No. 881,554. PATENTED MAR. 10, 1908.

S. O. COWPER-COLES.

PRODUCTION OF ELECTROTYPES.

APPLICATION FILED FEB. 25, 1907.

Fig. 1.

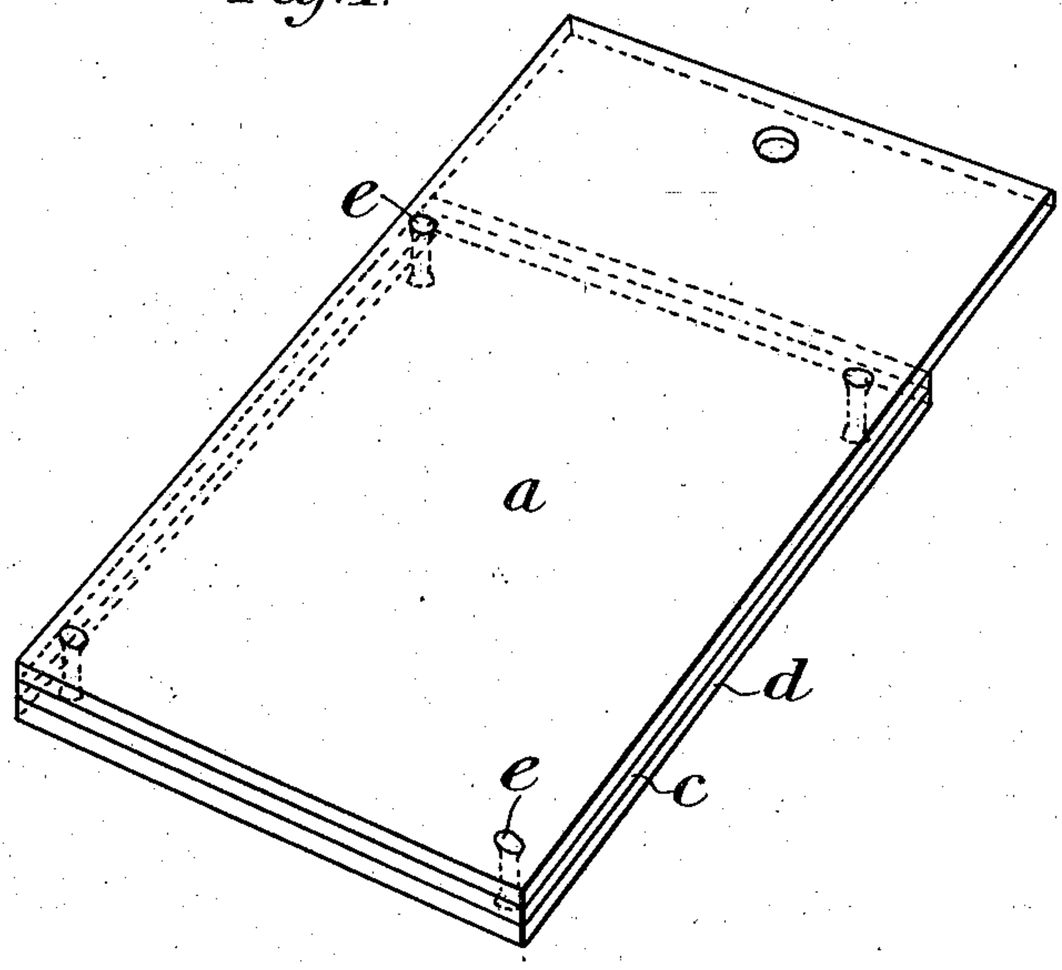
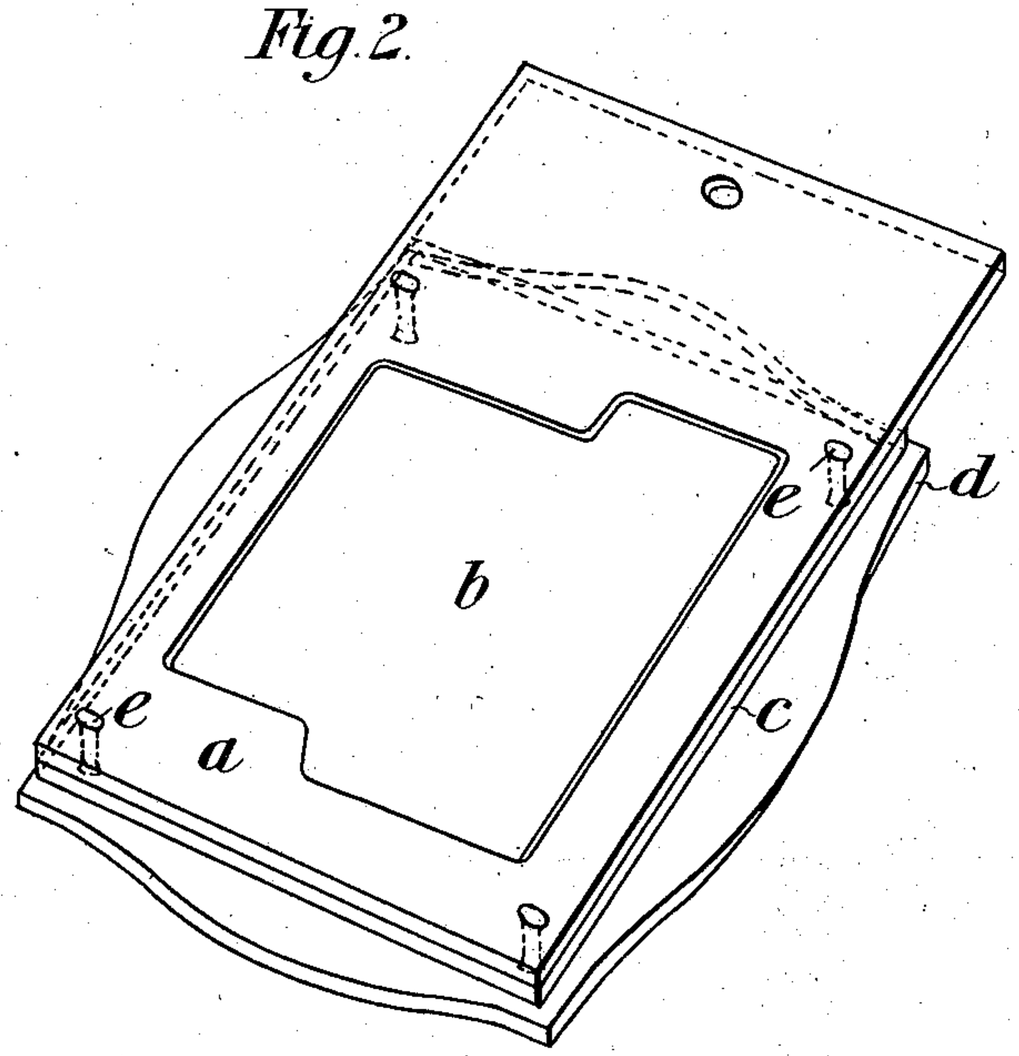


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

SHERARD OSBORN COWPER-COLES, OF LONDON, ENGLAND.

PRODUCTION OF ELECTROTYPES.

No. 881,554. Specification of Letters Patent. Patented March 10, 1908.

Application filed February 25, 1907. Serial No. 359,298.

To all whom it may concern:

Be it known that I, SHERARD OSBORN COWPER-COLES, a subject of the King of Great Britain, residing at Grosvenor Mansions, Victoria street, Westminster, London, England, have invented new and useful Improvements in the Production of Electrotypes; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the production of electrotypes for the manufacture of plates for printing purposes.

It has heretofore been the general practice, when it is desired to produce or reproduce an engraved copper plate, to make a wax mold or impression of the original plate and to then render the surface of the mold or impression capable of conducting electricity by coating it with bronze powder or plumbago, copper being subsequently electro-deposited upon this prepared surface until the desired thickness of deposit is obtained. This process possesses the disadvantage of being comparatively slow and tedious and, owing to the low electrical conductivity of the surface upon which the deposit is made, a considerable time is occupied by the copper in spreading over the whole of the surface, this being the case even when auxiliary means are employed for accelerating the first covering of the mold, such for example as brushing the surface over with finely divided iron which becomes coated with copper when immersed in a suitable copper solution. It has also been proposed to make molds or matrices by impressing the original block into soft metal, such as lead, this being effected by pressing a lead sheet on to the block from which the impression is to be made through the medium of a grooved iron plate, a sheet of soft or elastic rubber being introduced between the grooved iron plate and the lead sheet.

Now, my invention has for its object to improve the existing processes and to this end I make use of a lead sheet with the soft or elastic backing as above described and I place upon the said soft or elastic backing a second piece of lead, the whole being held together by means of lead rivets. The block or surface to be reproduced and the prepared lead are then subjected to considerable pressure, such for example, as that obtained by means of a hydraulic press and a sharp impression of the block is obtained upon the lead surfaces.

The lead sheet with the impression upon it is placed directly into the depositing cell and copper deposited at a high current density thus enabling a shell of the usual thickness employed for printing purposes to be deposited in a few minutes. I have found that by proceeding in this way I am enabled to obtain a half-tone block with the greatest nicety and such that it cannot be distinguished from the original.

Any suitable depositing apparatus may be employed such, for example, as those described in the specifications of my former English patents Nos. 13012/04, 15762/06 and 4668/05.

To enable the invention to be fully understood I will describe it by reference to the accompanying drawing in which

Figure 1 is a perspective view of a lead plate prepared in accordance with the invention. Fig. 2 is a similar view to Fig. 1 showing an impression by the block to be reproduced and also showing the second backing, extended beyond the edges of the elastic backing.

a is the lead sheet or plate which is impressed by the block to be reproduced, for instance as shown at *b* in Fig. 2, and *c* is the soft or elastic backing placed behind the plate *a*. *d* is the second piece of lead placed in contact with the elastic backing *c* and *e e* are the rivets for holding the said parts *a*, *c* and *d* together.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A matrix comprising a lead sheet, an intermediate layer of elastic material and a backing of soft material, substantially as described.

2. A matrix comprising a sheet of lead provided with a backing of elastic material, and a second sheet of lead placed on the elastic backing, substantially as described.

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Witnesses:

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