(No Model.)

C. H. HANSEN.

PLATE FOR PRINTING.

No. 250,238. Patented Nov. 29, 1881.

Fig. 1.

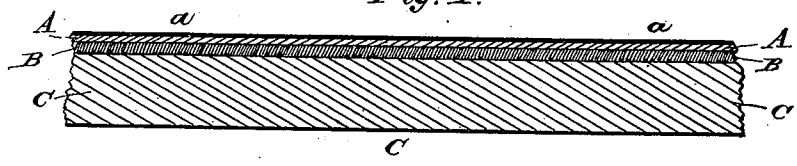


Fig. 2.

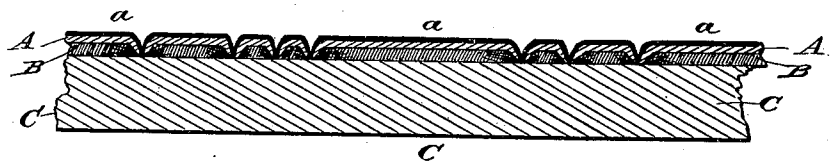


Fig. 3.

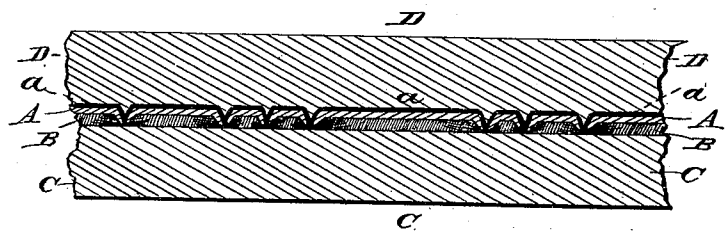
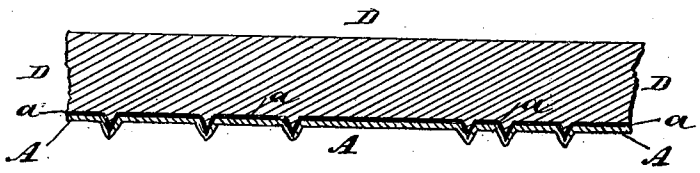


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHRISTIAN H. HANSEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

PLATE FOR PRINTING.

SPECIFICATION forming part of Letters Patent No. 250,238, dated November 29, 1881.

Application filed September 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN H. HANSEN, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Relief Blocks or Plates for Printing; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to an improved method or process of producing relief blocks or plates for printing; and it consists in certain improvements upon the process described and claimed in an application for Letters Patent filed by me on the 13th day of November, 1880, and allowed on the 16th day of August, 1881, my said improvements, as hereinafter described, having for their object to simplify and reduce the expense of the process, as well as the saving of time and labor.

In the annexed drawings, Figure 1 represents a sectional view of the bed or base plate, with its foil and intervening layer of plastic material, ready for the application of the stylus or other engraving-tool. Fig. 2 is a similar view, showing the indentations formed in the foil in preparing the engraving. Fig. 3 represents a section of the bed-plate, with its indented foil, after the type-metal backing has been cast upon the foil, and Fig. 4 is a sectional view of the complete block, ready for printing.

Similar letters of reference indicate corresponding parts in all the figures.

To carry out my process, I first provide a bed or base plate of steel or other suitable material that will resist heat, the top of which should be polished smooth and placed in a perfectly level position. This base-plate is shown at C in the drawings. Next, I provide plate C with a coating of plastic material which will resist heat—such as slaked lime, kaolin, tripoli, powdered cuttle-fish bone, or other suitable material, which, when mixed with a suitable quantity of water, will form a plastic composition which may be spread evenly upon the top of the plate to form a coating of uniform thickness, as shown at B—and which will not melt or "run" by the application of heat. The next step is to carefully cover the coating B with a layer of any suitable foil which will not melt at the point of temperature where type-metal melts. I have found that thin copper-foil is well adapted for this purpose, and this should be provided with a thin film or coating of tin or solder, as shown at *a*, the letter A representing the copper-foil. As thus prepared, the base-plate is ready to receive the engraving by indenting the foil *a* A, down through the layer, B, of plastic material, to the base C, by means of a stylus or other suitable instrument, according to the figure, sketch, or lettering which it is desired to represent in the engraving. The plastic layer B operates to give depth and tone to the lines, which may be made fine or coarse by using different kinds of tools; and it will readily be seen that as the engraver has soft and yielding material to work in, the engraving, or rather indentation, may be executed with great rapidity. If desired, the sketch, figure, or lettering to be reproduced may be transferred upon the foil-plate by photography, or other suitable means of transfer, to aid the operator in the execution of his work. The plate having been prepared in this manner, the thin film or coating *a* of the foil A is carefully moistened with muriatic acid, or other suitable acid, to prepare it to receive and firmly adhere to the type-metal backing. The plate is placed in a suitable frame, after which a suitable quantity of molten type-metal is poured over the foil to form a plate or backing of the desired thickness, as shown at D in Figs. 3 and 4. The type-metal, as it flows freely over the foil film *a*, unites therewith without disturbing in the least the underlying foil A or coating B, and after hardening, the plate or relief block D *a* A thus formed is removed from the coated base-plate C and ready for use after washing its face to remove any trace of the coating material and suitably finishing the back.

Inasmuch as the object of the foil film *a* is simply to cause the type-metal D to adhere to the indented foil A, it is obvious that said film may be applied to the foil at any stage of the process prior to the pouring of the molten type-metal upon the foil, and in any suitable manner; but on account of the simplicity attend-

ing its manufacture and use I prefer to employ copper-foil which is provided with a thin film of tin or solder metal on one side.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The method of forming relief blocks or plates for printing, which consists in, first, applying to a bed a layer of a yielding plastic material capable of resisting heat, and upon this a foil capable of resisting the heat at which type-metal melts, and provided with a thin film of tin or solder metal on its upper or exposed side; next, indenting by suitable means the foil through the layer of plastic material to the bed or base plate; next, preparing the indented foil film to adapt it to unite with molten type-metal, and then backing the foil by pouring a suitable quantity of molten type-metal over it, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

CHRISTIAN H. HANSEN.

Witnesses:
LOUIS BAGGER,
GEORGE J. NASH.