

UNITED STATES PATENT OFFICE.

WM. A. LEGGO AND GEO. E. DESBARATS, OF QUEBEC, CANADA.

IMPROVEMENT IN PHOTO-ELECTROTYPE.

Specification forming part of Letters Patent No. 48,035, dated May 30, 1865.

To all whom it may concern:

Be it known that we, WILLIAM AUGUSTUS LEGGO and GEORGE EDWARD DESBARATS, of Quebec, Canada, engravers, lithographers, and electrotypists, have invented a new and useful art, which, consisting in new applications of known principles and agents, might be called "Photo-Electrotyping," but which, for the sake of brevity, we call "Leggotyping;" and we do hereby declare that the following is a full and exact description thereof.

This invention consists in an art or process by which, through a cheap, rapid, and accurate operation, a plate or type may be obtained of any print, drawing or manuscript, capable of yielding exact copies of the original, the size being retained, increased, or diminished at will, and its position reversed, if desired, by which plates or types may be produced of photographs from nature—by which, in short, a type or plate may be made of any subject imposed by photography or otherwise on any transparent medium.

The mode of proceeding is as follows: Take, for instance, a photograph on glass, varnish it, and allow it to dry. Lay it upon a level slab in a dark room and brush over it a substance which, upon exposure to the light, becomes insoluble in water, and, by pouring, increase the thickness of the coating to about one-thirty-second part of an inch, and let it stand until it be quite jellied. The sensitive substance which we use (others are known and may be substituted) is thus prepared: Dissolve five (5) ounces of bichromate of potash in twenty (20) ounces of warm water and six (6) ounces of the finest gelatine in eighty (80) ounces of warm water. Then mix the solutions thoroughly together. Preserve this compound in the dark in a glass bottle or jar, and when about to use, if jellied, dissolve by heating. Now expose the picture to the light, face downward, allowing it to remain as long as the subject requires—say from fifteen to forty-five minutes, fine work requiring less exposition

and coarse work more, as practice will soon show. Remove with warm water the still soluble parts of the jelly, allow the plate to cool gradually with the insoluble jelly adhering, taking care not to allow it to dry. Then take a cast from the mold thus made in plaster or other suitable material. From this plaster-cast a stereotype may be made in the ordinary way. To produce an electrotype from it, adopt the following method: Dip the cast into hot water to heat and moisten it thoroughly, and lay it face upward until all superfluous water disappears. Then, while still warm and damp, dip it edgewise into a vessel containing melted wax, merely hot enough to be quite liquid. After completely immersing the cast draw it out quickly, when it will be covered with a thin coating of wax. Repeat the dipping once or twice, allowing the wax to set each time. Then, having poured some hot wax upon a thin metal plate, lay the cast, now coated with wax, face downward in it, and allow all to cool. The wax upon the plate uniting with that upon the cast will form a solid mass, from which the plaster may be lifted away, leaving its exact impression in the wax, which, coated with plumbago, will, by the usual process, yield an electrotype, from which perfect copies of the original may be printed.

In a similar manner embossing-plates and various raised plates and ornamented designs may be produced at a trifling cost.

We claim as new and desire to secure by Letters Patent—

The within-described process of producing upon the surface of any transparent picture, drawing, or manuscript by the action of light a mold capable of yielding a cast in plaster or other suitable material, substantially in the manner and for the purposes herein set forth.

W. A. LEGGO.

GEORGE E. DESBARATS.

Witnesses:

JNO. S. BOWEN,

WM. H. LA ROCHE.