UNITED STATES PATENT OFFICE.

RUDOLF HAJEK, OF VIENNA, AUSTRIA-HUNGARY, ASSIGNOR TO HERMANN HURWITZ & CO., OF BERLIN, GERMANY, A FIRM.

METHOD OF PRODUCING PRINTING-SURFACES.

1,067,652. Specification of Letters Patent. Patented July 15, 1913.

No Drawing. Application filed November 20, 1912. Serial No. 732,495.

To all whom it may concern:

Be it known that I, RUDOLF HAJEK, subject of the Emperor of Austria-Hungary, residing at 61 Van der Nüllgasse, Vienna, in the Empire of Austria-Hungary, have invented a certain new and useful Improved Method of Producing Printing-Surfaces, of which the following is a specification.

This invention relates to an improved method of producing printing surfaces for manifolding documents, drawings and the like and relates to certain improvements in the known method in which the matter to be reproduced is transferred to a prepared dull vitreous and rigid surface, such as glass or the like, the transfer being developed and prints thereafter taken by inking the vitreous surface in the usual manner.

According to the present invention the matter to be reproduced is printed, impressed or otherwise produced in a stencil or coated sheet, which may be of the kind used for the mimeograph or cyclostyle, or any other coated or (preferably) waxed sheet in which the matter to be reproduced can be impressed either by means of a type-writer, style, or other stenciling instrument. The stencil is then laid on the vitreous surface which is previously rendered sensitive by treating with an acid solution consisting essentially of a hygroscopic substance such as the sugars or glycerin and hydrochloric acid together with alum or aluminium or magnesium salts or both aluminium and magnesium salts with or without the addition of calcium chlorid or an alkaline salt.

The following composition is given by way of example:—About 20 parts by weight of a hygroscopic sugar or glycerin, about 10 parts by weight of aluminium and magnesium salts in about equal parts, and 2 to 3 parts by weight of hydrochloric acid and an alkaline salt, the whole being dissolved in about 65 parts of water. This solution is spread sparingly over the surface and the surface then thoroughly dried by means of a small cloth, pad of wadding, or the like.

The stencil is covered with a sheet of paper, linen or the like which is impregnated with a special solution capable of producing an insoluble precipitate with the solution with which the vitreous surface is treated.

The solution may be either ammonia in which ferrogallate is suspended or any other suitable alkaline solution such as ammonium carbonate, or solutions or suspensions of metallic oxids or hydrates such as ferric oxid or hydrate, or the fixed alkalis in caustic or carbonate form. Organic salts capable of forming insoluble substances in contact with the hygroscopic solution may likewise be employed in solution or suspension.

Apparently the salts contained in the impregnated sheet react with the aluminium and magnesium salts on the vitreous surface to form an invisible and insoluble precipitate.

Uniform contact between the stencil sheet and the vitreous surface, in order to obtain a perfect transfer, is attained by pressing the stencil upon the vitreous surface in any suitable manner, so that the stencil coheres to the vitreous surface.

After the stencil, with the impregnated sheet thereon, has been left a short time in contact with the vitreous surface, it is removed, the transfer however remaining still invisible. The vitreous surface is then treated with a developing solution, which also enables the blank parts of the surface to repel printer's ink on subsequent inking. The developing solution consists essentially of borates or organic acids or their alkaline salts, such as, for example, the aromatic hydrocarbons, cinnamic acid, salicylic acid, benzoic acid or the like, the acid or salt being dissolved in glycerin or like hygroscopic liquid and being spread thinly over the surface, which is then left slightly moist. The surface may thereupon be inked and any desired number of prints taken in the usual manner, the surface being reinked for each reprint. The plate is afterward cleaned by using the hygroscopic solution, previously used to prepare the vitreous surface for the transfer, so that the plate is not only cleaned, but is simultaneously prepared for receiving a fresh transfer.

I claim:—

1. Method of producing printing surfaces, which consists in preparing and rendering sensitive a dull, vitreous and rigid surface with a hygroscopic acidic solution of an aluminium salt, impressing the matter to be copied in a coated sheet, laying the impressed sheet on the prepared vitreous surface, applying a saturated sheet to the back of said coated sheet, said saturated sheet being saturated with a solution which is

capable of forming an insoluble precipitate on contact with said prepared vitreous surface, applying pressure to and thereafter removing said coated and saturated sheets, and treating the vitreous surface with a hygroscopic solution which causes the unimprinted parts thereof to repel printer's ink.

2. Method of producing printing surfaces, which consists in preparing and rendering sensitive a dull, vitreous and rigid surface with a hygroscopic acidic solution of aluminium and magnesium salts, impressing the matter to be copied in a coated sheet, laying the impressed sheet on the prepared vitreous surface, applying a saturated sheet to the back of said coated sheet, said saturated sheet being saturated with a solution which is capable of forming an insoluble precipitate on contact with said prepared vitreous surface, applying pressure to and thereafter removing said coated and saturated sheets, and treating the vitreous surface with a hygroscopic solution which causes the unimprinted parts thereof to repel printer's ink.

3. Method of producing printing surfaces, which consists in preparing and rendering sensitive a dull, vitreous and rigid surface with a hygroscopic acidic solution of an aluminium salt, impressing the matter to be copied in a waxed sheet, laying the waxed sheet on the prepared vitreous surface, applying an impregnated sheet to the back of said waxed sheet, said impregnated sheet being impregnated with a solution capable of forming an insoluble precipitate on contact with said prepared vitreous surface, applying pressure to and thereafter removing said waxed and impregnated sheets, and treating the vitreous surface with a solution which causes the unimprinted parts thereof to repel printer's ink.

4. Method of producing printing surfaces, which consists in preparing and rendering sensitive a dull, vitreous and rigid surface with a hygroscopic acidic solution of aluminium and magnesium salts, impressing the matter to be copied in a waxed sheet, laying the waxed sheet on the prepared vitreous surface, applying an impregnated sheet to the back of said waxed sheet, said impregnated sheet being impregnated with a solution capable of forming an insoluble precipitate on contact with said prepared vitreous surface, applying pressure to and thereafter removing said waxed and impregnated sheets, and treating the vitreous surface with a solution which causes the unimprinted parts thereof to repel printer's ink.

In testimony whereof I have affixed my signature in presence of two witnesses.

RUDOLF HAJEK.

Witnesses:

HANS SCHUSRY,

KARL HORAK.