

# UNITED STATES PATENT OFFICE.

WALTER B. WOODBURY, OF CLIFF HOUSE, GREENHITHE, ENGLAND.

IMPROVEMENT IN PRODUCING PICTURES FROM PHOTOGRAPHIC AND OTHER NEGATIVES.

Specification forming part of Letters Patent No. 126,861, dated May 14, 1872.

Specification describing an Improvement in the Production of Pictures from Photographic and other Negatives, invented by WALTER B. WOODBURY, of Cliff House, Greenhithe, Kent, England, and which was patented in the Kingdom of Great Britain and Ireland, the date of publishing of the complete specification being March 11, 1871.

*Improvement in the Production of Pictures from Photographic and other Negatives.*

My invention has for its object the production, by printing, of imitations of mezzotint engravings from photographic negatives in such a manner that all the delicate gradations of shade on the negative may be reproduced on the picture.

In carrying out my invention I first prepare a thin sheet or film of bichromatized gelatine, with which has been intimately mixed finely-ground charcoal or other suitable granular material. When this sheet is dry it is exposed to light under a photographic negative until it is rendered more or less insoluble in different parts, in accordance with the exposure to light permitted by the lights and shades of the negative, the sheet being most insoluble in those parts immediately beneath the lightest parts of the negative, and most soluble in those parts beneath the darkest parts of the negative. After this treatment of the sheet it is attached to a plate of zinc or nickel-plated iron or steel and then washed in water, by which the more soluble portions of gelatine are removed, the result of the washing being a relief with a granular surface and the grains being more aggregated at the prominent portions of the relief. When this relief of bichromatized gelatine is dry I place it on the smooth face of a plate of soft metal, (lead or an alloy of lead and antimony being suitable for the purpose,) and the two are passed between rolls or otherwise pressed together, the result being a granular impression in the soft metal, and this impression constitutes the ink-holding ground, similar to that of an engraved plate. One or two impressions may be obtained from this plate, which, however, is too

soft for long-continued printing. I therefore take an electrotpe from this plate, and from this electrotpe take a second, from which impressions may be made on paper by the ordinary process of copper-plate printing, the first electrotpe being laid on one side for subsequent use, as the original from which further electrotypes for printing with may be made from time to time.

The electrotpe may be steel-faced when it is desirable to obtain a large number of pictures.

In printing with the stereotype-plate the most delicate gradations of shade on the original negative are reproduced on the paper with a mezzotint-like effect.

Many different granular substances may be mixed with the bichromatized gelatine; such, for instance, as emery, sand, charcoal, &c., the coarseness or fineness of the grains to be employed being determined by the character of the picture to be produced.

Pictures may be produced from etched negatives in the same manner and with the same facility as from photographic negatives.

I claim as my invention—

1. The employment, substantially as described, with bichromatized gelatine, of granular substances in the production of printing-plates.

2. Producing a printing-plate with a granular ink-holding surface by electrotyping an impression made from bichromatized gelatine mixed with granular material.

3. The production of pictures from photographic negatives by the process described.

4. A printing-plate having a granular ink-holding surface, produced substantially in the manner set forth.

5. Printed copies of photographic and other negatives produced in the manner described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER B. WOODBURY.

Witnesses:

WM. A. STEEL,  
HARRY SMITH.