

# UNITED STATES PATENT OFFICE.

ALBERT BOULAY, OF NEW YORK, N. Y.

## MANUFACTURE OF COLORED WALL-PAPERS.

SPECIFICATION forming part of Letters Patent No. 301,953, dated July 15, 1884.

Application filed June 9, 1884. (Specimens.)

### *To all whom it may concern:*

Be it known that I, ALBERT BOULAY, a citizen of the Republic of France, (who has declared his intention of becoming a citizen of the United States,) residing in the city, county, and State of New York, have invented certain new and useful Improvements in the Manufacture of Colored Wall-Papers; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same.

In the manufacture of colored wall-papers as now practiced the white paper is first coated with a uniform tint called the "ground" before any of the figured colors are put on. This is done by machine. The paper cannot be rolled until perfectly dry, and a very high temperature and the employment of a considerable number of persons are necessary for that purpose, and the losses during drying, both accidental and caused by the negligence of employes, are considerable, and as it is necessary to have on hand a great variety of ground tints, this operation requires a large stock of colored papers. When the designs for the colored figures are out of the hands of the designers, they are handed to persons to be placed on wooden blocks or cylinders to be used in the printing. For this purpose each color of the design is drawn, and the outlines of the same are reproduced on as many blocks or cylinders as there are colors. Each color is printed separately by a long, expensive, and oftentimes inaccurate operation. The blocks or cylinders are then given to engravers to be engraved. The colors used for the printing are generally in the form of paste mixed with glue. The engraving must therefore have enough relief for the purpose of printing to prevent the details of the colors from blending.

In my invention I have substituted engraving by the electro-chemical process; but in order to adapt this process to the purpose I have had to invent colors which are sufficiently clear and also sufficiently strong to print with the small relief possessed by plates engraved by the electro-chemical process. After much research and many experiments, I have succeeded in finding a composition which di-

rectly prints or stains the surface of the paper the same as used by the old process described above, without using (as in the printing of textile fabrics) any mordant or thickening.

The basis of my dyes consists of anilines, which I dissolve in a concentrated solution of boiling potash. I develop each color after the solution becomes cold by adding a few drops of acetic acid, after which it is filtered, and the colors are ready for use.

As the white papers used in the manufacture of wall-paper are strongly alumnized, the potash used in making my colors, when in the presence of the alum, forms a gelatinous aluminum, which affords solidity, purity of tone, and brilliancy to the colors. I print the colors directly on white paper, without the ground heretofore necessary, and, as my colors are transparent, one color is printed over another, whereby I obtain different colors by combination. Thus blue printed on yellow forms green; red on yellow, orange, &c., and the superposition of these colors in various proportions gives varieties of tints or shades to the different colors. After the printing, the paper is dried immediately with a roll of blotting-paper, in order to remove the excess of dye, and it can then be rolled without the heating and drying hitherto necessary.

The advantages of my invention are, therefore, first, to dispense with the first operation of "grounding," as I use white paper; second, to substitute for hand-engraving the less expensive and more expeditious method of electro-engraving on zinc; and, third, to diminish the labor of printing, inasmuch as my method of combining colors enables me to dispense with a large number of blocks or cylinders heretofore necessary.

Having fully described my invention, what I claim is—

1. The process of printing wall-papers by the use of aniline dyes or colors dissolved in boiling potash and developed by the addition of acetic acid, substantially as and for the purposes described.

2. The process of printing wall-papers by the use of aniline dyes or colors dissolved in boiling potash and developed by the addition of acetic acid, whereby the foundation or ground

color heretofore necessary is dispensed with, substantially as and for the purposes described.

3. The process of printing wall-papers by  
5 the use of aniline dyes or colors dissolved in boiling potash and developed by the addition of acetic acid, whereby blocks or cylinders engraved by the electro-chemical process may be used for the purpose of stamping or printing  
10 the colors, substantially as and for the purposes set forth.

4. In the process of printing wall-papers, the adaptation of engraving by the electro-chemical process by the use of aniline dyes or  
15 colors, substantially as and for the purpose described.

5. In the process of printing wall-papers, the superseding of and dispensing with the foundation or ground color heretofore necessary, substantially as and for the purposes described. 20

6. In the process of printing wall-papers, the use of combination and superposed colors, whereby the labor of printing is lessened, substantially as and for the purpose set forth.

ALBERT BOULAY.

Witnesses:

CHAS. A. FRAKE,  
GEORGE KANE.