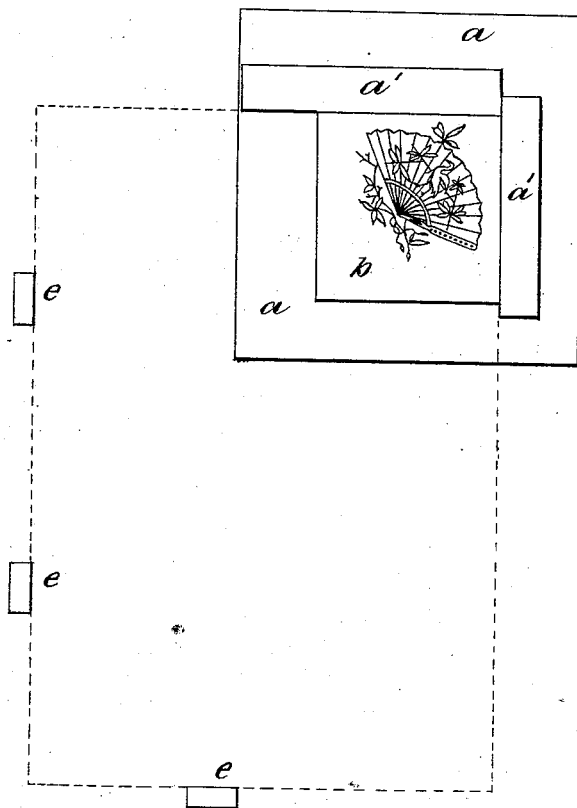


J. CARSON.  
Art of Chromatic Printing.

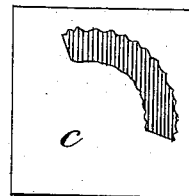
No. 221,215.

Patented Nov. 4, 1879.

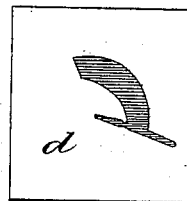
*Fig. 1.*



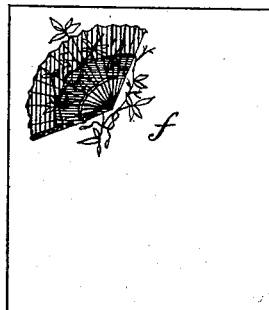
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses.

*Wm. Williams*

*William Sheddock*

*John Carson*

Inventor

*per Alfred Sheddock atty.*

# UNITED STATES PATENT OFFICE.

JOHN CARSON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN THE ART OF CHROMATIC PRINTING.

Specification forming part of Letters Patent No. **221,215**, dated November 4, 1879; application filed July 2, 1879.

*To all whom it may concern:*

Be it known that I, JOHN CARSON, of Brooklyn, Kings county, State of New York, have invented a certain new and useful Improvement in the Art of Color-Printing, of which the following is a specification.

This invention has for its object to improve the appearance of the class of printing, whether by letter-press, die-stamping, engraved plate, or lithographic process, in which two or more impressions of different colors are used, and also to facilitate the production of such work. In such work, as heretofore done, the different dies, &c., have the different parts of the design engraved on them, irrespective of the relative position of the design to the sides of the dies, &c., and are placed on the bed of the machine, irrespective of position, so that after the first impression, which is generally the ground-work of the design, has been run off, the second die is placed in the machine and its correct registration with the first impression is only arrived at, after a number of trials, by altering and adjusting the stops or guide-pins against which the edges of the paper are placed. It is almost impossible to obtain a perfect registration in this manner, besides, the loss due to the waste of paper and time consumed.

To make clear the manner in which I overcome all these objections, I will refer to the accompanying drawings, which represent my improvement in the art of color-printing as done by engraved dies, the applicability of it to letter-press, plate, and lithographic printing being readily understood from the following description, in conjunction with the drawings, without my particularly describing the various styles of printing.

Figure 1 represents the foundation or ground-work die in place against fixed guide-pieces of the machine with a sheet of paper (shown in dotted lines) with the stops against its edges. Figs. 2 and 3 represent two other die-blocks engraved in parts corresponding to two different colors in the perfected design, and Fig. 4 represents part of a sheet of paper with the perfected design impressed thereon.

*a* represents the bed of the machine, which is provided with the guide-pieces *a' a'*. All

the blocks *b c d*, on each of which parts of the design corresponding to the different colors of the completed work are to be engraved, are made to fit snugly against the guide-pieces *a' a'* without any play, so that they may be removed and replaced as often as necessary, and yet always assume the same position. The ground-work or foundation of the design is engraved in the block *b*, as shown. This is then placed on the bed *a* against the guide-pieces *a' a'*, and an impression taken in transfer-ink on a sheet of paper. The guide-pins or stops *e e* are then set to the edges of the paper before it is removed from the die. The blank block *c* is then placed on the bed *a*, the block *b* and the paper having been taken away. The paper is then placed back again against the stops *e e*, and the impression transferred from the paper to the block *c*. Instead of using a sheet of paper for transferring the design the tympan itself may be used for this purpose. The block *c* is then removed and engraved at the part or parts only which corresponds or correspond to one of the colors to be printed. The block *d* is then placed in the machine against the guide-pieces *a' a'*, and a similar transfer made on it, which is engraved at the parts corresponding to another color, and so on. As many blocks are thus prepared as there are colors or impressions in the perfected design.

Now, it will be observed, that no matter how often the dies are placed in position on the bed *a* (which is done by simply placing them against the guide-pieces *a' a'* and locking them up in place, if necessary, by any of the usual methods) or removed therefrom, or in what order they are so placed to be printed from, they will always impress all similar sheets of paper, when placed against the stops *e e*, in identically the same parts corresponding to each of their respective part or parts of the design, if the stops *e e* have not been disturbed, so that the registrations of all the colors are perfect without involving any of the nice adjustments required by the old method.

*f* represents the design as printed from the dies *b c d*, the ground-work or outline being impressed from the die *b*, the vertical shading which represents one color from the die *c*, and

the horizontal shading representing another color from the die *d*.

All that is necessary to do to print the different impressions on different machines (the dies being prepared in the manner as aforesaid) is to have the beds of the machines provided with guide-pieces corresponding to the guide-pieces *a' a'* of the first machine, or the machine in which the transfers from the foundation-die to the others are made. The die to be used in any one of them is placed in the first machine, a little mucilage or paste being put on its face. A sheet of the paper to be printed is then placed against the stops *e e* and an impression taken, the impression being allowed to dwell long enough to give the adherent material time to sufficiently set; or the sheet of paper may be fastened to the die by means of any suitable clamping device, so that the die may be taken out of the first machine with the adjusting sheet of paper adhering or fastened to it and placed on the bed of the machine in which it is to be used, and against the guide-pieces of it corresponding to the guide-pieces *a' a'* of the first machine. The guide pins or stops *e e* of this machine are then set to the edge of the adjusting sheet of paper while it is still adhering to the die. Then this machine is ready to work, after the adjusting sheet of paper is removed, and so on with as many machines as there are colors to be printed, if so desired, the registration of all of them being as perfect as if they were all done on one machine.

In letter-press printing two sides of the chase would correspond to the guide-pieces *a' a'*, the cuts or electrotypes being set against the sides of the chase or with a definite amount of furniture between them.

This method of printing enables me to combine all the different processes of color-print-

ing, if desired, as will be seen from the above.

Instead of using the fixed guides to hold the dies, &c., in place on the bed of the machine, dowel-pins may be used for this purpose.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As an improvement in the art of color-printing, the method of transferring and preparing from the foundation or ground-work die, plate, or stone, the various parts of the design on different dies, plates, or stones, by first placing the foundation-die against fixed guide-pieces; second, taking an impression in transfer-ink on the tympan or on a sheet of paper, the stops of the machine being set to its edges before removal; third, substituting an unengraved die-block for the first die and taking an impression thereon from said transfer-sheet; and fourth, engraving said second die-block in the desired places, substantially as hereinbefore set forth.

2. As an improvement in the art of color-printing, preparing two or more die-blocks in one machine, substantially in the manner set forth, and then securing to them sheets of paper while they are separately held in the first machine, and then placing them against the fixed guides of other machines corresponding to the fixed guide-pieces of the first machine, with the adjusting sheets of paper adhering or fastened to them, the guide pins or stops of said other machines being then set against the edges of the adjusting sheets of paper, as and for the purpose hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 28th day of June, 1879.

JOHN CARSON.

Witnesses:

ALFRED SHEDLOCK,  
H. D. WILLIAMS.