

(No Model.)

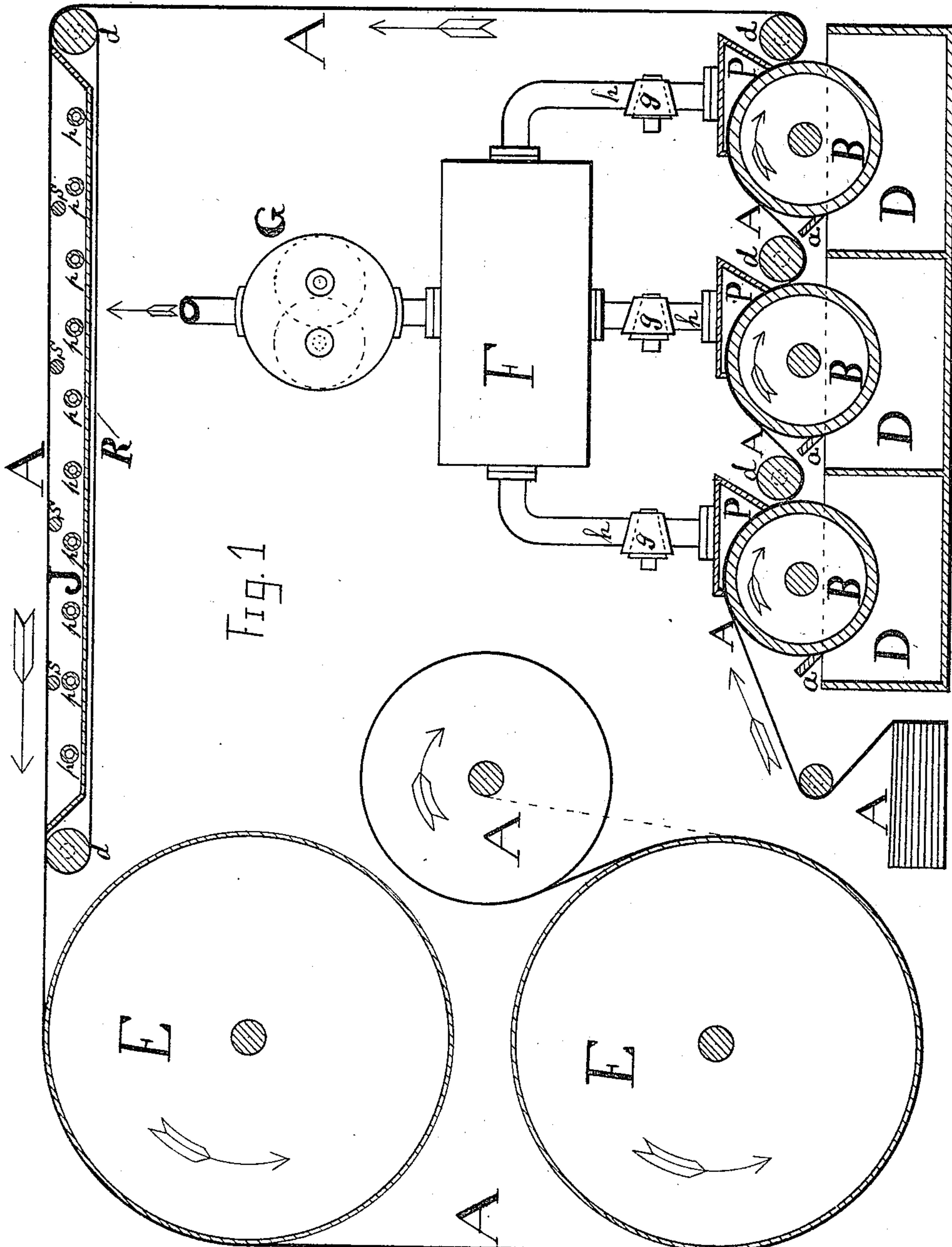
2 Sheets—Sheet 1.

J. SHINN.

MACHINE FOR PRINTING WOVEN FABRICS.

No. 440,750.

Patented Nov. 18, 1890.



WITNESSES.  
John Dohman, Jr.  
James P. Dohman

INVENTOR.  
John Shinn.

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Fig. 2

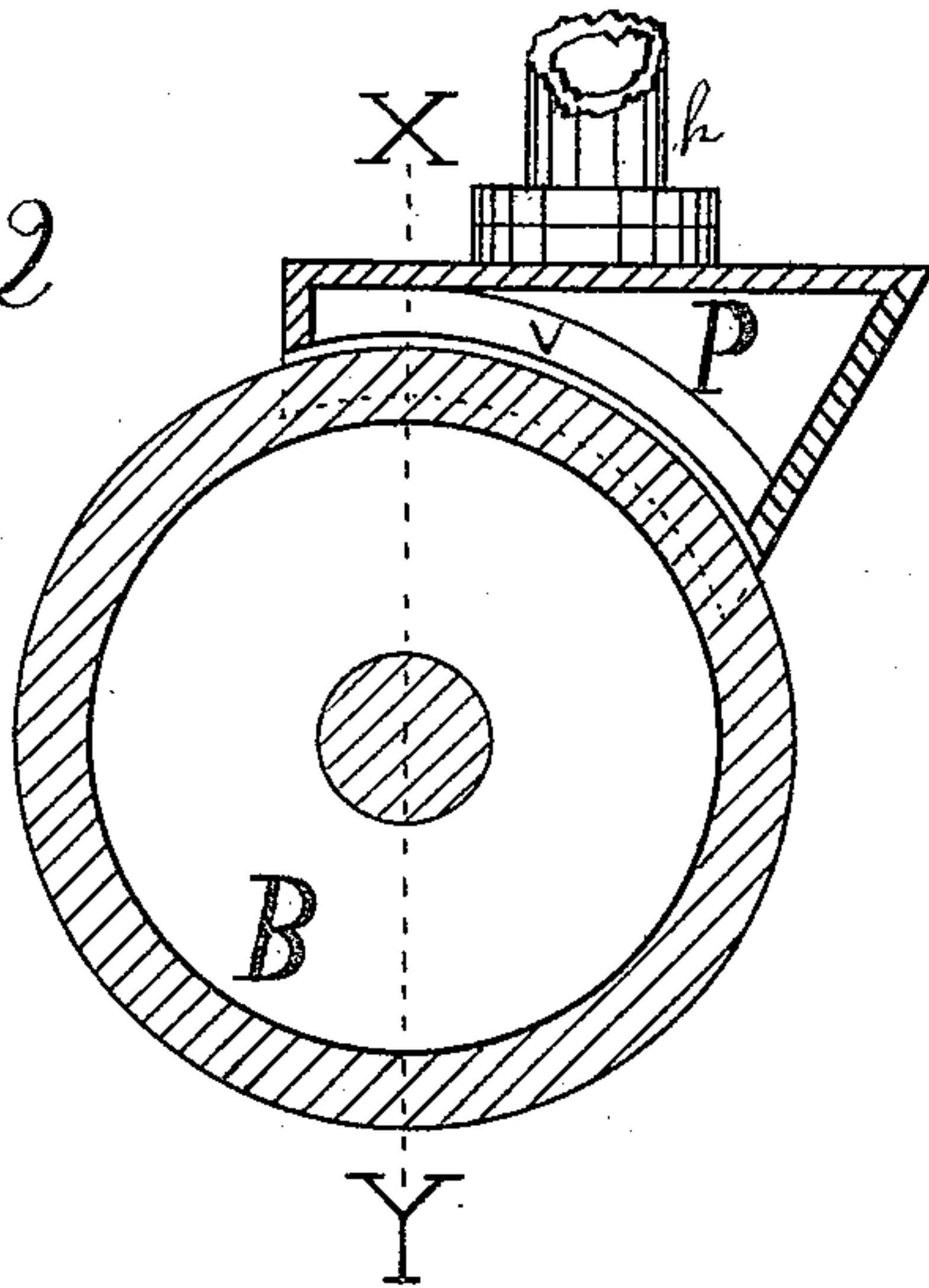
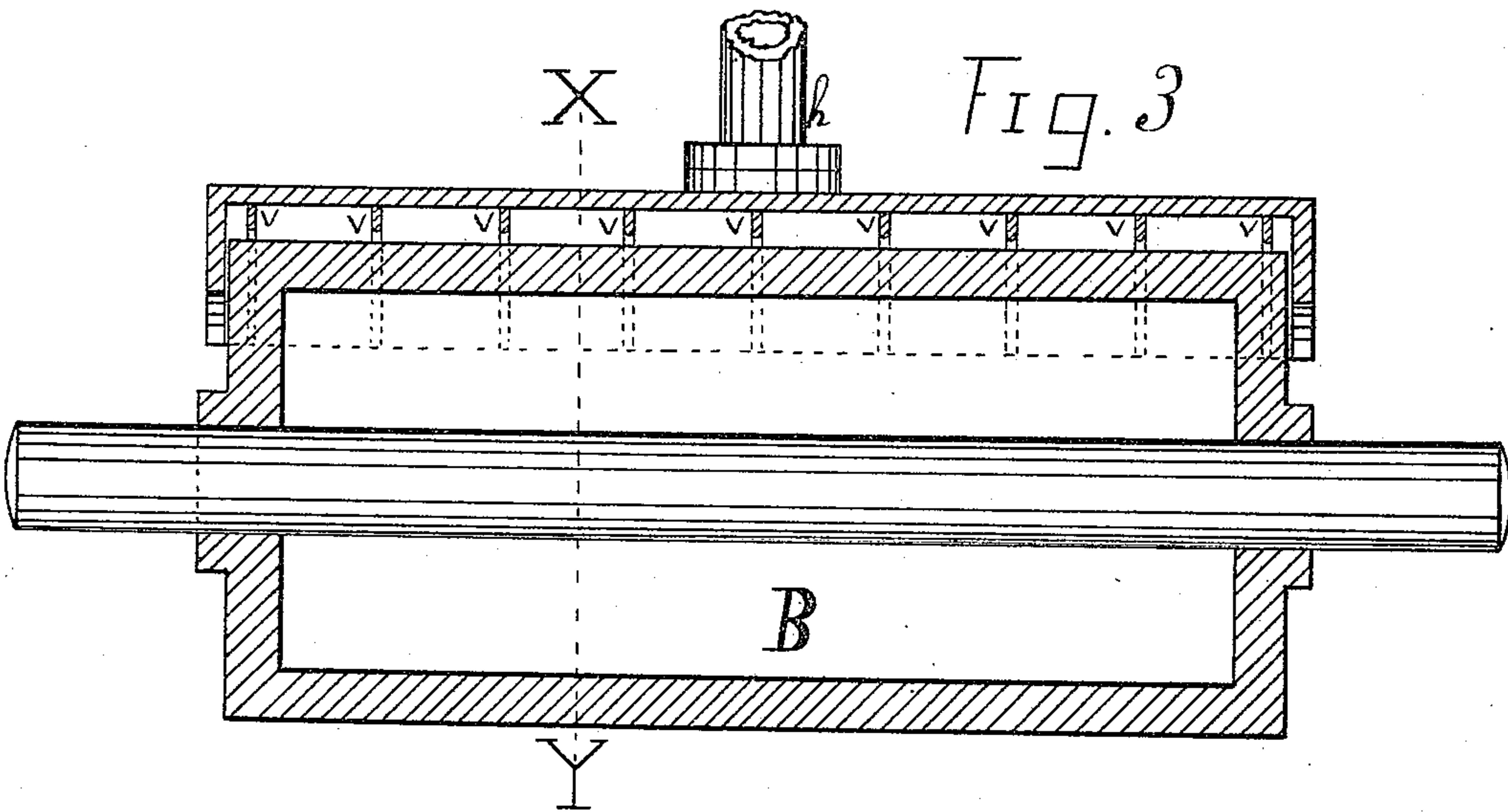


Fig. 3



WITNESSES.

John Dolman, Jr.  
James P. Dolman

INVENTOR.

John Shinn.



# UNITED STATES PATENT OFFICE.

JOHN SHINN, OF ROXBOROUGH, ASSIGNOR OF ONE-HALF TO WILLIAM B. KEEFER, OF PHILADELPHIA, PENNSYLVANIA.

## MACHINE FOR PRINTING WOVEN FABRICS.

SPECIFICATION forming part of Letters Patent No. 440,750, dated November 18, 1890.

Application filed July 31, 1890. Serial No. 360,468. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SHINN, a citizen of the United States, residing at Roxborough, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Machines for Printing Woven Fabrics, of which the following is a specification.

My invention relates to machines for printing heavy woven fabrics—such as carpets, rugs, horse-blankets, lap-robies, plush and other pile fabrics, cut or uncut; and it consists in combining with an engraved roll a suction-box, by means of which suction the air is drawn from the fibers of the fabric and coloring-matter drawn through to print or color the fabric at such places as the engraved print-roller shall place the coloring-matter. I attain these objects by the mechanism illustrated in the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal and sectional elevation, showing in section parts of a machine for printing three colors and constructed according to my invention. Fig. 2 is a cross-section of a print-roller and suction-box, taken on the line X Y of Fig. 3. Fig. 3 is a longitudinal section of a print-roller and suction-box, taken on the line X Y of Fig. 2.

Similar letters refer to similar parts throughout the several views.

A represents the fabric; B, the engraved print-roll; D, the color-box, and *a* the “doctor.” These rolls, boxes, and doctors are constructed in the usual manner for fabric-printing machines. The print-rollers, color-boxes, and doctors are arranged in a suitable frame and placed, one leading the other, on a horizontal line, as shown in the drawings.

P is a suction-box. This box should be made of brass and have a series of ribs V V. (See Figs. 2 and 3.) These ribs should be made of cold-rolled brass and smooth on the lower edge. The ends of the suction-box extend over the ends of the engraved print-roll. These ends should be a good fit, but not air-tight. From the top of each suction-box is a pipe *h* having a stop-cock *g*.

F is an air-tight box.

G is an exhaustor such as used for pumping

air. *d d* are carrying-rollers and should be “spiked.” The carrying-rollers on the print-rollers are driven by spur-gears from the shafts of the print-rollers, and the roller to the extreme right drives by a chain belt the roller above it, and that roller drives the upper one on the left by a chain belt.

R is an endless wire apron, the top part running on rollers S S. This wire apron and carrying-rollers should be made of brass.

J is a metal box, in which is placed a series of steam-pipes *p p*. If these pipes are to be used for “steaming” the fabric, the pipes will be perforated with numerous small holes.

E E are drying-cylinders, which are constructed and operated in the usual manner to dry printed fabrics.

The operation of my improved printing-machine is as follows: The cloth to be printed moves in the direction indicated by the arrows, Fig. 1, as also do the engraved rollers, as indicated by the arrows on them. The engraved rollers B will raise coloring-matter in the engraved parts, and as the color in the engraved parts of the roller gets under the suction-box P the exhaustor G will by the pipe *h* draw or suck the air from the fabric under the box P. The ribs V V prevent the fabric from rising from the roller B, and as the air is drawn from the fibers of the fabric the coloring-matter will take the place of the air and be absorbed by the capillary attraction of the fibers, the suction on the box P being regulated by the stop-cock *g* in pipe *h*. The fabric passes from print-roller to print-roller and receives such number of colors as there are rollers and the design requires, and any number of colors may be used, as desired, or a design calls for. After printing, the cloth is carried by the wire-cloth apron R over the pipes *p p* and is steamed or dried, as the case may be. Some colors are made brilliant without steaming.

If pile fabrics are to be printed, I prefer to run the pile-face against the face of the print-roller, and the color will be sucked through to the back, making a print as deep as the pile and without crushing down the pile, and thereby make an imperfect print.

It is obvious that my invention may be used to print on thin fabrics and the colors be

taken from the engraved rollers B by the affinity the fibers of the fabric have for the coloring-matter, the suction-box not being required with thin fabrics.

5 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for printing woven fabrics, the combination of an engraved roll, a suction-box, and a carrying-roller *d*, as shown, 10 described, and for the purpose specified.

2. In a machine for printing woven fabrics, the combination of an engraved roll and a

suction-box provided with a series of ribs V and a carrying-roller *d*, as shown, described, 15 and for the purpose specified.

3. In a machine for printing woven fabrics, the combination of a color-box, a doctor, an engraved roller, and a spiked carrying-roller *d*, as shown, described, and for the purpose 20 specified.

JOHN SHINN.

Witnesses:

JOHN DOLMAN,

JOHN DOLMAN, Jr.