

G. H. LUND.
METHOD OF PREPARING PLATES FOR PRINTING.
APPLICATION FILED OCT. 17, 1910.

1,015,900.

Patented Jan. 30, 1912.

Fig. 1

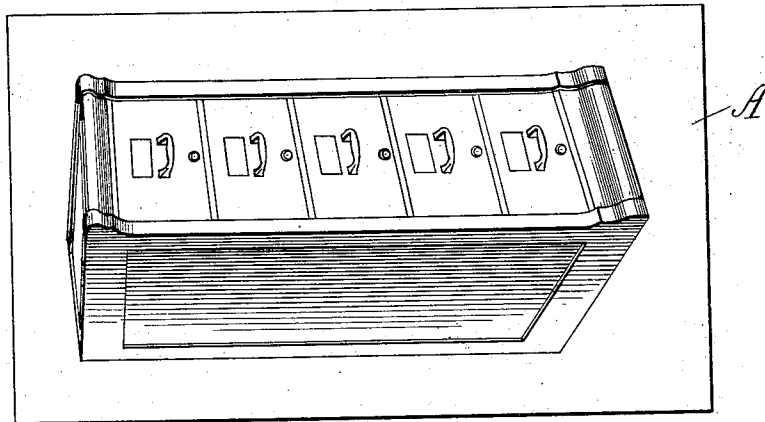


Fig. 3

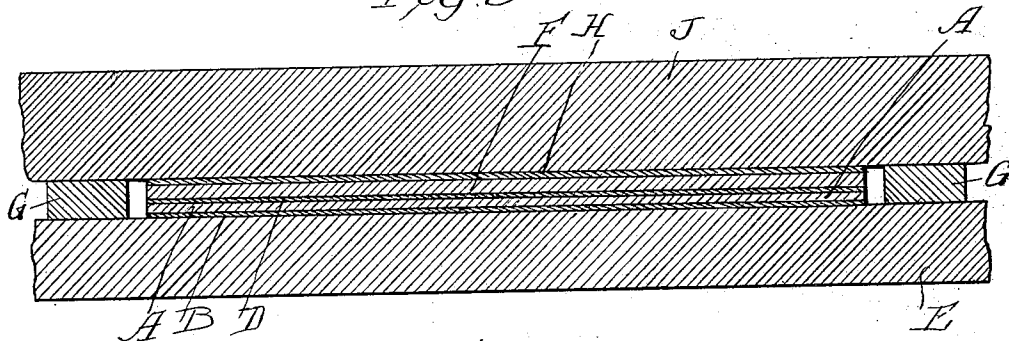
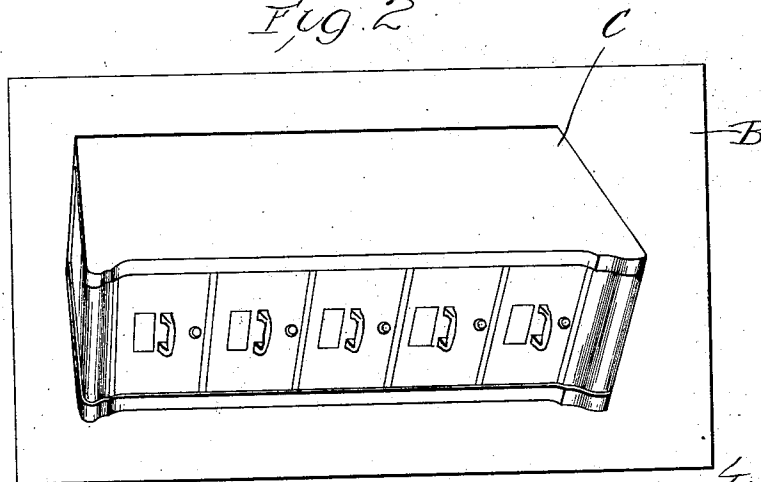


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

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METHOD OF PREPARING PLATES FOR PRINTING.

1,015,900.

Specification of Letters Patent.

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Application filed October 17, 1910. Serial No. 587,604.

To all whom it may concern:

Be it known that I, GEORGE H. LUND, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Preparing Plates for Printing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel method of preparing plates for printing therefrom, the object being to provide a method whereby the heavier portions of the illustration produced in negative on the plate are thrown outwardly relatively to those parts of the illustration which are to be printed more lightly so as to subject such darker parts to greater pressure from the inking rolls and sheet carrier than the lighter parts. The methods ordinarily employed for preparing plates for printing are usually known as the "make ready".

The invention consists in the novel steps hereinafter fully described and claimed.

In the accompanying drawings illustrating this invention: Figure —1— is a view of a plate containing an illustration in negative etched or otherwise produced thereon. Fig. —2— shows a sheet of paper having an impression printed thereon from said plate and from which the darkest portion of the picture has been cut preparatory to its employment for the "make ready" purposes. Fig. —3— is a fragmentary detail sectional view illustrating the relative positions of the sheet, plate and other appliances and substances used in carrying out my method.

The so-called "make ready" differs according to the nature of the work. In connection with half-tone plates it consists in raising the portion or portions of the plate from which the darkest portion or portions of the picture are to be printed so as to subject the same to greater pressure during the printing operation than the lighter portions of the picture and likewise to cause the inking rolls to press more strongly thereon to insure the deposit of sufficient ink to produce the requisite darkness or depth in the print or impression made from such plate. The "make ready" is carried out in numerous ways and with varying degrees of success. In addition to raising the said por-

tions of the plates from which the darkest impressions are to be made, the make-ready includes the building up of a support for the plate on the bed of the press so as to throw the printing face of the said plate into the requisite plane and register relatively to the sheet carrier (such as the cylinder) to insure proper contact of every part of the face of the plate with the sheet.

My invention combines the operation of distorting the plate to raise the darker printing portions, with the formation upon the back of the plate of a base of exactly the requisite thickness to properly elevate the printing face of the plate above the bed of the press to bring it into printing plane.

In carrying out my method I follow the usual step of first printing an impression from the plate A upon a sheet B of paper, the latter being preferably of a relatively soft and yielding nature as opposed to a very hard calendered stock. After the impression has been made upon the sheet B, I cut from the latter those portions of the illustration which are, or are intended to be, most heavily printed thus providing a hole or holes C therein. The sheet B is then replaced to oppose the printing face of the plate A in the position which it previously occupied so that the hole or holes C cut therein will oppose the darkest printing portions of said printing face. Previously to replacing the said sheet B the back of the plate A is built up with a thick layer F of a very compact tacky composition, which possesses an inelastic and incompressible characteristic when set, such for example as litharge and glue. It is essential that the composition should adhere very firmly to the plate and unless the composition is of the requisite adhesive nature the back of the plate A should be primarily coated with glue and a sheet D of tissue paper applied upon the coated surface, the composition being applied upon the tissue paper. A sheet of paper is then placed over the composition. It is preferable to heat the plate A before applying the aforesaid composition and for this purpose the same is preferably supported upon an electrically heated plate E. The said plate E may be laid upon the bed plate of a press of any suitable kind such as a proof press if the composition employed is of a nature which sets more rapidly under the influence of heat. The plate A with its coating is then placed in

the press, the sheet B being disposed to oppose the printing face of said plate. Gage sticks G of steel or other very hard material, the thickness of which corresponds exactly with the distance between the bed of the press and the printing plane thereof, are laid opposite the side edges of the plate A upon the surface supporting the same, which, in the instance illustrated is the plate E. The press is then operated to force the presser plate J of the same down upon the sheet B covering the printing face of the plate A or upon the sheet H of paper covering the composition F and the latter is then compressed against the back of the plate A from which printing is to be done.

It is preferable to render the sheet H acid and water proof so that in the event that it should become necessary to further etch the plate after the same has been prepared for printing the same with the underlay may be immersed in etching liquid. The sheet H may be rendered water and acid proof by coating the same with asphaltum. The presser plate J continues its downward movement until it strikes the gage sticks G on opposite sides of the plate A being operated upon and is maintained in said position while said composition hardens rapidly which in this instance is accelerated under the influence of the heat from said electrically heated plate. It is essential that the composition should resist compression and displacement to a great degree and this is readily effected by making said composition relatively very thick and compact so that it is not fluent.

The pressure exerted upon the composition is transmitted thereby to the plate A and causes the latter to yield at all points at which it is not firmly supported which would, of course, be at those points which oppose holes C in the paper sheet B opposing the printing face of said plate A. The glue, if primarily applied to the back of the plate, permeates the tissue paper D and serves to cause the composition to adhere very firmly to said plate. The latter when dry will, of course, maintain the plate permanently in its distorted condition and, by reason of the limitation of compression effected by means of the presser plate J and gage sticks G, the thickness of the plate A with its backing will be identical with the thickness of the gage sticks and of exactly the proper height to elevate the printing surface of the plate a proper distance above the bed plate of the press to produce the desired impression in the most effectual manner. The displaced composition is very readily cut and scraped away flush with the edges of the plate A.

The plate thus made ready will continue

to produce proper impressions during its entire life; the composition becoming extremely hard and being capable of successfully resisting the pressure applied thereto during the printing operations.

I claim as my invention:

1. The method of preparing plates for printing which consists in supporting said plate face downward on a recessed surface, applying a coating of adhesive material to the back of said plate, then applying a thick coating of a plastic, rapidly hardening material upon the adhesive surface, overlaying said last-named coating with a sheet of paper, and then applying pressure upon said sheet to compress said plastic coating, and maintaining said pressure until said material has become set.

2. The method of preparing plates for printing which consists in supporting said plate face downward upon an irregular supporting surface, applying an adhesive coating to the back of said plate, disposing gages adjacent said plate, applying a coating of a plastic, rapidly hardening material of greater depth than said gages upon the adhesive coated surface, then compressing said coating to a depth equal to said gages, and maintaining said pressure until said coating has become set.

3. A method of preparing plates for printing consisting in placing the printing face of the plate against an apertured surface with those portions of said printing face opposing the apertures in said surface which are to be raised relatively to other portions of said printing face, then disposing upon and securing to the back of the plate a rapidly hardening plastic composition possessing an inelastic and incompressible characteristic when set, then subjecting the composition while plastic to pressure to distort the plate by forcing those portions of the plate which oppose the apertures of said surface into said apertures and simultaneously limiting the compression of the composition to a predetermined thickness to constitute a support for maintaining the printing face of the plate in proper printing plane, and maintaining said pressure upon the composition until the composition sets whereby the plate will be held permanently distorted by the inelastic and incompressible character of the composition when the pressure is removed.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

GEORGE H. LUND.

Witnesses:

M. M. BOYLE,
H. L. HALE.