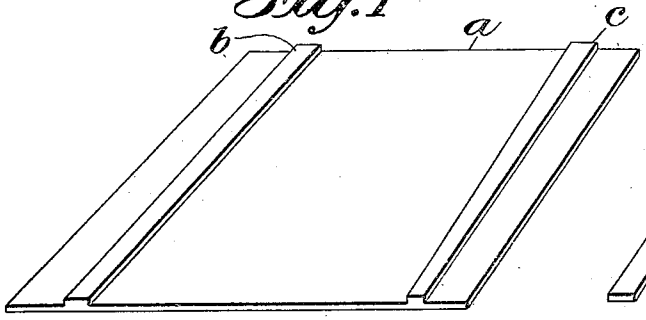


Fig. 2

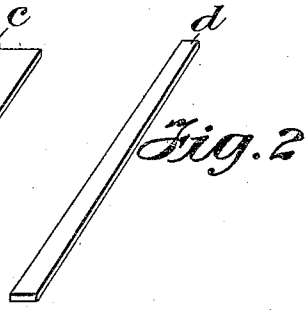


Fig. 4

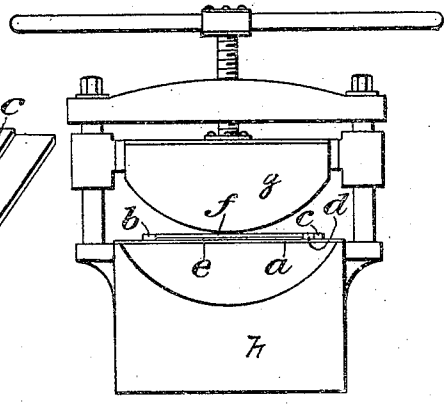


Fig. 3

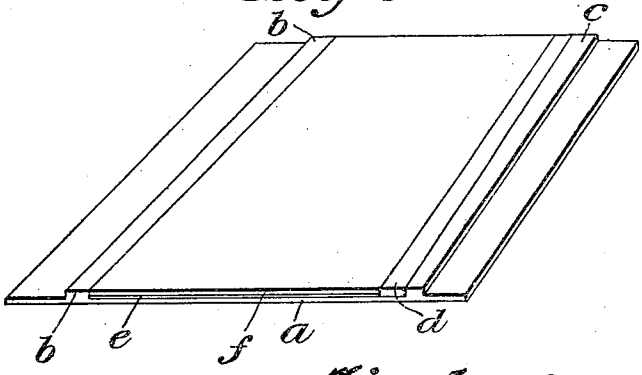


Fig. 5

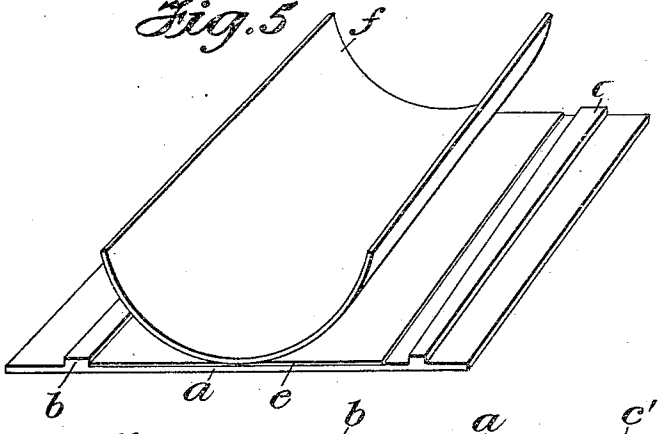
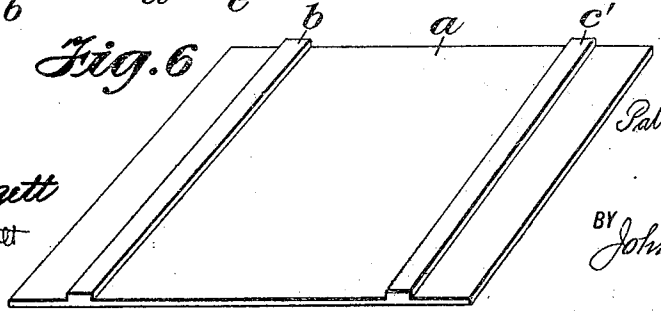


Fig. 6



WITNESSES

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PLATE-HOLDER FOR USE IN BENDING ELECTROTYPE-PLATES.

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Application filed January 14, 1909, Serial No. 472,209. Renewed February 4, 1910. Serial No. 542,071.

To all whom it may concern:

Be it known that I, PATRICK M. FURLONG, of the city of New York, county of Kings, and State of New York, have invented a new Plate-Holder for Use in Bending Electrotype-Plates; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to use the same, reference being had to the accompanying drawings, forming part of this application.

An obstacle to the successful and economical use of two-color printing-presses in printing from both flat and curved electrotype and other printing plates on the same job, has been the necessity for bending the plates twice, melting away the backing between each bend, and rebacking with metal. This is made necessary by the fact that when an electrotype or other printing plate is curved for printing on a press cylinder, the process of curving stretches the plate so that it is longer on the printing face when curved than when flat; and in consequence the impression from such curved plate does not register with the impression from flat plates of the same work. The same difficulty obtains when separate parts of a work are printed on cylinders of different diameters. That is, the plates receiving the closer curve are stretched longer than those receiving the more open curve.

In this present application I describe an appliance for use in bending or curving electrotypes and other printing plates, which prevents the stretching of the plates while being bent or curved, thus producing bent or curved plates having the length of the printing face the same as that of flat plates of the same job or work, and giving an impression in register with the impression from the flat plates.

Figure 1 is a perspective view of the plate-holder. Fig. 2 is a perspective view of a removable wedge-shaped member. Fig. 3 is a perspective view of the plate-holder with the flat electric plate secured thereon. Fig. 4 is an end elevation of a form of press for giving the curvature to the plate. Fig. 5 is a perspective view of the completed plate after being operated upon by the dies of the press. Fig. 6 is a perspective view of an alternate form of plate-holder.

In the accompanying drawings: Fig. 1 represents a perspective view of a plate-holder, *a*, consisting of a flat plate of resilient material, preferably steel, having guides or cleats *b*, and *c*, disposed upon its surface at a distance apart to conveniently receive an electrotype plate between them with some space at one end. Guide or cleat *c* is wider at one end than the other, and is wedge-shaped.

Fig. 2 is a perspective view of a wedge-shaped member or elongated piece of material, flat, and having one end wider than the other.

Fig. 3 is a perspective view of the plate-holder *a*, with a flat electrotype plate *f*, laid flat upon the surface of the plate-holder *a*, between the cleats or guides *b* and *c*, and with a piece of card-board or paper, *e*, between the flat surfaces of the plate and plate-holder. The wedge-shaped member *d* is shown in position between one end of the electrotype plate *f*, and the fixed guide or cleat *c*.

Fig. 4 is an end view of an ordinary press having a convex die *g* arranged to fit firmly into a concave die *h*. The plate-holder *a*, with the electrotype plate *f* lying flat upon the card board *e*, is shown between the dies *g* and *h*, in position for pressing.

Fig. 5 is a perspective view of the plate *f* in its curved condition after receiving the impress of the dies in the press. The plate-holder *a* and card board *e* are shown returned to their original flat condition through their resiliency.

Fig. 6 is a perspective view of an alternate form of my invention showing a plate-holder having the guides or cleats stationary in all their parts, and lacking the wedge-shaped member *d*. This form can be used where a large number of plates of even length are to be used. The manner of use is the same as above described except for the use of the wedge *d*.

In speaking of the printing surfaces of a flat plate and a curved plate produced by the use of my plate-holder being the same in length, I desire to include this sameness of length in curved plates of differing degrees of curvature, above referred to, when my improved plate-holder is used.

The use of a plate-holder of resilient material on the side of an electrotype plate, with a buffer of card-board or paper between the plate and the plate-holder, during the process of bending, is now in common use in the art as here shown; as is also the use of a press with convex and concave dies,

or a concave die and rollers, to bend or curve the plate, and I do not claim any of these as new.

What I claim as new is:

In a device for the purpose described, a plate-holder consisting of a flat sheet of resilient material having rigid therewith near each edge guides or cleats, and independent adjustable wedge-shaped members engageable with said cleats or guides and with the opposite edges of an interposed electrotype plate for holding said plate firmly between the guides or cleats with the confined edges parallel to the axis of the bend and thus preventing the stretching of said electrotype plate while being bent or curved.

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