UNITED STATES PATENT OFFICE.

WILLIAM AUGUSTUS LEGGO, OF MONTREAL, QUEBEC, CANADA.

IMPROVEMENT IN LEGGOTYPING.

Specification forming part of Letters Patent No. **112,933,** dated March 21, 1871.

To all whom it may concern:

Be it known that I, WILLIAM AUGUSTUS LEGGO, of the city of Montreal, in the district of Montreal, in the Province of Quebec, Canada, gentleman, have invented certain new and useful Improvements on the art known as "Leggotyping," and on the manufacture of Stopping-Out Plates used therefor, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same as regards their manipulation and operation.

It may be well here to remark that Letters Patent have already been granted for the art called "Leggotyping," and it is only the improvements hereinafter described, in so far as they differ from the previously-patented invention, for which Letters Patent are now sought, together with the manufacture of a stopping-out plate used therefor, and which will also be found useful in photographing generally and many other purposes, for all of which I claim it.

After the photograph has been varnished and dried as in the previous invention, it is rubbed carefully with a piece of fine cotton, wool, or other suitable substance, giving it a fine polish or gloss. It is now ready for receiving the sensitive gelatine coating applied cold. The exposure to light is now made, this, together with the application of the gelatine coating, being performed in the same manner as in the previous invention, and washed, as therein stated, first in hot and then in cold water. I now soak it a short time in a saturated solution of hyposulphite of soda, or its equivalent, for the purpose of removing a certain softness that exists in the jelly-mold and making it sharp.

The soda is now thoroughly removed by washing in cold water. If no further deepening is required, it may be now soaked in a solution of protosulphate of iron, or its equivalent, to prevent adhesion between the gelatine portions of the picture and the plaster cast. This in its turn is removed by washing again in cold water. The plaster cast is now taken in the manner described in the previous invention.

It is very seldom indeed, however, that this first treatment in the above manner gives all the depth required; but any further amount of depth neccessary may be got by further applications of sensitive jelly with exposures to light, &c., operated as follows: After the plate has been, as before described, treated with the first application of gelatine, exposure to light, and washings in water, soda, and water again, it is soaked for a short time in diluted nitric acid or its equivalent, this having the effect of removing the yellow color of the mold, making it transparent, and allowing the rays of light to reach freely and act upon the second coating. This acid is in turn removed by again washing with cold water. All superfluous moisture is now removed from the surface of the mold by blotting-paper, or in any other suitable manner.

A second application of a sensitized compound, (bichromate of potash, one part; gelatine, eight parts; water eighty parts,) or its equivalent, may now be made and treated as in the first instance, with the difference only that in this case it is applied warm.

A third application of jelly may be made in the same manner should the requisite depth not have been attained; but this will very rarely be required.

In exposing these further applications of the sensitive coating to the action of light, stopping-out plates are of the greatest importance. The manner in which I make them is as follows: From the positive photograph intended to be leggotyped a negative is made by placing in a dark room, the positive in front of a sensitive collodion-plate, in such a position that the rays of light admitted through any aperture must pass through the positive before striking the sensitive collodion-plate. The two films being opposed to each other, light is admitted and an exposure (preferably short) given. This resulting negative is used in exactly the same manner with a second sensitive collodion film and a full exposure given. The second plate or stopping-out plate (to which we will give the name of "Leggo's Stopping-out Plates," to distinguish it from other plates used for the same purpose) is a soft blurred-looking copy of the original, and it is utilized by placing it over the jellied positive during exposure to prevent the light from acting too strongly upon the design itself, or certain portions of it, as desired, while other portions of it are being acted forcibly upon.

Stopping-out plates of a different kind may

be sometimes used. They are made by hand, by painting or dabbing color or any substance upon glass to render it non-transparent; or any suitable dark or opaque substances, suitably arranged to stop out the light not required, may be used as stopping-out plates.

Having now described my invention and the manner of operating the same, what I claim as my invention, and wish secured by Letters Patent, is—

1. The operation in leggotyping of polishing the photograph, substantially in the manner and for the purpose described.

2. The use in leggotyping of hyposulphite of soda, or its equivalent, substantially in the manner and for the purpose described.

3. The use in leggotyping of protosulphate of iron, or its equivalent, substantially in the manner and for the purpose described.

4. The reapplication, or any number of applications other than the first, of a sensitive gelatinous compound and their corresponding exposures to the action of light, &c., with or without the aid of stopping-out plates, substantially in the manner and for the purpose described.

5. The construction and operation of Leggo's stopping-out plates, substantially in the manner and for the purpose described.

6. The use in leggotyping of stopping-out plates of any kind.

Montreal, 14th day of February, A. D. 1871.

W. A. LEGGO.

Witnesses:
CHARLES G. C. SIMPSON,
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