UNITED STATES PATENT OFFICE.

EMIL HOLTZMANN, OF SPEYER, GERMANY, ASSIGNOR TO WILLIAM ARBUTHNOT, OF LONDON, ENGLAND.

METHOD OF PRODUCING MULTIPLE COPIES OF WRITINGS.

SPECIFICATION forming part of Letters Patent No. 227,629, dated May 18, 1880.

Application filed December 3, 1879. Patented in Germany April 30, 1878, in France May, 1878, in Belgium May 11, 1878, and in England May 13, 1878.

To all whom it may concern:

Be it known that I, EMIL HOLTZMANN, of Speyer, in the Empire of Germany, have invented a certain new or Improved Method of Copying or Reproducing Designs, Plans, Drawings, Writing, and the like, (and for which I have received a German patent, dated 30th April, 1878; French patent, No. 124,537, May, 1878; English patent, dated 13th May, and sealed 25th October, 1878, and Belgian patent, dated May 11, 1878, No. 45,126, and issued May 31, 1878,) of which the following is a specification.

This invention relates to improvements in the method of and means for reproducing designs, plans, drawings, writing, and the like from one original sheet, and in one color or various colors, as desired, no special apparatus being required.

By the said invention a considerable number of copies may be taken from one sheet in a very short time and at a very small cost.

In carrying the said invention into practice I employ tracing-paper, colors especially prepared for my purpose, and negative-paper. The tracing-paper I prefer using is that which is prepared from paper treated with a mixture of oil and resin or other gum and afterward drying it. Ordinary drawing-paper will not serve for my purpose, as the fluid would render it adhesive to the negative-paper; but tracing-paper will serve in all cases, whether for the reproduction of old drawings or the like, or for new matter. The colors are dissolved aniline pigments in a highly-concentrated condition dissolved in water. The negative-paper consists of ordinary strong, smooth, and sized paper, to which is applied quite a thick layer of animal gelatine or glue.

The operation of taking the copies is as follows—that is to say, the drawing, plan, writing, or other matter to be copied or reproduced is first made upon the said tracing-paper with the said fluid color or colors. It is then placed with its face upon the gelatine layer or coating of said negative-paper, the latter having been previously placed in cold water, and allowed to remain therein until it becomes thoroughly saturated. The said drawing or other subject is pressed down evenly, to allow the said negative-paper, covered with gelatine or glue, to absorb the color or colors. The tracing-paper is then removed, and the negative-paper is ready to have the copies taken therefrom. Then the paper upon which the copy is to be taken is, after being slightly wetted, placed upon the negative and pressed thereon by the hand. A copy is thus obtained, and in the same manner a great number of copies may be successively obtained from the same negative, the number obtainable depending upon the quantity of color used in the original drawing, plan, or writing.

I use paper known as "satin paper" for the copies.

As many as forty copies may very easily be taken.

The said invention is applicable to both large and small sheets.

I reserve for myself the right to take out a separate patent for the article or printing-surface described in the present application.

I claim—

1. The herein-described process of producing copies of plans, drawings, writings, and the like in colors soluble in water, which consists in causing a surface or layer of glue or gelatine rendered uniformly moist and absorbent by soaking it in water to take up the colors from an original drawing or writing, so as to form the desired negative impression, and pressing the damped paper, on which the impression is to be reproduced in a positive form, upon the gelatine thus prepared, substantially as herein set forth.

2. The method herein described of producing multiple fac-simile copies of plans, drawings, writings, and the like, consisting of the following steps, viz: executing an original writing or drawing with a concentrated aniline ink or inks, placing said original writing or drawing face downward on a gelatinous surface or film rendered uniformly moist and absorbent by saturating it with water to absorb the ink from the original writing or drawing and produce a negative impression

thereof on said gelatinous surface, then removing the original, and successively placing a number of damped sheets of paper on said gelatinous surface, and transferring the moist impression to said sheets of paper by applying hand or moderate pressure, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of November, 1879.

EMIL HOLTZMANN.

Witnesses:

F. HASSLACHER,

JOS. PATRICK.