

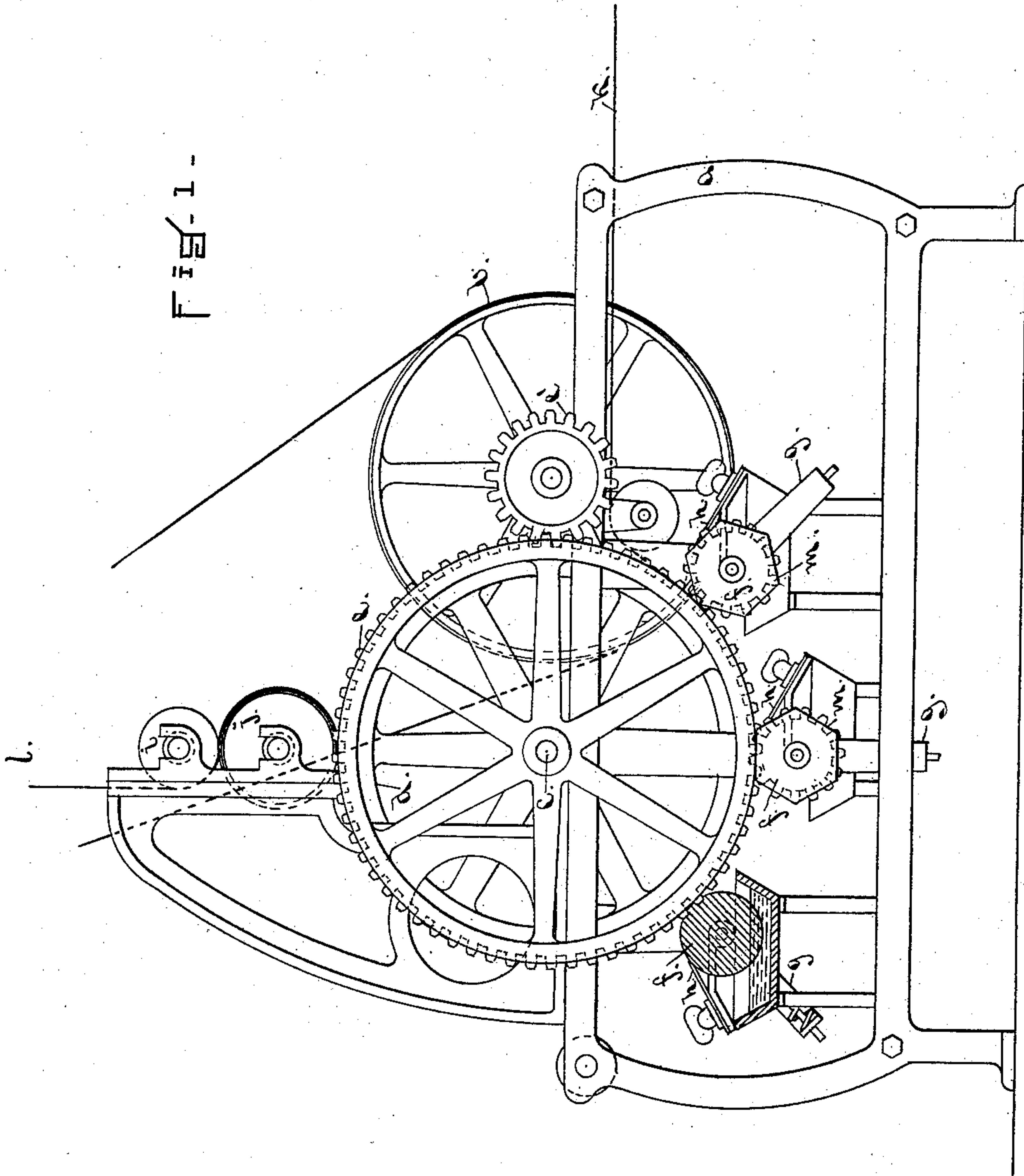
(No Model.)

2 Sheets—Sheet 1.

E. J. STEPHENS.
YARN PRINTING MACHINE.

No. 338,314.

Patented Mar. 23, 1886.



WITNESSES
Robert Krishman
George H. Crocker

INVENTOR
Edward J. Stephens

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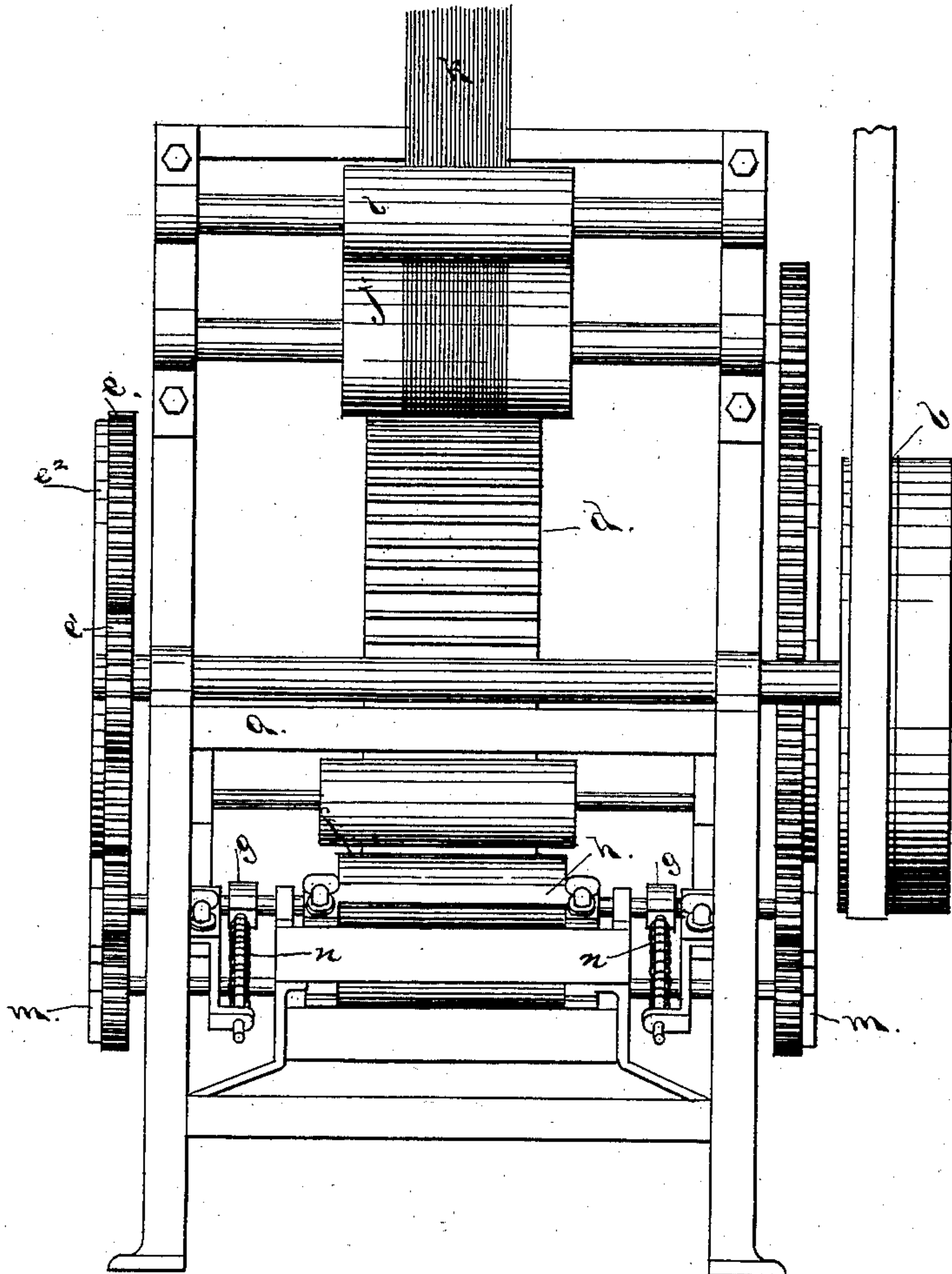


Fig. 2.

WITNESSES

Robert Crushman
George H. Crocker

INVENTOR

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UNITED STATES PATENT OFFICE.

EDWARD J. STEPHENS, OF PAWTUCKET, RHODE ISLAND.

YARN-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 338,314, dated March 23, 1886.

Application filed October 29, 1885. Serial No. 181,234. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. STEPHENS, of the town of Pawtucket, county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Yarn-Printing Machines; and I do hereby declare that the following specification, together with the accompanying drawings, is a description sufficiently clear to enable any one skilled in mechanics to make and use the same.

In the drawings, Figure 1 represents a side view of the machine; Fig. 2, a front view.

The purpose and object of my invention is the production of a machine to print yarns or fabrics in consecutive colors without variation or inequality in color or figure, perfectly automatic, and with entire certainty. This end is achieved in a machine built as described in this specification, and illustrated in the drawings herewith.

In Fig. 1, *a* is the frame of machine.

b is the driving-pulley; *c*, a shaft on which is the printing-drum *d*, the face of which is shown in Fig. 2. This shaft is driven by gear *e* from small gear *e'*, which is on shaft with driving-pulley *b*.

f f f are ink-rolls, supported by yielding bearings *g*.

h h h are "doctors" for scraping all superfluous ink from rollers.

i and *j* are plain rolls for keeping even tension on yarn.

k is yarn from beam or spool, passing between printing-drum *d* and ink-rollers *f*, and led away to dry-room at *l*.

The ink-rollers are revolved by means of gears from gear *e*, and the hexagonal cams *m*, forming part of these gears, operate by being in contact with a flange, *e'*, made with or connected with gear *e*, said cams being so arranged as to allow the ink-roller *f* to come in contact with any desired points on the printing-drum *d*. The inking-rolls *f f f* have their axles set in bearings set in springs *n*, thus allowing the vibratory motion caused by the cams.

In the operation of the machine, which is driven by a belt from pulley *b*, the several color-rollers will ink those parts of the printing-cylinder which are allowed to come in contact with them by the cams, and the yarn or fabric passing between the printing and inking rolls receives the impression and color desired. Any number of colors can be printed by increasing or decreasing the number of ink-rolls, and any kind of pattern by substituting a different printing-roll.

Hitherto machines have been patented and used by myself (see Letters Patent of the United States No. 83,103, dated October 13, 1868) which printed the yarn by passing between two printing-rollers, each printing-roll receiving the ink from independent ink-rolls, the alternate motion of which was caused by cutting the gear-teeth to a variable depth, thus allowing it to approach and retire from the printing-roll. In my improved machine I obtain this motion by means of cams *m*—a more simple and effective movement.

By means of this improved machine more distinct colors are obtained and with less blending of adjacent ones than by the old process.

Therefore what I claim as my invention, and desire to secure by Letters Patent, is—

1. A yarn or fabric printing machine using several colors, consisting of frame *a*, printing-drum *d*, ink-rolls *f*, and yielding bearings *g*, controlled by cams *m*, combined substantially as described, and for the purpose specified.

2. In a yarn or fabric printing machine, the combination of the fluted drum and ink-roll, as described, to print by pressing the ink-roll against the yarn or fabric while passing around the revolving fluted drum, substantially as described.

EDWARD J. STEPHENS.

Witnesses:

ROBERT CUSHMAN,
GEORGE H. CROCKER.