

UNITED STATES PATENT OFFICE.

ERNEST EDWARDS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO JAMES R. OSGOOD & CO., OF SAME PLACE.

IMPROVEMENT IN THE PROCESSES OF PRODUCING FAC-SIMILES OF DESIGNS AND PRINTING-MATRICES

Specification forming part of Letters Patent No. **150,946**, dated May 19, 1874; application filed January 31, 1874.

To all whom it may concern:

Be it known that I, ERNEST EDWARDS, resident in Boston, in the Commonwealth of Massachusetts, have invented Improvements in the Production of Fac-Similes of Designs, Drawings, Manuscripts, and other writings.

The following is a specification of my invention:

My invention consists in an improved method of producing fac-similes of designs, drawings, manuscripts, and other writings upon surfaces of gelatine or equivalent substances which may be used as printing-matrices.

It is well known that gelatine is ordinarily absorbent of water, but that it may be rendered non-absorbent by the action of certain substances—such, for instance, as alum, tannin, or other coagulating bodies. When it is thus rendered non-absorbent it will take greasy lithographic ink, and in this condition can be used as a printing-matrix.

The manner in which I practice my invention is as follows:

The design or writing to be reproduced is first made on the surface of ordinary paper, or other suitable substance, with an ink or fluid containing in admixture alum, tannin, or other bodies which render gelatine non-absorbent. A fluid suitable for this purpose may be made by mixing sixty grains of chrome alum with one ounce of water, but I do not confine myself to the use of this fluid, for various other solutions of bodies which render gelatine non-absorbent will serve equally well. Many ordinary writing-inks contain bodies which render gelatine non-absorbent, and can be used in the practice of my invention without further admixture. The surface of the paper or other substance, on which the design or writing is, is brought into contact with the surface of a sheet of gelatine prepared on or attached to a suitable support, either the gelatine or the paper having been first sufficiently moistened with water. Pressure is applied to transfer the design or writing to the surface of the gelatine sheet, which may be then used as a printing-matrix in the ordinary method employed in lithographic printing, or in the methods described in the letters patent granted to Ernest Edwards for "Improvements in Photo-Mechanical Printing," and "Improve-

ment in Printing-Forms," and numbered, respectively, 133,701 and 134,470. Instead of producing on paper or other equivalent substance the design or writing which is to be copied, such design or writing may be made with proper fluid directly on the surface of the gelatine, which is then fit to be used as a printing-matrix. Sometimes I add a chromate or bichromate to the ink or fluid with which the design is made. In this case it is necessary that the design, after transfer to the gelatine, should be exposed to the agency of light to produce the desired effect.

From plates of gelatine, treated as above described, transfers may be made, in any of the well-known methods, to stone or metal, which will thus serve as printing-matrices.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The above-described process of producing, on surfaces of gelatine or equivalent substances, fac-similes of designs, drawings, manuscripts, and other writings to serve as printing-matrices, by making such designs, drawings, manuscripts, or other writings with bodies which render gelatine non-absorbent of water, such as solutions of alum, tannin, or other coagulating bodies, as described in the specification, and then transferring them to such surfaces in the manner substantially as described.

2. The process described of making a printing-matrix of a gelatine surface or its equivalent, by producing directly upon such surface a design, drawing, manuscript, or other writing with bodies which render gelatine non-absorbent of water, such as solutions of alum, tannin, or other coagulating bodies, as mentioned in the specification, substantially as described.

3. As a new article of manufacture, a gelatine printing-matrix or plate, produced in the manner described by means of substances which render gelatine non-absorbent of water, such as alum, tannin, or other equivalent coagulating bodies, applied substantially as and for the purpose set forth.

ERNEST EDWARDS.

Witnesses:

F. M. SMITH,
T. J. WERT.