

(No Model.)

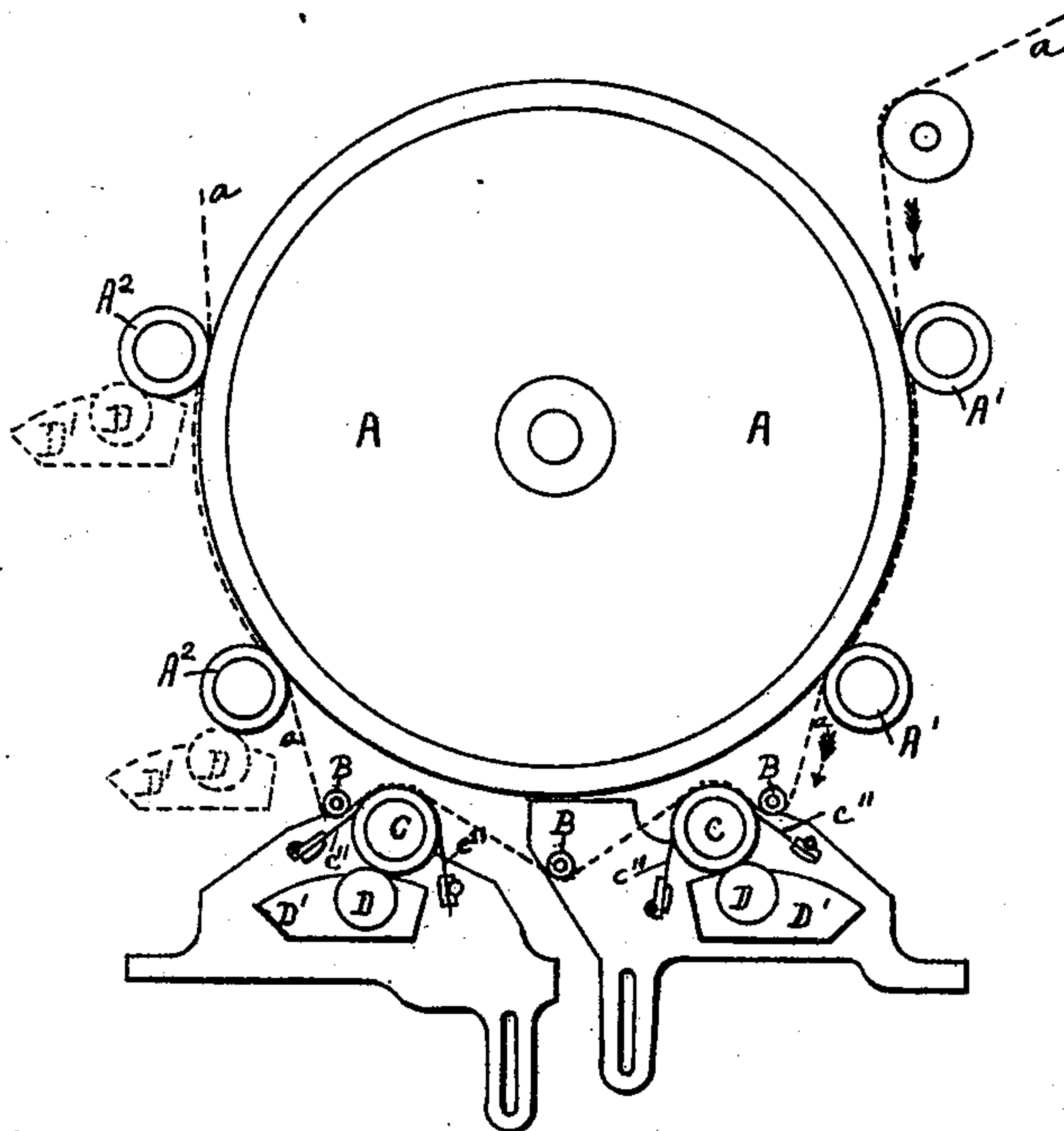
2 Sheets—Sheet 1.

J. BLAIR.
CALICO PRINTING MACHINE.

No. 583,839.

Patented June 1, 1897.

F I G. 1.



WITNESSES:

P. W. Wright
A. C. Connor

INVENTOR

James Blair,
BY
Horton and Horton
his ATTORNEYS

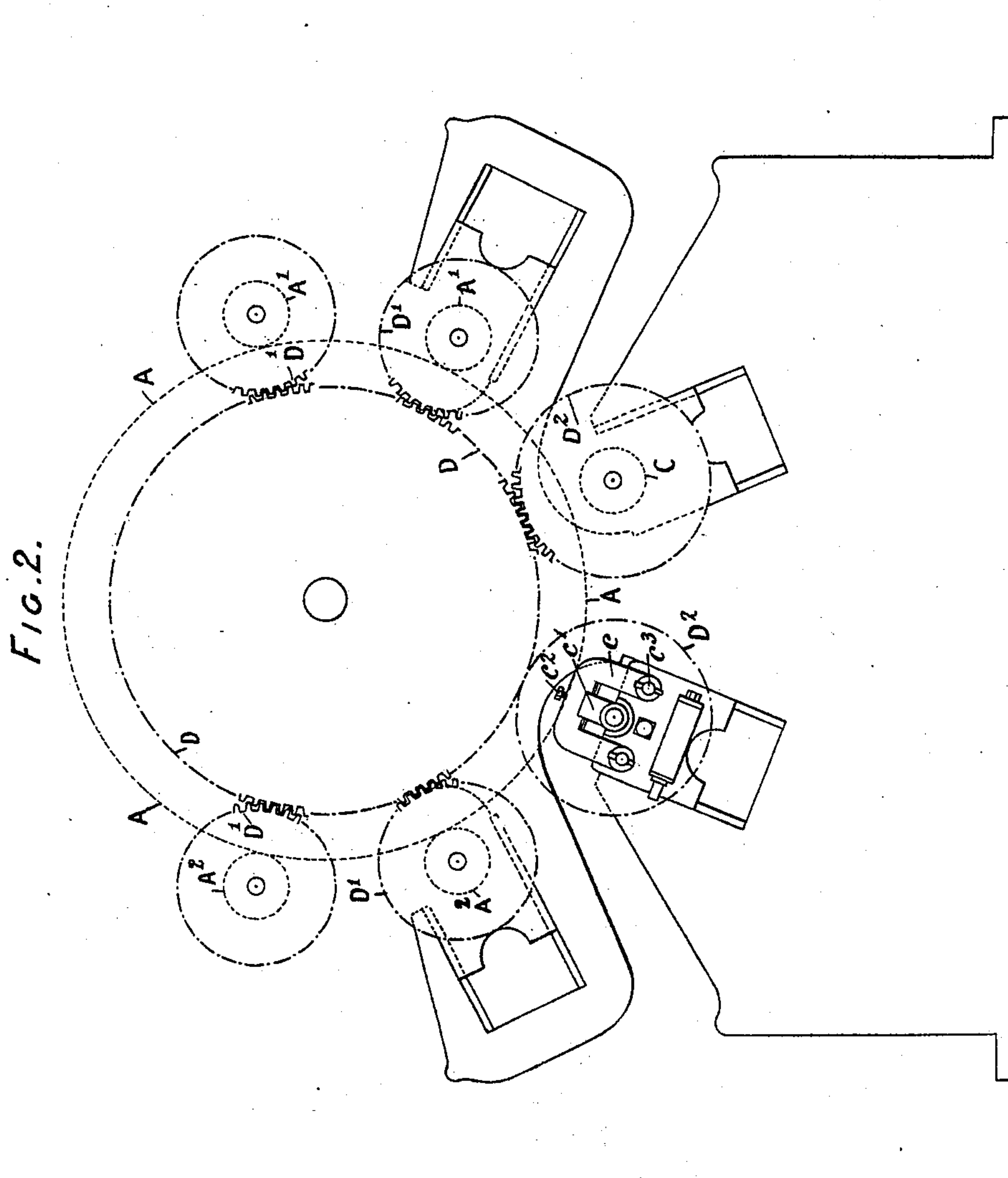
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UNITED STATES PATENT OFFICE.

JAMES BLAIR, OF LENNOXTOWN, SCOTLAND, ASSIGNOR TO THE EDDYSTONE MANUFACTURING COMPANY, OF EDDYSTONE, PENNSYLVANIA.

CALICO-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 583,839, dated June 1, 1897.

Application filed July 24, 1896. Serial No. 600,368. (No model.)

To all whom it may concern.

Be it known that I, JAMES BLAIR, a subject of the Queen of Great Britain and Ireland, and a resident of Lennoxtown, Stirlingshire, Scotland, have invented a certain new and useful Improved Means for Printing on Calico and other Web Fabrics, of which the following is a specification.

The objects of my invention are to produce shaded, clouded, and imitation woven effects on web fabrics, either alone or in combination with ordinary pattern effects. This is effected by passing the traveling web fabric over one or more engraved printing-cylinders supplied with colors in the ordinary way, which are not in contact with the "bowl" or usual pressure surface of the machine, and which cylinders may rotate in either direction.

Referring to the drawings, which form a part of this specification, Figure 1 represents a diagrammatic view of a cylinder printing-machine as fitted in accordance with my improvements, while Fig. 2 represents a similar view drawn to a slightly larger scale, showing the arrangement of driving-gearing.

The fabric *a* to be printed with its usual backing is conveyed to the printing-machine in the ordinary manner, and in order that the fabric *a* may travel at the same rate of speed as the bowl *A* it is passed between the same and the ordinary rollers *A'*, which may be plain or engraved and may or may not be supplied with color. The bowl *A* is mounted on a shaft free to turn in bearings and is driven by rollers *A'*. The fabric *a* is then carried outward from the bowl *A* over a loose guiding-roller *B*, from whence it is conveyed into printing contact with one or more engraved printing-cylinders *C*, which are not in contact with the bowl *A* and may rotate in either direction; and when more than one printing-cylinder *C* is used to produce the shaded effect a series of loose rollers *B* are used. These printing-rollers *C* are supplied with color in the ordinary manner by the color-roller *D*, rotating in the color-box *D'*, *c''* being the usual doctors.

The printing-cylinders *C* are carried in

usual adjustable box-bearings on the machine-frame and so connected through gearing with the moving parts of machine as to rotate at a greater or less circumferential speed than the bowl *A* when both run in corresponding directions and at any desired speed when the printing-cylinders *C* turn in the reverse direction to the bowl *A*, and thus cause the pattern on cylinders *C* to drag over the fabric *a* and deposit the color thereon in a shaded manner, instead of forming a sharp impression, as in the ordinary method of web-fabric printing. After being so printed the web fabric *a* is passed between one or more nip-rollers *A²* and the surface of bowl *A*, the rollers *A²* being plain or engraved and without being supplied with color if no further effect is to be produced; but further printing may be effected in the ordinary manner when a combination of effects is desired by supplying these rollers with color in the ordinary manner, as indicated in dotted lines.

In Fig. 2 the arrangement of gearing is shown consisting of a spur-wheel *D* and toothed wheels *D'* on each of the rollers *A'*, while toothed wheels *D²*, of greater diameter than the wheels *D'*, are mounted on the cylinders *C*, so that in this arrangement the fabric *a* travels quicker than the cylinders *C*. The mandrel of engraved rollers *C* is retained in proper position by means of a bridge-piece *c*, adjustable brass bearing *c'*, pinching-screw *c²*, and washers and tapered pins at *c³*.

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

In a cylinder printing-machine, the combination of the bowl, with an engraved roller mounted to be out of contact with the bowl, and gearing adapted to rotate the roller differently from the rotation of the bowl, substantially as and for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES BLAIR.

Witnesses:

THOMAS LINDSAY,
JOHN SIME.