

UNITED STATES PATENT OFFICE.

JOHN GASKIN WOOD, OF EDINBURGH, SCOTLAND.

PREPARATION OF PHOTOMECHANICAL PRINTING-SURFACES.

1,155,186.

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No Drawing.

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To all whom it may concern:

Be it known that I, JOHN GASKIN WOOD, a subject of the King of the United Kingdom of Great Britain and Ireland, and resident of 10 St. Bernard's Row, Edinburgh, Scotland, photolitho artist, have invented certain new and useful Improvements in and Relating to the Preparation of Photomechanical Printing-Surfaces, of which the following is a specification.

This invention relates to a process for the preparation of photomechanical printing surfaces, in which a grained or sand blasted plate or stone is used.

In accordance with this invention a zinc or aluminium plate or a stone has the surface thereof suitably sand-blasted or grained and the printing surface thus produced is then coated in the usual manner with any of the usual sensitizing solutions such for example as bichromate of ammonia, albumen and water, or bichromate and fish glue, such solution being preferably applied exactly as in the production of a line print. The sensitizing solution is then allowed to dry and the plate or stone is thereafter coated with a thin level coating of any suitable acid resisting transfer ink such for example as an etching ink, photo-transfer ink or other acid resisting medium, by means of a printer's "composition roller." In thus coating the plate or stone the hollows or recesses of the grain as well as the "tops" or raised parts will be coated; that is to say the surface of the plate or stone will be coated all over, and the coating applied by the roller to the "tops" or raised parts of the grain will be slightly thicker than that applied to the hollows, owing to the fact that the "tops" receive a greater pressure from the roller and consequently receive more of the medium carried by the roller. The picture may now be printed on to the hollows or recesses of the plate or stone from an ordinary continuous tone photographic negative and, as the light passes through the more or less transparent portions of the negative which correspond to the shadows of the picture, it first acts on the hollows of the grain where the plate is more thinly coated, thereafter acting through the different portions of the negative of varying densities until all the details of the picture have been printed in the hollows of the plate or stone, and the

"tops" of the grain are acted on only at those portions of the picture representing the deepest shadows.

When all parts of the picture, with the exception of the pure high lights, have been printed on the plate or stone the latter is ready for developing and this may be effected by immersing in water and thereafter wiping away everything which has not been fixed by the action of the light passing through the negative. The plate or stone may be then slightly etched and is afterward gummed and otherwise treated as an ordinary lithographic plate or stone.

The hollows or recesses of the plate or stone are thus utilized to produce the grain of the picture itself and the sand-blasting or graining may be fine, medium, coarse or very coarse to suit the different classes of work.

Claims:

1. The process for the preparation of photo-mechanical printing surfaces, which consists in coating a grained surface with a sensitizing material and then with a transfer material, and thereafter exposing the surface to the actinizing effect of light corresponding to the picture to be produced and developing.

2. The process for the preparation of photo-mechanical printing surfaces, which consists in treating a sand-blasted or grained surface of a plate or stone, first with a sensitizing material and then with a transfer medium applied to both the hollows or recesses of the grain and the tops or raised parts thereof, but applying said coating more thickly to said tops or raised parts than to the hollows, then actinizing the sensitized plate thus prepared, by a light transmitted through a negative, and then developing the plate thus exposed, substantially as described.

3. The process for the preparation of photo-mechanical printing surfaces, which consists in treating a sand-blasted or grained plate or stone, first with a coating of sensitizing solution and then with a coating of transfer ink applied to the surface of the plate through the medium of pressure exerted upon the hollows or recesses of the grain, as well as upon the tops or raised parts thereof, and in a manner to develop a thicker coating upon the raised parts than

upon the hollows, then printing by transmitted light, through an ordinary continuous tone photographic negative, onto the hollows or recesses of the plate or stone, and thereafter developing the surface thus prepared and actinized, substantially as described.

4. The process for the preparation of photo-mechanical printing surfaces, which consists in coating a grained surface with a sensitizing material and then with an acid resisting material, and thereafter exposing the surface to the actinizing effect of light corresponding to the picture to be produced and after developing, lasting etching the surface in usual manner.

5. The process for the preparation of photo-mechanical printing surfaces, which consists in treating a sand-blasted or grained surface of a plate or stone, first with a sensitizing material and then with an acid-resisting medium applied to both the hollows or recesses of the grain and the tops or raised parts thereof, but applying said coating more thickly to said tops or raised parts than to the hollows, then actinizing the sensitized plate thus prepared, by a light transmitted through a negative, and then de-

veloping the plate thus exposed, and finally etching it in usual manner.

6. The process for the preparation of photo-mechanical printing surfaces, which consists in treating a sand-blasted or grained plate or stone, first with a coating of sensitized solution and then with a coating of acid-resisting transfer ink applied to the surface of the plate through the medium of pressure exerted upon the hollows or recesses of the grain, as well as upon the tops or raised parts thereof, and in a manner to develop a thicker coating upon the raised parts than upon the hollows, then printing by transmitted light, through an ordinary continuous tone photographic negative, onto the hollows or recesses of the plate or stone, and thereafter developing the surface thus prepared and actinized, and finally treating the plate with an acid for etching and gumming it as an ordinary lithographic plate or stone.

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Witnesses:

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