

(No Model.)

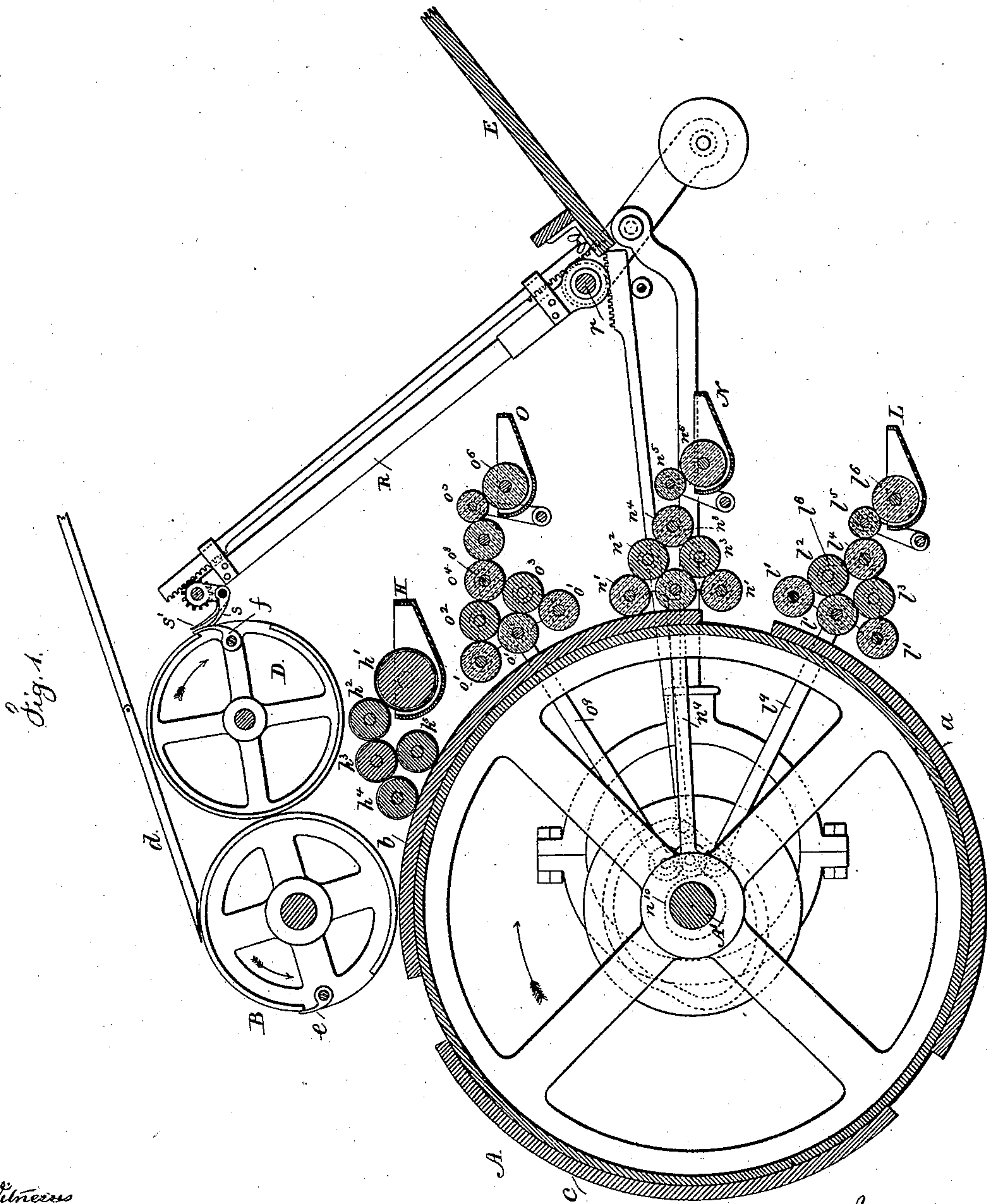
2 Sheets—Sheet 1.

W. SCOTT.

CHROMATIC PRINTING MACHINE.

No. 312,769.

Patented Feb. 24, 1885.



Witness

Chas H. Smith
J. Staib

Inventor

Walter Scott
per Lemuel M. Perrell atty

(No Model.)

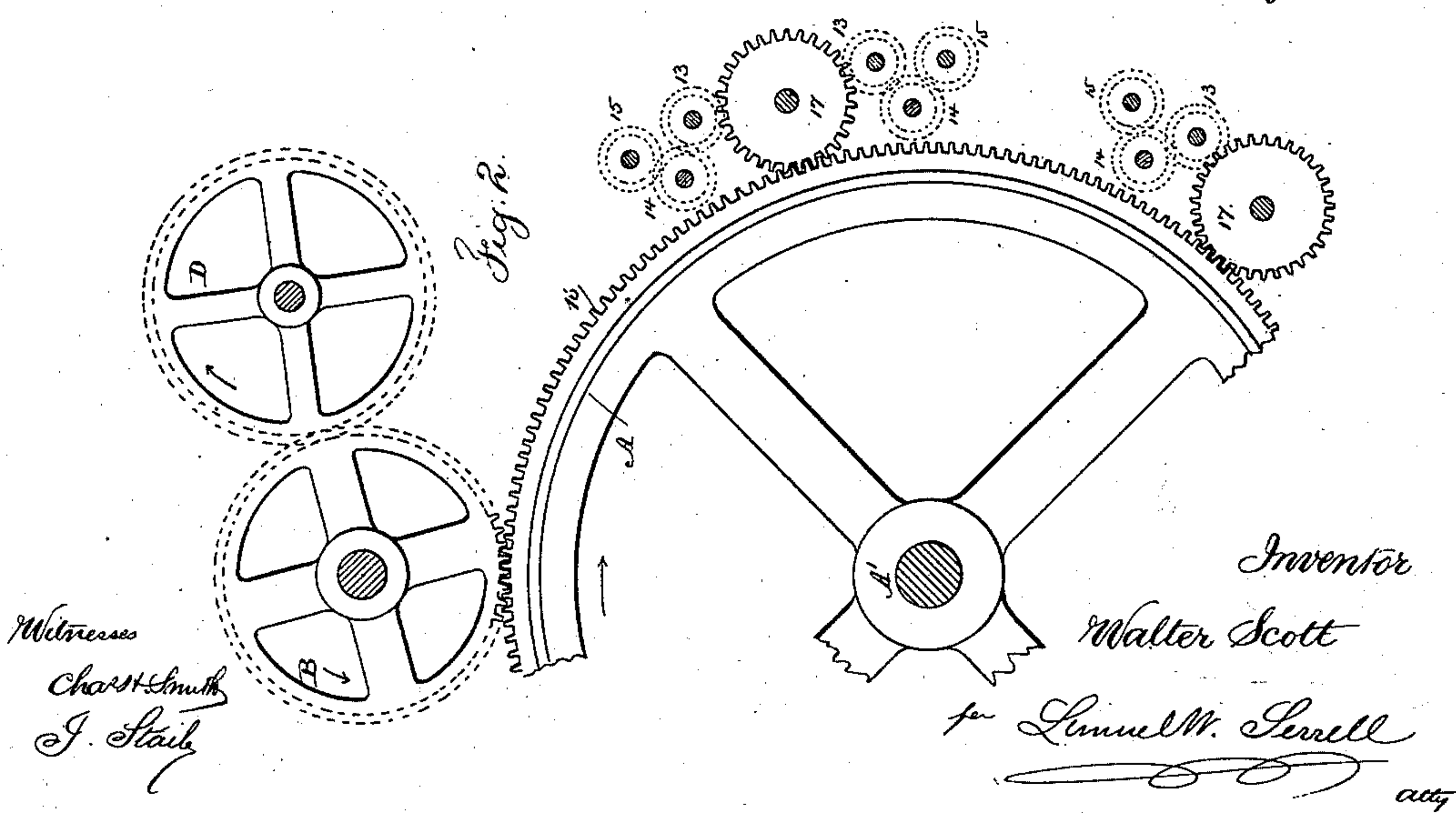
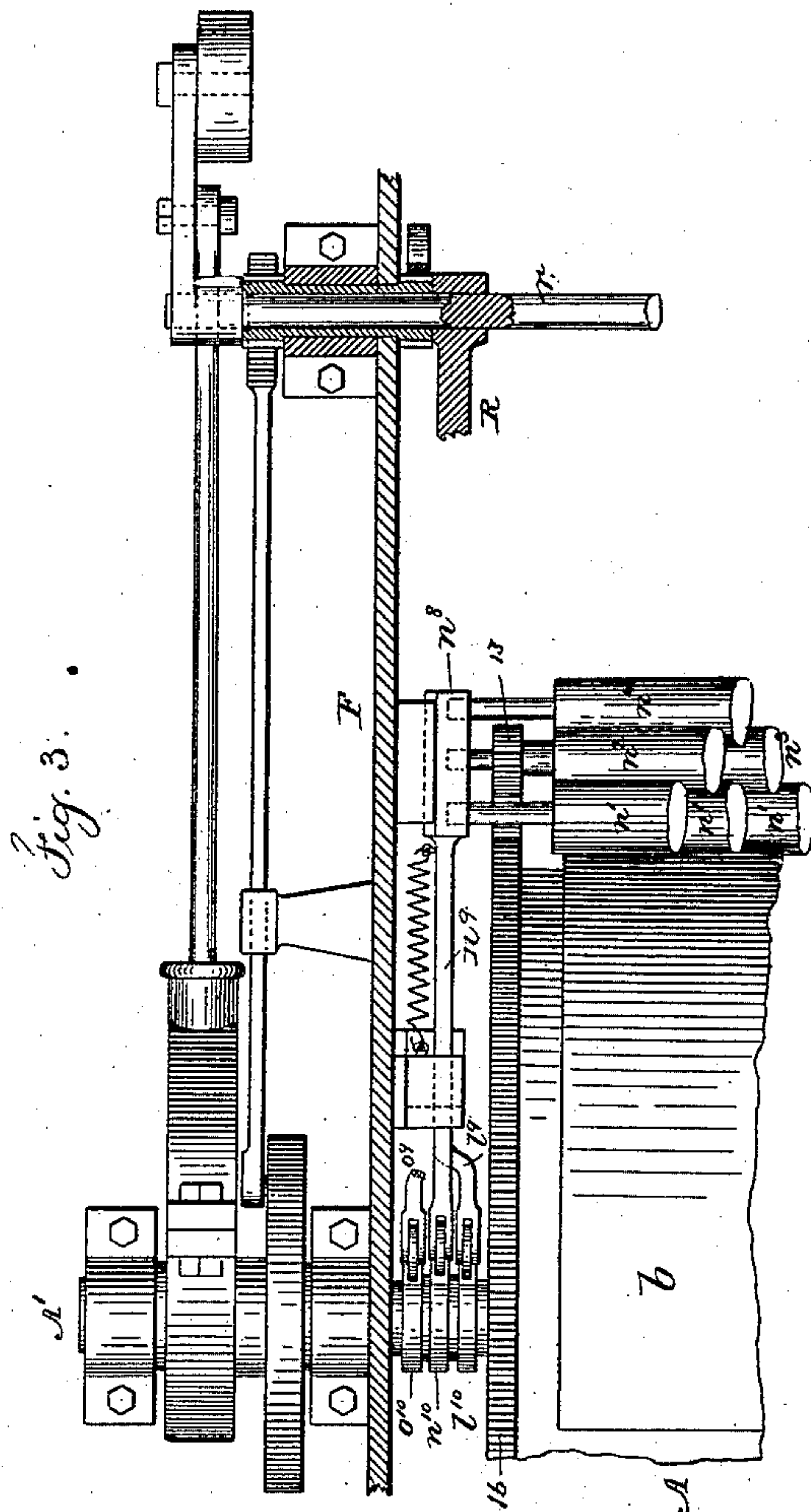
2 Sheets—Sheet. 2.

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CHROMATIC PRINTING MACHINE.

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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

CHROMATIC-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,769, dated February 24, 1885.

Application filed December 28, 1883. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Chromatic-Printing Machines, of which the following is a specification.

My press is adapted to printing two or more colors upon one sheet, or to printing two or more separate impressions each rotation of the printing-cylinder, and to wetting the printing-surface before the inking operation, as in lithographic or zincographic printing.

In the drawings, Figure 1 is a vertical section of the operative parts of the press. Fig. 2 illustrates the gearing that may be made use of in giving motion to the parts. Fig. 3 is a partial plan view indicating the positions in which the respective parts may stand in relation to the form-cylinder and frame.

The form-cylinder A is continuously revolved, and it may have two, three, or more printing surfaces or forms. I have shown three forms, *abc*. These may be types, stereotypes, zinc plates, or lithographic stones, or any other form of printing-surface.

B is the impression-cylinder, of ordinary character, and it is of a size to revolve once for each printing-surface, and D is a second or delivery cylinder. If a web of paper is printed from, it may be supplied to this cylinder B or delivered in any suitable manner; but my press is specially adapted to use with sheets fed by hand from the feed-board *d* to the grippers *e*, the sheets being taken away and laid upon the table E. If two or more impressions are made upon each sheet, the grippers *e* will retain the sheet during the two or three revolutions of the impression-cylinder, and when the sheet has been entirely printed the grippers *e* are opened by any suitable automatic means at the time the grippers *f* of the delivery-cylinder D are closed upon the advancing end of such sheet, whereby the sheet will be taken off the impression-cylinder B, and the grippers *e* will take a fresh sheet from the feed-board while the printed sheet is being carried to the delivery-apparatus, hereinafter described.

For lithographic or zincographic printing, I make use of a water-trough, H, with a train of rollers, *h' h² h³ h⁴ h⁵*, of absorbent material, to wet the printing-surfaces that pass beneath

them. With stereotypes or types these wetting-rollers will not be needed.

I provide as many ink-troughs as there are separate colors or inks to be used. I have shown three ink-troughs, L N O. The inking-rollers *l'* receive their ink from the rollers *l² l³ l⁴*, ductor *l⁵*, and fountain-roller *l⁶*. The other inking-rollers and intermediate rollers are in groups similarly arranged, one group for each ink-trough. Each group of rollers is in its end frames, the rollers *l' l² l³ l⁴* being in the frames *l⁸ o' o² o³ o⁴* in the frames *o⁸*, and *n', n², n³, and n⁴* in the frames *n⁸*. Said frames *l⁸ n⁸ o⁸* are guided in slides or supports on the inner surfaces of the frames F, and provided with arms *l⁹, n⁹, and o⁹*, respectively, that extend radially toward the shaft A' of the form-cylinder, and are provided with rollers, against which the cams *l¹⁰, n¹⁰, and o¹⁰* on the shaft A' act, respectively, so as to press the frames and rollers away from the printing-surfaces except when the proper surface to receive the given color is passing beneath the inking-rollers. If the printing-surface *a* is to give a blue impression, there will be blue ink in the ink-trough L, and the cam *l¹⁰* will allow the rollers *l' l² l³ l⁴* to run in contact with the surface *a* and lift the rollers *l'* out of contact with the surfaces *b* and *c* as they pass. So, likewise, the surface *b* will be inked with the black or colored ink from the trough N and rollers *n'*, and said rollers *n'* will be moved out of contact with the surfaces *a* and *c* by the cam *n¹⁰*. The surface *c* will be inked by the rollers *o'*, and such rollers will be moved out of contact with the surfaces *a* and *b* by the cam *o¹⁰*. In all instances springs are to be used to press the frames and rollers toward the surfaces to be inked, or vice versa; or cams may be used without springs. It will now be understood that the impression-cylinder can receive one sheet each revolution, and that one sheet will be printed on the surface *a*, the next on the surface *b*, and the third on the surface *c*; or else the sheet may be retained by the grippers *e* and receive three impressions—one from each surface *a b c*—in succession. In color-printing this will be a great convenience, as the register, when once adjusted, must always be perfect.

In order to take the sheet when printed, I

make use of the fly-frame R, composed of two arms upon the rock-shaft r, such arms being far enough apart to allow the sheet to swing between them as held by the grippers s s'.

5 Upon reference to Fig. 2 it will be seen that the middle inking-roller and the two adjacent rollers of each group are geared together, as at 13 14 15, so that all the rollers in each group will be revolved either by the gearing or by
10 surface-contact, and I apply a gear-wheel, 16, upon the edge of the form-cylinder or upon its shaft and the intermediate gears, 17, that give motion to the gears 13, and these gears are placed, as shown, so that the movement of
15 the frames and groups of rollers toward and from the printing-surfaces will not in any manner separate the gear-teeth; hence the inking-rollers will continue to revolve, and will be in motion in the proper direction when brought
20 into contact with the printing-surfaces, and the inking will be perfect instead of injured, as it would be if the inking-rollers were at rest when brought into contact with the moving printing-surfaces.

The fly-frame and grippers for conveying 25 away the printed sheet form the subject of a separate application filed December 28, 1883, Serial No. 115,826, and does not require to be further described here.

I claim as my invention—

The combination, with the groups of ink- 30 ing-rollers geared together, of a gear-wheel upon the shaft of the form-cylinder, and an intermediate gear-wheel to the inking-rollers, and mechanism, substantially as specified, for 35 raising the inking-rollers from contact with portions of the form-cylinder without the rotation of the inking-rollers being stopped, substantially as set forth.

Signed by me this 20th day of December, 40 A. D. 1883.

WALTER SCOTT.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.