

E. J. Stephens & H. J. Green.
Printing Yarn.

N^o 46829.

Patented Mar. 14. 1865.

Fig: 1.

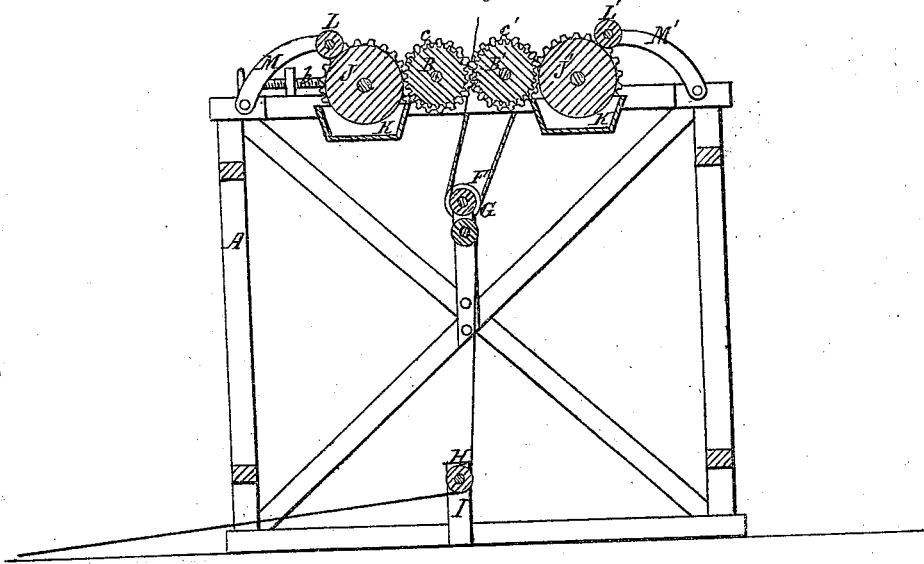
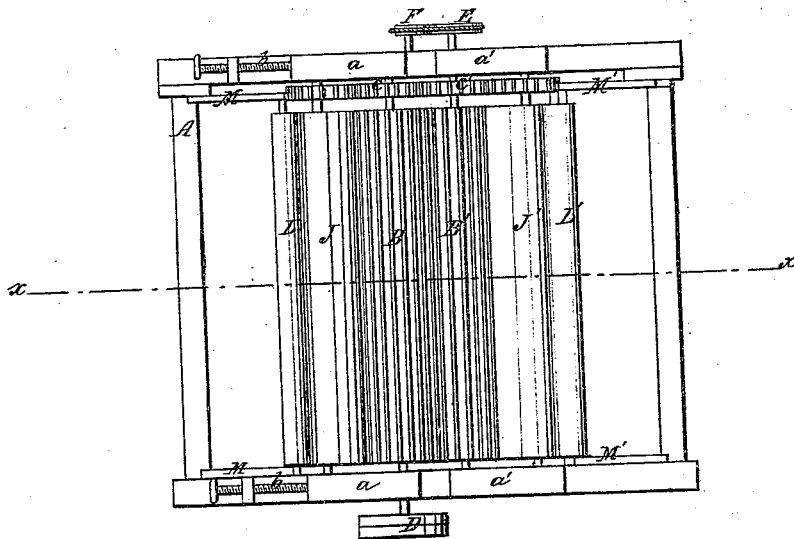


Fig: 2.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD J. STEPHENS AND HIRAM E. GREEN, OF PAWTUCKET, R. I.

IMPROVED MACHINE FOR PRINTING YARN.

Specification forming part of Letters Patent No. 46,829, dated March 14, 1865.

To all to whom it may concern :

Be it known that we, EDWARD J. STEPHENS and HIRAM E. GREEN, of Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and Improved Machine for Printing Yarn; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a longitudinal vertical section of this invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements for printing what is known by the trade as "zephyr worsted." Such yarn presents a variegated appearance, alternately gray and black, or any other desirable color or colors, one of which is the ground on which the other is produced by printing. The operation of printing is usually effected by means of blocks, one of which is flat, so as to support the yarn, whereas the other is corrugated and arranged so that if its projecting points are supplied with the desired color and pressed down on the yarn, said color is transferred to one side of the yarn, leaving the other side imperfectly colored. It is obvious that by this method of printing the desired effect is only partially obtained, and said defect is remedied by this present invention, which consists in printing the yarn simultaneously on both sides by running it through between two fluted rollers, which are supplied with the requisite quantity of color by means of ink-rollers or color-rollers similar to those used in ordinary printing-machines.

A represents a frame, made of wood or any other suitable material, and provided with boxes *a a'*, which form the bearings for the printing-rollers B B', the surfaces of which are fluted, as clearly shown in the drawings. The bearings of one of these rollers are rigid, but those of the other are adjustable by set-screws *b*, or in any other suitable manner, so that said rollers can be set close together

or farther apart, to suit different kinds of yarn. The axles of the printing-rollers B B' are geared together by means of cog-wheels *c c'*, so that the same rotate in opposite directions with uniform and equal velocities, and on the axle of one of said rollers are mounted two pulleys, D, one fixed and the other loose, whereas on the opposite end of the axle of the same, or of the other roller, is mounted a grooved pulley, E, from which a belt extends round a pulley, F, on the end of the axle of one of the feed-rollers G. The yarn to be printed extends from a suitable spool or beam (not shown in the drawings) under the guide-roller H, which has its bearings in standards I, rising from the lower part of the frame, thence through between the feed-rollers G and up to the printing-rollers B B', as shown in Fig. 1 of the drawings in red outlines, and while passing through between these rollers the yarn is printed.

The printing-rollers B B' are supplied with color by means of ink or color rollers J J', which have their bearings in the same blocks that form the bearings of the printing-rollers, and which are geared together with said printing-rollers so that they will be uniformly supplied therewith. Said color-rollers dip into troughs K K', which contain the desired color, and small rollers L L' are arranged with their bearings in curved arms M M', which are hinged to the inner sides of the longitudinal timbers of the frame A, so that said rollers will bear by reason of their inherent gravity on the peripheries of the color-rollers, and that the same can be turned back whenever it may be desirable to relieve the color-rollers. The small rollers K K' serve to distribute the color on the surface of the color rollers, and, if desired, a vibrating motion can be imparted to them similar to the ink-rollers of a printing-press.

It is obvious that the means for supplying color to the color-rollers can be changed in various different ways, and we do not wish to confine ourselves to the means shown in the drawings, but reserve the right to change the same as may appear desirable.

By means of this machine the printing of yarn can be effected much easier and quicker than it can by the old method, and, furthermore, the yarn is printed on both sides, so

that the effect produced by the same is much superior to that of yarn printed in the old way.

We claim as new and desire to secure by Letters Patent—

The fluted rollers B B', in combination with color-rollers J J' and distributing-rollers L L', or their equivalents, constructed and operat-

ing substantially as herein set forth, for the purpose of printing yarn simultaneously on both sides.

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Witnesses:

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