J. McNAUGHT.

Chromatic Printing-Machine.

No. 222,069. Patented Nov. 25, 1879.

FIG. 1.

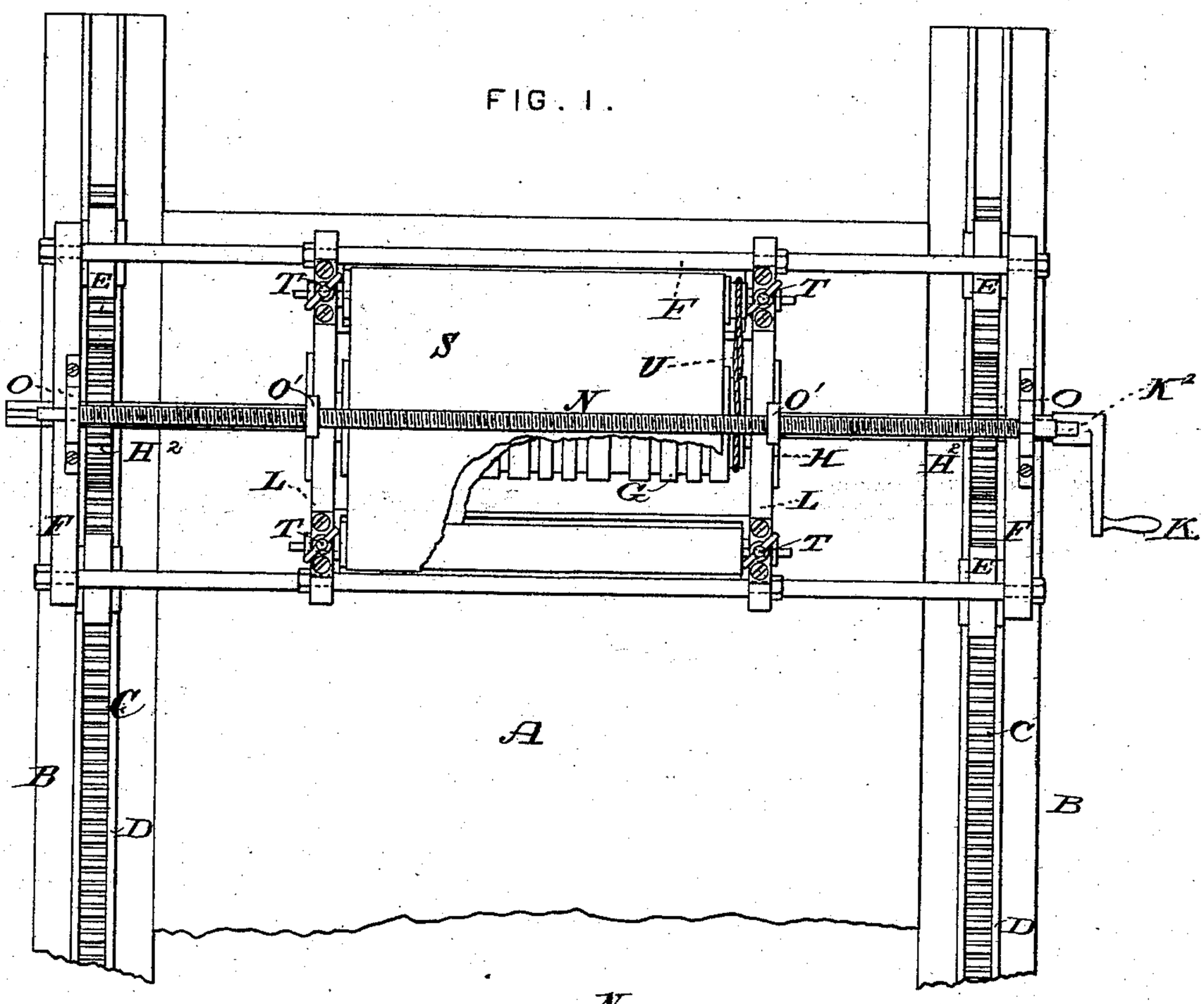
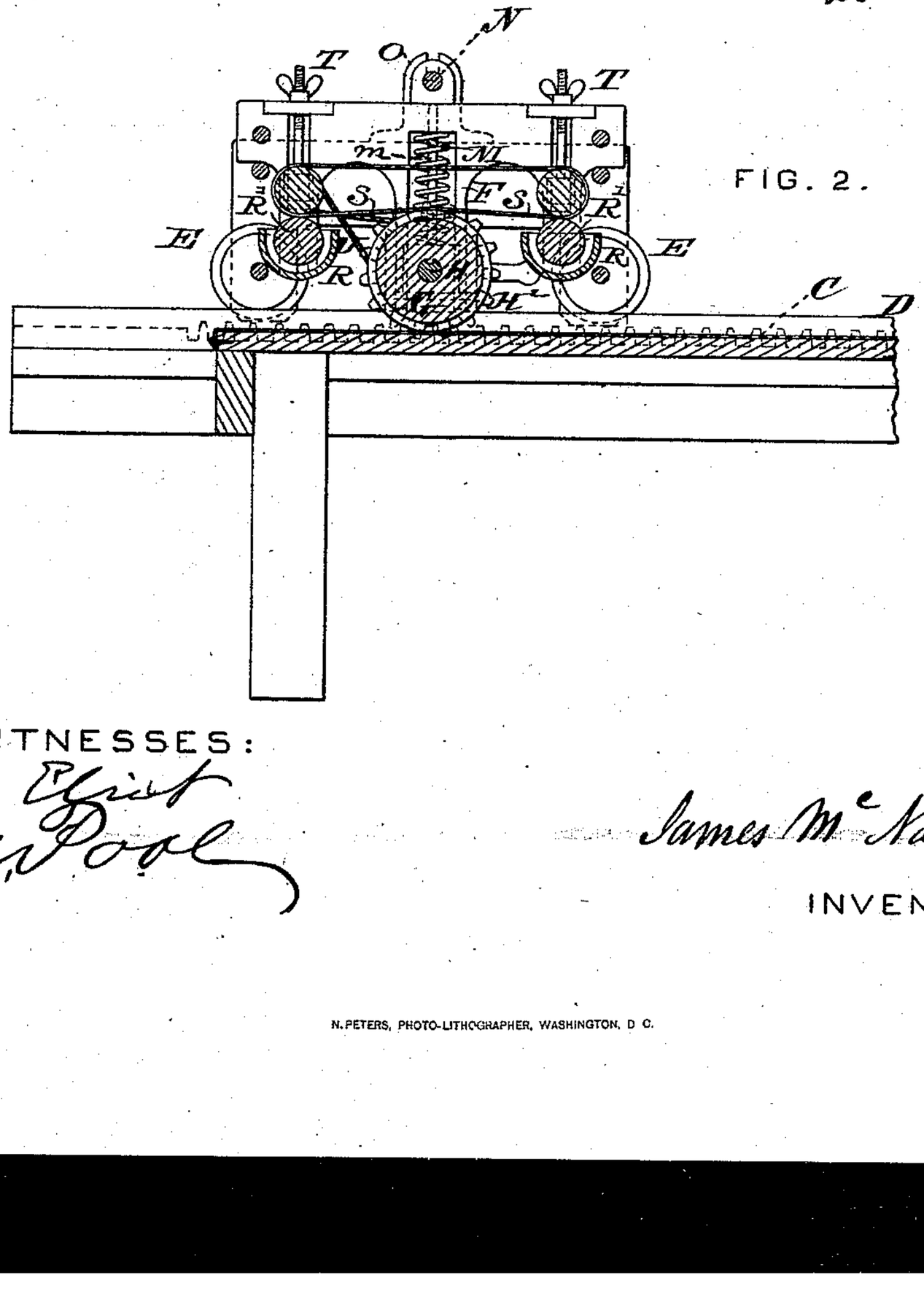


FIG. 2.



WITNESSES:

Benj. Chrisl

J. McPool

James McNaught

INVENTOR.

UNITED STATES PATENT OFFICE.

JAMES McNAUGHT, OF RAHWAY, NEW JERSEY.

IMPROVEMENT IN CHROMATIC-PRINTING MACHINES.

Specification forming part of Letters Patent No. **222,069**, dated November 25, 1879; application filed September 9, 1878.

To all whom it may concern:

Be it known that I, JAMES McNAUGHT, of Rahway, New Jersey, have invented certain Improvements in Apparatus for Printing Colors on Textile Fabrics, &c., of which the following is a specification.

This invention has for its object the printing or rolling on of colors on woven or other textile fabrics.

In the drawings, Figure 1 represents a plan of the apparatus as seen from above it, and Fig. 2 is a vertical and longitudinal section of the same.

At A is shown a portion of a table, which may be long enough to have an entire bolt of the fabric to be printed stretched and fastened upon it. Upon the opposite sides of the table are fastened two bars, as at B, to support racks, as at C, for moving the printing-carriage to and fro; or said racks may be supported on a frame independent of the table, if desired.

Upon ribs or flanges, as at D, extending up on each side of the rack-teeth, the wheels of the color-carriage rest and roll back and forth. Said wheels are shown at E, and they are mounted on axles, which pass through the sides of the carriage-frame F, which sides are held in proper position by rods passing through from side to side.

At G is the color-roll, which, as shown in Fig. 1, may be provided with grooves which would distribute the color in lines; but it may have any other configuration upon its surface, and it is mounted on an axis, as at H, which extends across from side to side of the machine, and is provided with a crank, as at K, for giving it motion; or it may be driven by a cord or chain belt, if desired. Said shaft is furnished with a groove to receive a feather attached to the color-roll to cause it to rotate with the shaft, and at the same time permit the roll to be shifted endwise on the shaft to vary its position on the fabric, or to permit another roll to be used when the pattern is changed. Said shaft also carries the toothed wheels H^2, which engage with the racks, and by which the printing-roll is moved to and fro over the goods during the operation of printing. The shaft of the color-roll also passes through the secondary heads or vertical pieces which form the carriage for the color rolls and boxes and the color-belt. These sides are shown at L, and they are so shaped as to rest between the rods that support the outer ends of the carriage, and also to carry the boxes of the printing-roll shaft near the ends of the roll itself; and these boxes are held down by springs, as at M, to cause a sufficient pressure to rest upon the color-roll to make it print.

A stem, *m*, projects upward from each of the boxes through the spring and plays in a suitable aperture in the framing, as indicated in dotted lines. The shaft or axis H being somewhat elastic, the sliding boxes permit the springs to communicate a yielding pressure to the color-roller. Said boxes also serve as guides to the printing-roll endwise, and they are controlled by a screw-rod, as at N, which is mounted in bearings on the upper edges of the carriage-frame F, as at O; and said rod passes through nuts, as at O′, on the color-frame, so it may be moved endwise by turning the screw by a crank, as at K^2.

The colors are placed in boxes or receptacles on the color-frame, as at R, in which are the first distributing-rolls, R′, which raise the colors to the endless belt, as at S, which is mounted on rolls that are held in bearings made adjustable by screw-rods and wing-nuts, as at T, so that a greater or less amount of color may be taken by the belt to the printing-roll. Said color-belt is caused to travel by a small belt, as at U, from one end of the printing-roll to one of the rolls that carry the color-belt, and thereby causes the color-belt to move in the same direction as the top of the printing-roll and at the same speed.

Having thus briefly described the apparatus, its operation will be easily understood.

The fabric, if of wool or very thick, when subjected to the pressure of a roller, as in this case, has a constant tendency to creep or be shoved forward in front of the roll. Consequently, by my method of operating this apparatus I fasten the fabric to be printed upon the table A by gumming the surface of the table with a sticking gum of some sort, but one that will not dry quickly; and I then spread the fabric thereon. Then the roll for printing is adjusted to its proper position, and the color-belt is adjusted, when, by turning the

crank, the carriage is caused by the rack and pinions to move to the other end of the table, and the printing-roll is rotated at the same time, and may be run back and forth, if desired; or it may be shifted to a new place endwise, as described.

I therefore claim—

The combination, with the table having the racks C and tracks D, of the color-roll carriage having wheels E, traveling upon said tracks; the axle or shaft H, journaled in opposite ends of the carriage, carrying the toothed wheels H^2, which engage with the racks on the table, and adapted to receive at one end a crank, or to connect with other means of rotation; the color-roll G, feathered upon said shaft and adapted to move longitudinally thereupon; the inking-roll carrier having sides L, supporting the spring-actuated boxes of the color-roll, and having at their upper edges the fixed nuts O′; the screw-rod N, passing through said nuts and having its opposite ends journaled in the ends of the color-roll carriage, and suitable means for turning said screw-rod, substantially as described.

JAMES McNAUGHT.

Attest:
BOYD ELIOT,
T. C. BRECHT.