No. 753,291. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

GEORGE F. McINDOE AND JAMES W. McINDOE, OF BOSTON, MASSACHUSETTS, ASSIGNORS OF ONE-THIRD TO ARTHUR E. WHITNEY, OF WINCHESTER, MASSACHUSETTS.

METHOD OF PRODUCING INTAGLIO PRINTING-FORMS ON CYLINDRICAL SURFACES.

SPECIFICATION forming part of Letters Patent No. 753,291, dated March 1, 1904.

Application filed March 16, 1903. Serial No. 147,981. (No specimens.)

To all whom it may concern:

Be it known that we, GEORGE F. McINDOE and JAMES W. McINDOE, of Boston, in the county of Suffolk and State of Massachusetts, have invented jointly a new and useful Method of Producing Intaglio Printing-Forms on Cylindrical Surfaces, of which the following is a specification.

Our invention relates to a method of producing intaglio printing-forms on cylindrical surfaces; and it consists in certain novel features of manipulation and operation, as fully set forth and described hereinafter, and particularly pointed out in the claim hereto appended.

The object of our invention is the production upon a cylindrical surface at a comparatively small cost of an intaglio printing-form on which shall be reproduced a representation of the surface of a selected piece of textile fabric or other like flexible material, from which a reproduction of the configuration of the surface of said fabric, including figures or designs, may be printed continuously upon the surface of a roll of paper or other material, the ink or color on the completed print representing the depressions in the fabric and also in the etched cylinder and the uninked portions of the print representing the raised portions of said fabric, thereby producing a desirable and useful article of manufacture in large quantities at a small cost.

In carrying out the above objects we first select the fabric a representation of which it is desired to have printed continuously on the roll of paper or other material; saturate said material with a solution of glutinous material and dry it by subjecting it to heat and pressure to harden it, remove wrinkles, and prevent the absorption of other substances that may be applied thereto; secure said fabric in a fixed and extended position on a suitable supporting-bed having an elastic surface, which may be flat or cylindrical; apply to the hardened surface of said fabric a thin coating of any well-known acid-resisting paste-like substance capable of being spread by a printer's composition roller to cover the raised portions of said fabric without filling the cavities thereof. The coated fabric is then passed beneath the metal cylinder that is later to be developed into a cylindrical printing-form while it is being revolved under pressure to transfer said acid-resisting coating from the surface of said fabric to the periphery of said cylinder. The cylinder is then revolved in a bath of a suitable acid to etch the uncovered portions of its surface to develop it into an intaglio printing-form, from which when the acid-resisting coating has been removed from the unetched portions thereof may be printed continuously upon a roll of paper or other smooth flexible material a series of exact reproductions of the surface of the fabric employed as a basis, the ink or color on the completed print representing the cavities in the fabric and the uninked portions of the print representing the raised portions of said fabric, whereby a very desirable and merchantable article of manufacture may be produced with great rapidity and at small cost.

In order to have the two ends of the design on the fabric if ornamented by figures join properly on the cylinder, so that when continuous printing is done on a roll of paper there shall be no serious disfiguring breaks in the print, the circumference of the etched cylinder must correspond accurately to the length of one or more complete figures of the design, and to properly place said acid-resisting coating on said cylinder we apply the guard-plate or shield shown and described in the Letters Patent granted to George F. McIndoe May 6, 1902, No. 699,220.

We claim—

The process of producing intaglio printing-forms on cylindrical surfaces, for printing continuously upon paper or other smooth flexible material, a representation of the surface of a selected piece of textile fabric or other like flexible material, which consists in first saturating a selected piece of such material of the desired size, shape, and configuration with a sizing, as a solution of glutinous material; drying said saturated material by subjecting it to heat and pressure; securing

said saturated material in a fixed and extended position on a suitable supporting-bed having an elastic surface; applying to said saturated and dried fabric a thin coating of an acid-resisting paste-like material, capable of being spread by a printer's inking-roller; then passing said coated fabric with its supporting-bed beneath the cylinder that is to be developed into an intaglio printing-form, under pressure, and while said cylinder is being revolved, to transfer said acid-resisting material from the surface of said fabric to the periphery of said cylinder; and then subjecting said cylinder to the action of a bath of a suitable acid to etch the uncovered portions of its surface, to develop it into an intaglio printing-form; and then removing the acid-resisting material.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 14th day of March, A. D. 1903.

GEORGE F. McINDOE.
JAMES W. McINDOE.

Witnesses:
N. C. LOMBARD,
J. H. STEVENSON.