J. Marchbank.

Blocks for Printg Oil Cloths.

No. 51,898 Patented Jan. 2. 1866.

Fig: 1

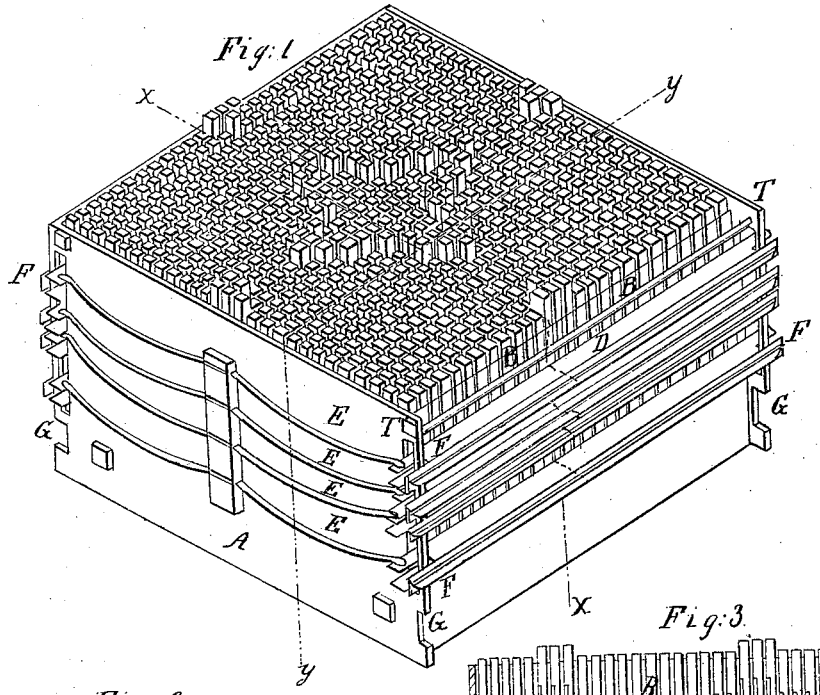


Fig: 2

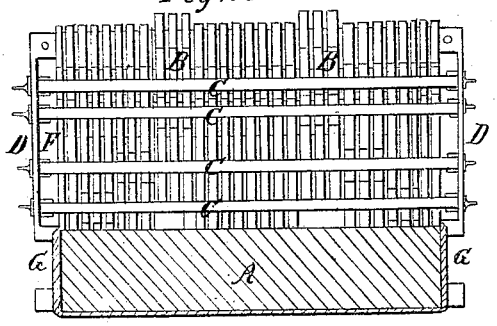


Fig: 3.

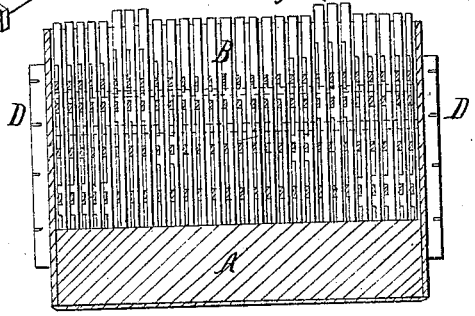
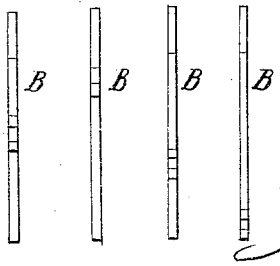


Fig 4



Witnesses

R. Mann

Wm Garland

Inventor.

John Marchbank

by

D. P. Holloway & Co

his attorneys.

UNITED STATES PATENT OFFICE.

JOHN MARCHBANK, OF LANSINGBURG, NEW YORK, ASSIGNOR TO HIMSELF AND JOSEPH M. P. PRICE, OF PHILADELPHIA, PA.

APPARATUS FOR PRINTING OIL-CLOTHS.

Specification forming part of Letters Patent No. **51,898**, dated January 2, 1866.

To all whom it may concern:

Be it known that I, JOHN MARCHBANK, of Lansingburg, in the county of Rensselaer and State of New York, have invented certain new and improved modes of constructing blocks for printing in several colors, particularly adapted to printing oil-cloths and similar purposes; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, made a part of this specification, and to the letters of reference marked thereon, the same letters in the different plans referring to identical parts.

The construction of a block by which the several colors might be applied by one impression in printing floor-cloths has long been much desired by manufacturers of oil-cloths, and the same want has been felt in all kinds of printing in various colors.

According to the mode heretofore universal among manufacturers of this class of goods, as many blocks are necessary as there are different colors in the pattern to be printed. On each of these blocks the portion to be printed in the given color is raised, the remainder of the block being cut away. The successive imposition of the various blocks brings out the entire figure. This operation requires much time and great care to insure the proper registering of the various types in the imposition of the several colors.

My improvement consists in putting up blocks with detached type, which may be arranged for any pattern, and which are attached to slides or thin levers, by which as many of them as are required for any given color are projected from the face of the block, and after receiving the color from a pad are retracted by a spring to their places in the block, and thus the colors, being taken up singly, are applied by a single impression.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The drawings represent a block for printing floor oil-cloth; but the same principle may be applied to any kind of printing by type in several colors.

Figure 1 is a perspective view of the block turned bottom side up, and showing as many of the type as are necessary to make one color in the entire pattern projected. Fig. 2 is a section on the line *x x*, showing the mode of attaching the cross-levers to the type. Fig. 3 is a section on the line *y y*. Fig. 4 shows the shape of the type and the construction of the notches in which the cross-levers work.

The block A is made eighteen inches square, its face being divided by lines drawn parallel to its sides in both directions, so that nine equidistant lines will be drawn in each inch, making eighty-one squares in each square inch. Through the center of these little squares pass the types, which are four-sided prisms of wood or metal, having between each other spaces sufficient to prevent the amalgamation of the paint taken up by the points of the type. These spaces are maintained by a perforated frame-work, through which the type passes, projecting far enough to save the frame-work from contact with the paint—say the eighth of an inch, or more if found necessary. Across the block, between the rows of types, pass the cross-levers C, of which there are as many between each pair of rows as there are colors in the pattern to be worked. The type are cut away so as to move freely between these cross-levers, leaving projections of the entire diameter of the type on each side of the cross-lever to which, in working the design, it is intended to be attached. All the type intended to take up the same color are attached to the same lever, and all the levers intended to operate the types taking up the same color are placed on the same horizontal plane, and their extremities extended through the case are attached to the bars D, which have their extremities controlled by the guides F F, in which they move up and down. There are as many of the bars D as there are horizontal rows of the levers C and colors to be worked.

E E E E are springs attached to the extremities of the bars D, and which raise the bars and retract the type when they have taken up the paint.

The ends of the case A, Fig. 1, are made of metal, and the type are solidly backed up by wooden blocks, as shown at A in Figs. 2 and 3. Perforated partitions separating the levers C C keep the type rigidly in place and preserve the parallelism of their action.

In operating with these blocks they are suspended at G G upon parallel ways, upon which they slide freely. Under these ways are placed pads, upon which the paints intended to be used are spread. These pads are placed so as not to touch the type when retracted, but so as to be pressed upon by the type when protruded.

The drawings represent a block prepared for printing in four colors. Suppose these to be white, red, blue, and yellow, the paints in this order are placed upon the pads, the lower lever moves the type intended to receive the white paint, the next one the red, &c. The block being moved over the pad, the lever-bars are pressed firmly down, the types take up the white paint, and, the bar being released, the springs force back the bars, levers, and types. In like manner the other paints are taken up. The drawings, Fig. 1, represent, in the case supposed, the types which are to take up the blue paint as protruded. When all the colors have been taken up the block is taken from the ways and the printing done in the ordinary mode. All the colors are thus placed upon the cloth at one impression.

I do not propose to limit my claim to the case of blocks for printing oil-cloths as described, but assert my right to the principle developed as applicable to any other style of printing in colors from type, to any of which it may be applied by modifications of the mode of operation.

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

1. Constructing forms of convertible type, for printing in more than one color, so that the portions of the type intended to receive a particular color may be successively advanced to receive the color and retracted to their places in the form, so that all the colors may be printed from one impression, substantially as described.

2. The combination of the case A and types B, substantially as and for the purpose described.

3. The construction of the type B, cross-levers C, and bars D, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN MARCHBANK.

Witnesses:

JAMES F. ROSS,

GEO. H. HEARMAN.