(No Model.)

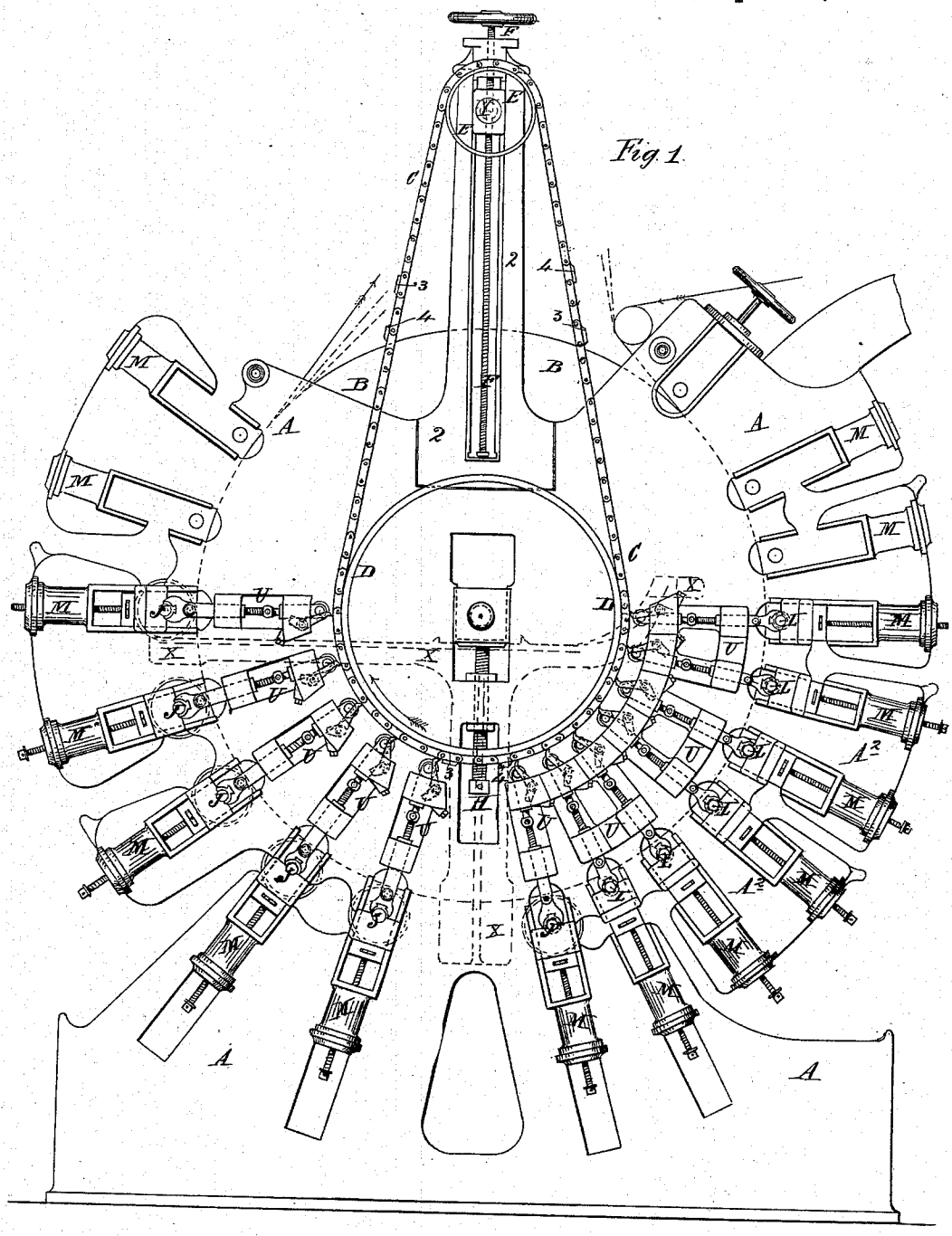
3 Sheets—Sheet 1.

J. KERR & J. HAWORTH.

MACHINE FOR PRINTING FABRICS.

No. 276,426. Patented Apr. 24, 1883.

Fig. 1.



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James F. Tobin
H. Turner.

Inventors:
James Kerr and
Joseph Haworth
by their Attorneys
Howson and Sons

N. PETERS. Photo-Lithographer, Washington, D. C.

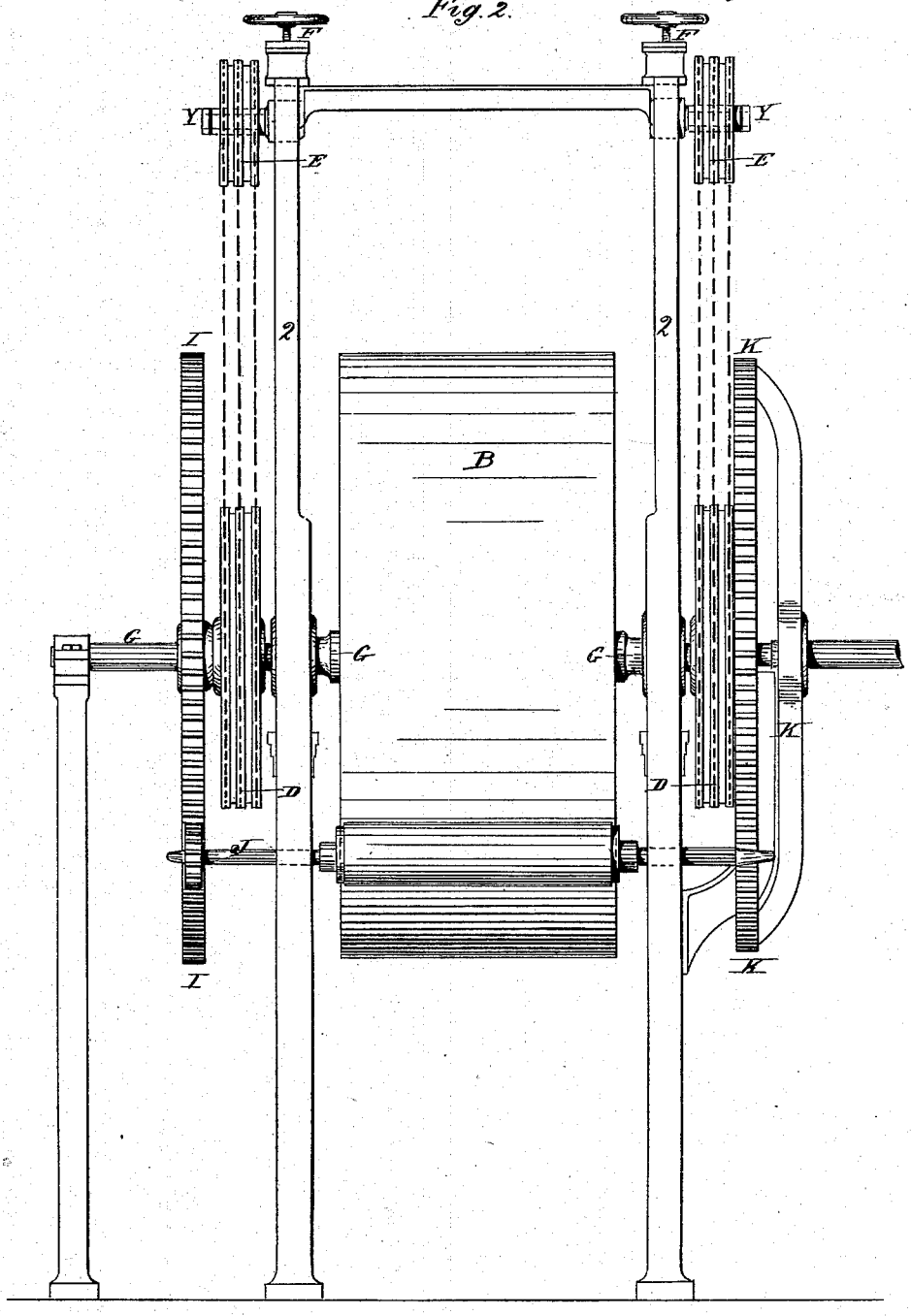
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Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

J. KERR & J. HAWORTH.

MACHINE FOR PRINTING FABRICS.

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FIG. 3.

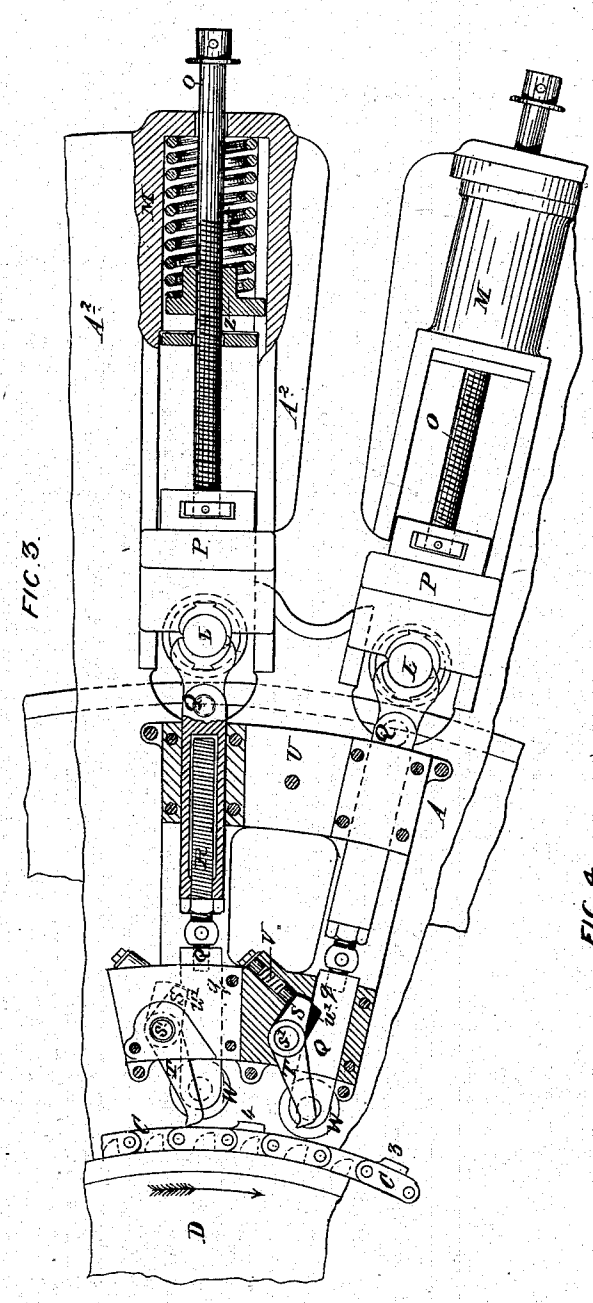
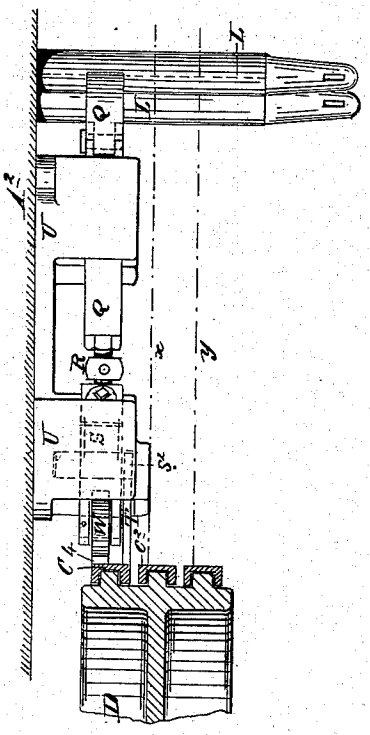


FIG. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES KERR AND JOSEPH HAWORTH, OF CHURCH, COUNTY OF LANCASTER, ENGLAND.

MACHINE FOR PRINTING FABRICS.

SPECIFICATION forming part of Letters Patent No. 276,426, dated April 24, 1883.

Application filed July 20, 1882. (No model.) Patented in England November 29, 1881, No. 5,203.

To all whom it may concern:

Be it known that we, JAMES KERR and JOSEPH HAWORTH, subjects of the Queen of Great Britain and Ireland, and residing at Church, in the county of Lancaster, England, have invented certain Improvements in Machinery for Printing Fabrics, (for which we have obtained a patent in Great Britain, No. 5,203, dated the 29th day of November, 1881,) of which the following is a specification.

Our invention relates to improvements in that class of printing machinery described in the United States Patent granted to us February 14, 1882, No. 253,718; and our invention mainly consists in combining with the main bowl and a series of printing-cylinders in movable bearings a pattern chain or chains for raising the printing-rollers out of action and bringing them into action at any desired intervals, as more fully described hereinafter.

In order that our said invention may be fully understood, we shall now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the annexed sheet of drawings, the same letters of reference indicating corresponding parts in all the figures.

Figure 1 is a side elevation, with gear-wheels removed and the chain-pulleys in outline, of a printing-machine to which our invention is applied. Fig. 2 is a front elevation of the same, but in which only one of the printing-rollers is represented. Fig. 3 illustrates the details of the spring-boxes and locking-off arrangements applied to each of the printing-rollers provided according to our invention. Fig. 4 is a side view of the lower part of Fig. 3.

A is the main framing of the printing-machine.

B is the main bowl, round which the fabric to be printed passes.

C is the chain, having upon it projections for removing the printing-rollers and unlocking them, as required.

D and E are chain-pulleys and sprocket-wheels, the wheels D D being keyed upon the center or shaft G of the main bowl B, and the pulleys E E revolve loosely upon the studs Y, which are arranged in blocks sliding in guides in the brackets 2, being adjusted therein by means of the screws F, so that chains of various lengths may be employed.

H is a screw for adjusting the main bowl.

I is a spur-wheel upon the shaft G, which works into the pinions on the ends of the mandrels J.

K is another wheel, which works into the pinions upon the ends of the mandrels L.

We will now describe the devices with which each roller is provided to cause it to be brought into and raised out of action by the projections on the chain or chains. We will describe it with regard to one roller, it being understood that each roller provided according to our invention has like devices connected with it at each side.

The printing-rollers L or J are carried by their mandrels in blocks P at each side of the machine, where the said blocks slide in guides in the portions A^2 of the frame-work, which extensions carry a spring-box, M, for each roller, containing a steel spiral spring, N, pressing upon a collar, Z, carried by and adjustable upon the screw-rod O, fixed to the block P. A compound bar, Q, is adjustable in length by the screw R, and bears at its outer end against the mandrel L or J, its lower end terminating in a short rod, *q*, sliding, together with the body part of the said rod Q, in guides in the bracket-pieces U, carried by the framing of the machine. The said bracket-piece also carries a pin, *s'*, upon which turns a bell-crank lever, S T, the end S forming a locking-catch for engaging with a notch, *u'*, cut in the rod *q*, the other end, T, being in the path of the projections 3 upon the chain C. The rod *q* carries a roller, W, in the path of the projections 4 on the said chain. A spring and presser piece, V, presses the catch-piece S within the notch *u'*. It will be understood that each roller-mandrel is provided with similar devices at each end. The chains C carry projections 3 and 4, the projections 3 being in the path of the lever-arms T, and the projections 4 being in the path of the rollers W.

The action of the machine is as follows: As the projections 3 come into contact with each of the lever-arms T the catch S of that arm is pressed against the spring V and released from the notch *u'*, and the spring N, by pressing upon

the nut Z, causes the block P to slide inward, and therefore the printing-roller to press with the required pressure (or nip) upon the fabric being printed, and as the projections 4 on the chain come into contact with each of the rollers W the rods Q press up the block P to remove the printing-rollers from the fabric when not required to print, the spring V pressing the catch or lock S T into the recess *w'* in the side of the bar Q, and holding the roller in its raised position until a projection, 3, on the chain again presses the catch T, and thus liberates the lock S. The spring N then again presses the printing-roller against the fabric, and prints until removed, as before, by another projection 4 coming into contact with the roller W. This action is repeated at each end of all the printing-roller mandrels. The distance between the projections 3 and 4 is adjusted to the requirements of the pattern being printed.

It is evident that one or any other number of chains may be used to carry any number of projections 3 4 at any distance apart, and that the chains may be used of various lengths, (by taking out or putting in links or by substituting fresh chains,) the blocks of the studs Y being adjusted to suit the lengths of chains employed.

We claim as our invention—

1. In a printing-machine, the combination of the main bowl and a series of printing-cylinders carried in movable bearings, with a pattern chain or chains furnished with projections for raising the said printing-rollers out of action and bringing them into action at any desired intervals, all substantially as set forth.

2. The combination of the main bowl of a printing-machine and a series of printing-cylinders carried in movable bearings, with a chain or chains furnished with projections for raising the said rollers out of action and bringing them into action, and an adjustable pulley or pulleys over which the chains pass, substantially as and for the purpose described.

3. The combination of the main bowl of a printing-machine and a series of printing-cylinders mounted in movable bearings, with pattern-chains, rods Q, acted on by said chains, springs N, and spring-catches S T, also acted on by said chains.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES KERR.
JOSEPH HAWORTH.

Witnesses:
ARTHUR C. HALL,
ALBERT E. HALL.