J. Green.

Calico Printing.

No. 56,208. Patented Jul. 10, 1866.

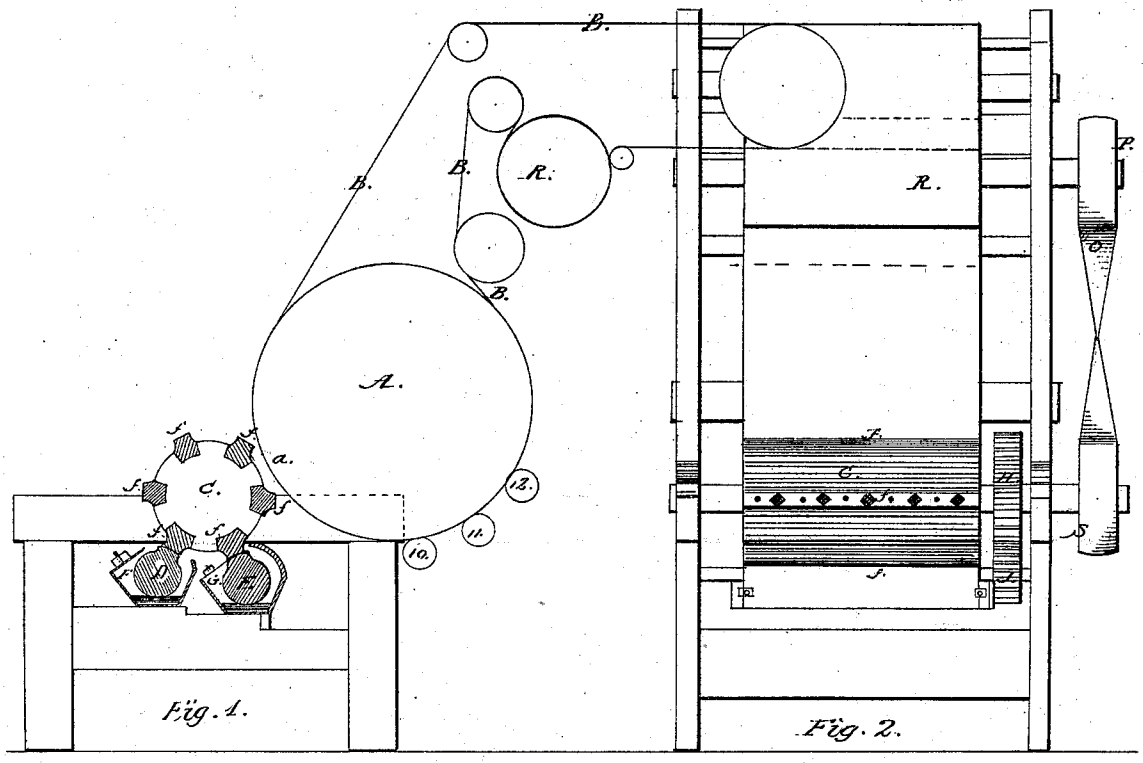

Fig. 1.

Fig. 2.

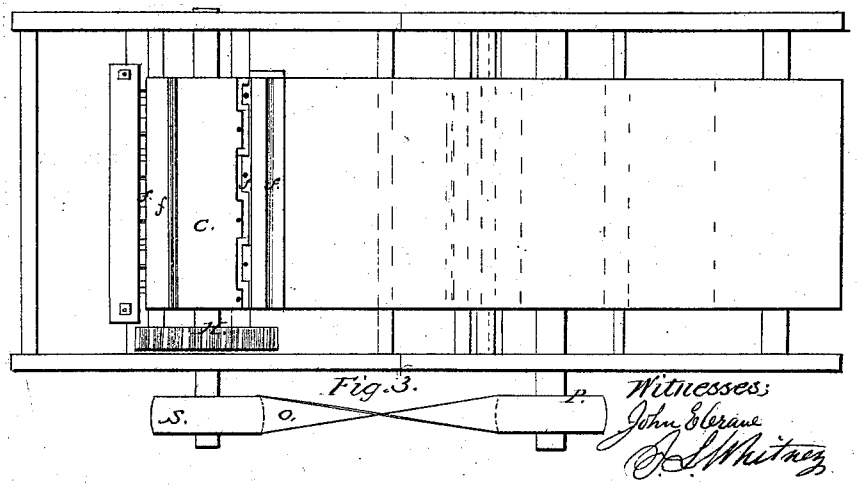

Fig. 3.

Fig. 4.

Inventor;
John Green

Witnesses;
John E. Crane
A. L. Whitney

UNITED STATES PATENT OFFICE.

JOHN GREEN, OF LOWELL, MASSACHUSETTS.

MACHINE FOR PRINTING TEXTILE FABRICS.

Specification forming part of Letters Patent No. **56,208**, dated July 10, 1866.

To all whom it may concern:

Be it known that I, JOHN GREEN, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in the Machines which are Used for Printing Textile or other Fabrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical section, Fig. 2 a front elevation, and Fig. 3 a plan or top view, of my improvement as applied to a calico-printing machine. Fig. 4 is an end view of a furnishing-cam having two furnishing-surfaces *v v*.

In the drawings, A is a large cylinder, called the "bowl," around the under side of which and around a series of smaller cylinders or rolls an endless apron or blanket, B, is carried, as usual.

A printing-cylinder, C, rotates in suitable bearings in front of and nearly in contact with the lower side of the bowl A, the working-surface of the printing-cylinder or the figures *f* cut thereon coming in contact with the blanket B at *a* on the surface of the bowl A, as in the ordinary calico-printing machine.

In the ordinary mode of printing lateral or transverse stripes or figures on textile or other fabrics by machinery the printing-cylinders are each provided with one furnishing-roll, which revolves in a color-box containing ink or coloring-matter, and when more than one color is printed on the same piece of cloth or other material a separate printing-cylinder, furnishing-roll, and color-box are required for each color.

In carrying out my improvement I provide one, two, or more furnishing-cams, D and E, or their equivalent, which revolve in color-boxes F and G, each box being supplied with a different color, and all arranged so as to deposit color upon any portion of the printing-surface of the cylinder C.

The furnishing-cams D and E may have two or more furnishing-surfaces, *v*, as shown in Fig. 4, in which case the printing-cylinder C will have stripes or figures to correspond with the increased number of furnishing-surfaces on said cams.

The furnishing-surfaces *v* on the cams D and E may be sufficiently wide to cover more than one stripe or figure on the cylinder C, so that each furnishing-surface *v* on said cams may furnish the same color for more than one stripe or figure on the cylinder C.

One of the furnishing-cams D or E may be worked alone with the cylinder C, and thereby print one or two or more narrow stripes in one color, and one, two, or more of the said furnishing-cams, with a cylinder, C, may be used alone or in conjunction with the common printing-rolls 10 11 12, which are shown in Fig. 1.

Two or more of the printing-cylinders C, with cams D and E and color-boxes F and G, may be applied to the bowl A in contact with the blanket B, in like manner as that represented in Fig. 1.

That portion of the cylinder C on which the figures *f* are cut I generally make in movable or detachable sections, so that when it is desired to print one or more stripes or figures, and then leave a blank of from one-half of a yard to one and one-half yard, as in ladies' dress and skirt patterns, all the sections of figures may be removed, except those required for printing said stripes or figures.

The size of the cams D and E and the speed of the same must be in proportion to the size and speed of the printing-cylinder C, so that each of the cams shall revolve in time to deposit its color upon the proper stripe or figure on the printing-cylinder C, as in the present instance. The printing-cylinder C has six stripes or figures *f*, and is so geared that one revolution of the printing-cylinder causes each of the furnishing-cams to perform three revolutions, the gear H on the printing-cylinder C having thirty-six teeth, and the gears J on each of the furnishing-cams having twelve teeth. The furnishing-cams being thus driven by the printing-cylinder causes the cams to deposit on the figures *f* of the cylinder every other figure a black and every other figure a red color, each black figure on the cylinder missing the red cam, and each red figure on the cylinder missing the black cam as they revolve.

The cylinder C may be driven by gears or by a belt, O, running from pulley P on the end of the roll R onto pulley S on the shaft of the printing-cylinder C, or by any other method that will cause the working or printing surface of the cylinder C to travel at the same speed of the surface of the blanket B.

The cloth or other material printed passes between the printing-cylinder C and the blanket B, which is carried around the bowl A, and the figure is printed on the said material between the cylinder C and the blanket B against the surface of the bowl A.

My improvement may be used for printing yarns for knit or woven fabrics where the yarns are printed before being knit or woven, as in neck-comforters, ladies' hoods, shawls, and other similar articles. Said yarns or other material may be printed without the aid of the ordinary printing-machine, or being connected therewith by passing said yarn between the cylinder C and the cams D and E.

I am aware that longitudinal stripes have been printed in different colors on textile and other fabrics by furnishing color to the printing-cylinder with sectional rolls, like several pulleys on a shaft, each section furnishing a different color from different compartments, into which the color-box is divided by partitions across said box. I therefore disclaim having invented the above-described method of printing in two or more colors; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The use and application of two or more furnishing-cams, D and E, or their equivalent, to the working or printing surface of a printing-cylinder, said cams being constructed with one, two, or more furnishing-surfaces *v*, substantially as and for the purpose specified.

2. Printing two or more colors with one cylinder, each color being deposited upon the printing-surface of the cylinder by a separate furnishing-cam or its equivalent, substantially in the manner set forth.

3. The arrangement of the cams D and E and cylinder C, whereby two or more colors may be printed on the same piece of cloth or other material, substantially as herein set forth.

4. The arrangement of the cams D and E and the cylinder C, when used separately or in conjunction with the common printing-rolls 10 11 12, as set forth.

5. In combination with the furnishing-cams D and E, for furnishing more than one color to the printing-cylinder C, the detachable sections of such cylinder arranged and made to operate substantially as and for the purpose specified.

6. Printing textile or other fabrics or yarns to be knit or woven into fabrics in two or more colors by passing them between the cylinder C and the cams D E, substantially as set forth.

JOHN GREEN.

In presence of—
JOHN E. CRANE,
J. S. WHITNEY.