

(No Model.)

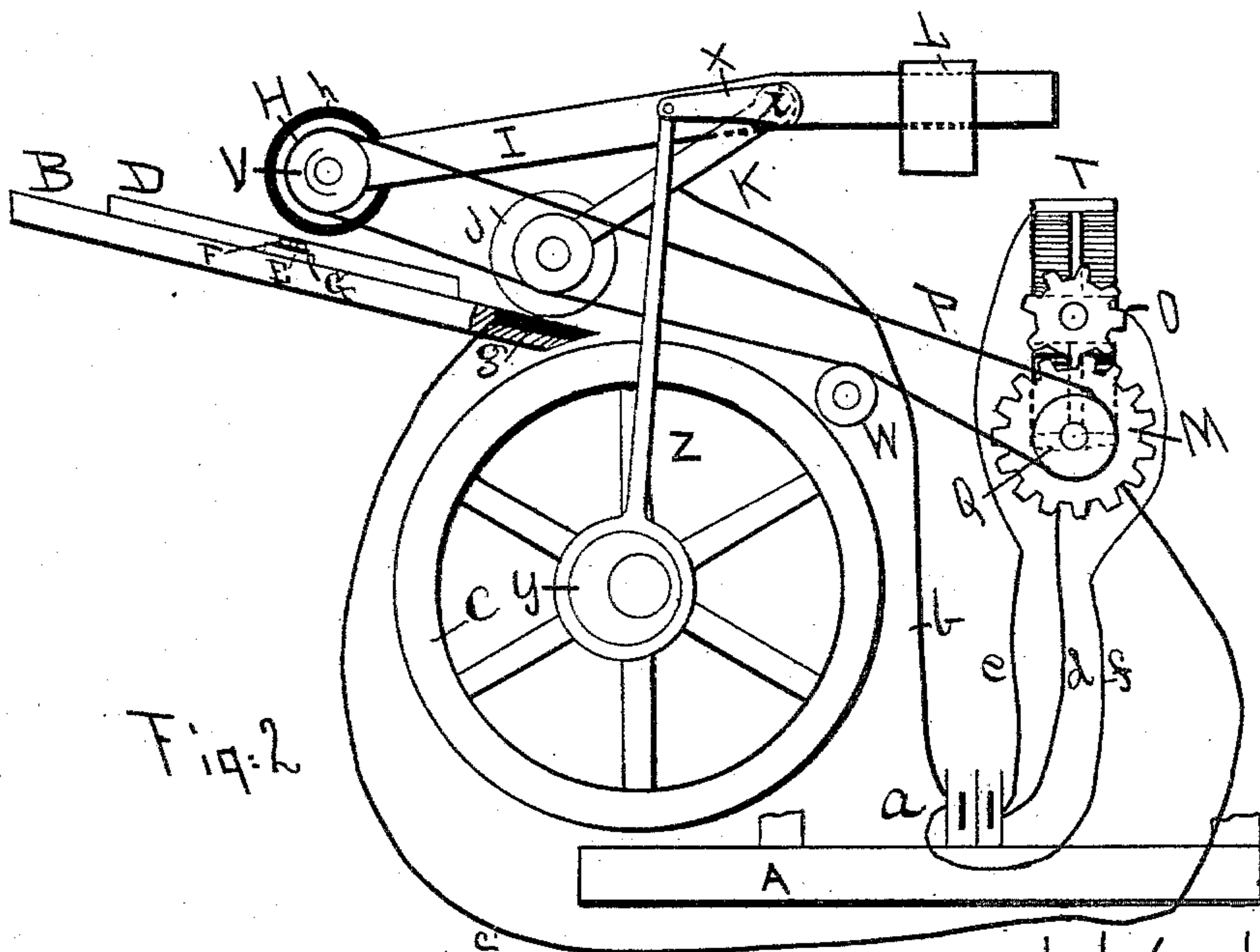
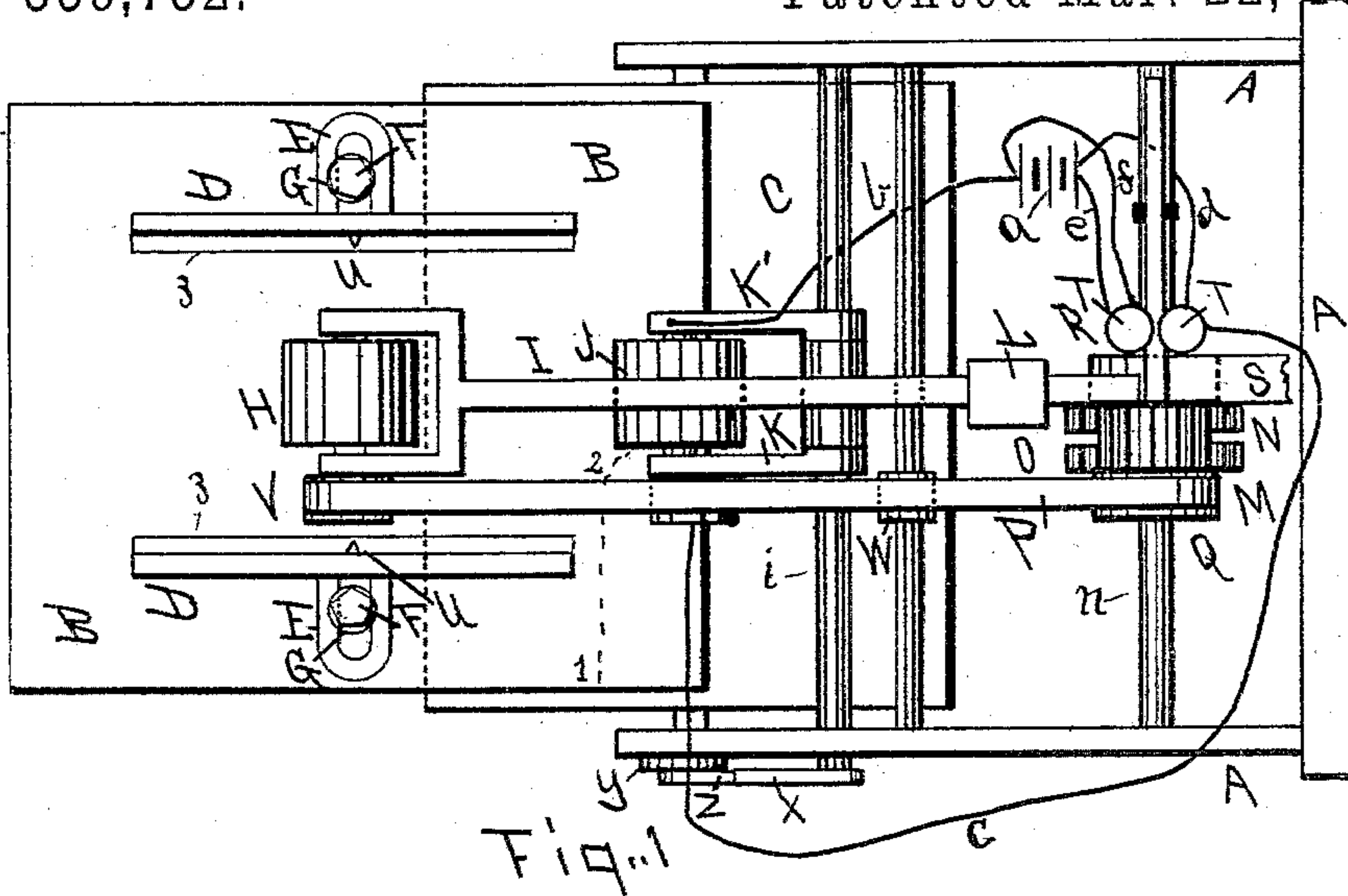
2 Sheets—Sheet 1.

J. A. WETMORE.

AUTOMATIC FEED FOR PRINTING PRESSES.

No. 359,752.

Patented Mar. 22, 1887.



ATTEST
Charles B. Lathrop
Augustus Schupfalon

INVENTOR
Jean A. Wetmore
by *Geo. H. Lathrop*
att'y.

(No Model.)

2 Sheets—Sheet 2.

J. A. WETMORE.

AUTOMATIC FEED FOR PRINTING PRESSES.

No. 359,752.

Patented Mar. 22, 1887.

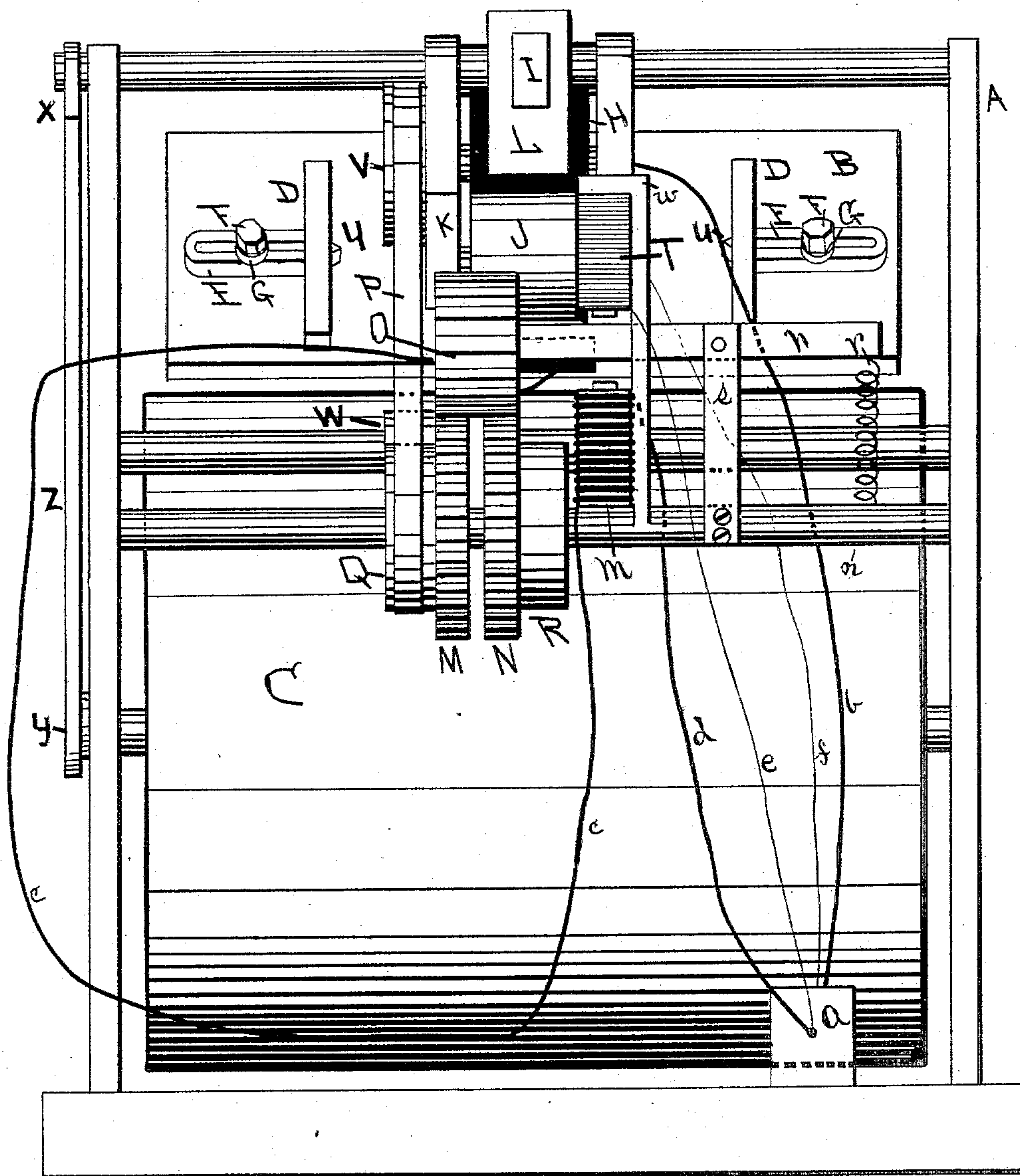
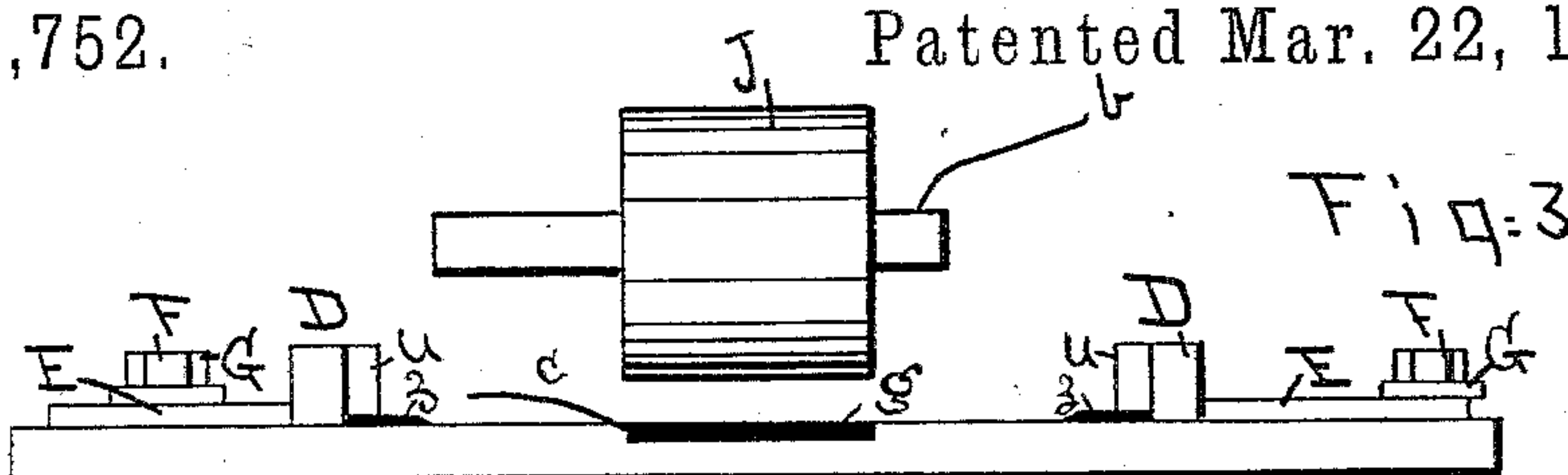


Fig. 4

INVENTOR

ATTEST

Charles B. Lothrop

Augustus Schapeton

Jean A. Wetmore

by Geo. H. Lathrop

atty

UNITED STATES PATENT OFFICE.

JEAN A. WETMORE, OF BROOKLYN, NEW YORK.

AUTOMATIC FEED FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 359,752, dated March 22, 1887.

Application filed June 26, 1885. Serial No. 169,849. (No model.)

To all whom it may concern:

Be it known that I, JEAN A. WETMORE, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Automatic Feed for Printing-Presses, of which the following is a specification.

My invention consists in an improvement in electrical paper-feeders for printing-presses, and is an improvement on the invention for which I filed an application for a patent on the 28th day of January, 1884, and will be fully pointed out in the claims.

Figure 1 is a plan view of a portion of a printing-press with my invention attached. Fig. 2 is a side elevation. Fig. 3 is an end elevation of the table and guides, showing also rollers J. Fig. 4 is a rear elevation.

A represents the frame of the machine.

B represents the table which supports the paper to be fed to the press, and C represents the press-cylinder, which is provided with the usual appliances for grasping a sheet of paper. (Not shown, because well known and not part of my invention.)

g represents an insulated piece of metal set into the face of the table at its lower end so as to be flush therewith.

I represents an arm secured to a shaft, *i*, journaled in the frame of the press above the cylinder, and one end of arm I reaches over the table B and has its end forked to receive a shaft on which is secured a rubber-faced wheel, H, which rests on the table when the forked end of arm I is depressed, and also a pulley, V.

h represents the rubber facing of wheel H. The other end of arm I carries an adjustable counter-weight, L.

K K' represent arms secured to shaft *i*, and carrying at their ends a shaft on which is loosely set a metal wheel or roller, J, insulated from arms K K' and adapted to make contact with the metal piece *g*. The arms K K' are free to turn on shaft *i*, to permit said shaft to be rocked without raising wheel J out of contact with the metal piece *g*.

Y represents an eccentric on the shaft of the cylinder C, and Z represents an eccentric-rod which is pivoted to an arm, X, secured to the end of shaft *i*, so that at each revolution of the cylinder the shaft *i* will be rocked and wheel H raised away from the table.

n represents a shaft secured in and extending across the frame of the press, and on this shaft are loosely set two gear-wheels, M N, which are fastened to pulleys Q R, respectively, also set loosely on said shaft. The pulley R is to be driven constantly by a belt, S, from any suitable source of power, and from the pulley Q a belt, P, runs over the pulley V, and is tightened when the pulley V is depressed toward the table by an idler-pulley, W.

O represents a pinion broad enough to mesh at once with both gear-wheels M N, hung on a pivoted arm, *p*, supported by a standard, *s*, secured to shaft *n*. Up to this point the machine herein shown and described is the same as that shown in my former application.

r represents a spring, for which a weight may be substituted, attached to the end of pivoted arm *p* and to shaft *n*, and tends constantly to raise the pinion O away from the gear-wheels.

m represents an electro-magnet secured to shaft *n*, and having its poles directly under the pivoted arm *p*, between the pivot and the end of said arm, which carries the pinion O.

T represents a similar electro-magnet carried by a standard, *w*, above said arm *p*, which is provided on each side opposite the poles of the electro-magnets with an armature when the arm itself is made of any material not subject to the attraction of a magnet.

a represents an electric generator, of any type which will furnish a current of electricity.

c represents an electrical conductor which runs from the metal piece *g* in the table to the electro-magnet *m*; *d*, a similar conductor running from the magnet *m* to one pole of the generator *a*, and *b* a similar conductor running from the other pole of the generator *a* to the insulated wheel J.

e f represent conductors, which connect the terminals of the coil of the electro magnet T with the poles of the generator.

The circuit composed of the conductors *c d b* is of much lower resistance than the circuit composed of the conductors *e f*, as is indicated by the difference in the size of said conductors.

To guide the paper to the cylinder and at the same time prevent the feed-wheel H from feeding more than one sheet at a time, I secure to the table B the adjustable guides D, each of which consists of a board standing on

edge secured to a slotted bracket, E, which lies on the table and embraces a bolt, F, set in the table, and has on its upper end a nut, G, too large to pass through the slot in the bracket, by which means the guide may be adjusted to any desired position and securely clamped in place.

On the inner surface of each guide D, I secure a piece of rubber, *u*, or other similar material, which projects far enough from the side of the guide to come in contact with the edge of a pile of sheets of paper placed between the guides. I place this retarding device at a point farther from the delivery end of the table than the point where the feed-wheel H strikes the table, so that the feed-wheel will pull each sheet of paper from the retarding device, instead of pushing it against the same. To prevent any of the sheets of paper from working between the table and the guides, I attach to the bottom of each guide a piece of metal or rubber, 3, which will lie under the bottom sheet of paper.

The operation of my invention is as follows:
A pile of sheets of paper is placed on the table B, under the feed-wheel H, and the guides D D are adjusted so that the retarding devices *u* come in contact with the edges of the paper. Power is applied to the press and to the pulley R, and at the same time the generator *a* is started. Owing to the difference in resistance of the two circuits with which the generator is connected, the current will flow chiefly through the circuit *c d b*, and will excite electro-magnet *m*, which will attract arm *p* and hold pinion O firmly meshed with wheels M N. As wheel N is constantly driven by pulley R, motion will be communicated through wheel N, pinion O, wheel M, pulley Q, and belt P to pulley V, and the feed-wheel H will be rotated and will draw the uppermost sheet of paper off from the pile and feed it down toward the cylinder, to be grasped and carried off by the cylinder in the usual manner. In its path to the cylinder the sheet of paper passes between metal piece *g* and wheel J, and, being a non-conductor of electricity, it breaks the circuit *c d b*, and the electric current immediately passes entirely through the other circuit, *e f*, and excites electro-magnet T, which attracts pivoted arm *p*, and, aided by spring *v*, raises the pinion O away from wheels M N, thus stopping the motion of the feed-wheel H. At the time that the cylinder grasps the sheet of paper fed down to it the eccentric Y forces rod Z upward and rocks shaft *i*, so as to raise the feed-wheel H off from the paper, and after the sheet has been drawn onto the cylinder allows the feed-wheel H to fall back on the top of the pile of paper. As soon as the sheet of paper is drawn from between wheel J and metal piece *g* the circuit *c d b* is restored, electro-magnet *m* again draws pinion O into gear with wheels M N, and feed-wheel H feeds down the top sheet of paper, as before. The friction between the retarding devices *u* and the paper

is great enough to overcome the friction between the sheets of paper themselves, and consequently but one sheet is fed at a time.

It is evident that the positions of the two circuits and the office performed by the magnet in such circuits may be reversed, the spring being also reversed.

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

1. The combination, with the driving mechanism of an electrical printing-press feeder, of an electro-magnet adapted, when excited, to hold said driving mechanism in gear, situated in a circuit of low resistance, which crosses the path of the paper on its way to the impression-cylinder, whereby said circuit is broken by each sheet of paper on its way to the cylinder, and an electro-magnet adapted, when excited, to throw and hold said driving mechanism out of gear, situated in an electrical circuit of high resistance as compared with said first-named circuit, substantially as shown and described.

2. In combination with the driving mechanism of a printing-press feeder, the electrical circuit consisting of the generator *a*, conductors *c d b*, magnet *m*, contact-wheel J, contact-piece *g*, all forming a circuit of low resistance, and the electrical circuit consisting of the generator *a*, conductors *e f*, and magnet T, forming a circuit of comparatively high resistance, substantially as shown and described.

3. In a printing-press feeder, the combination of the table B, the cylinder C, the rock-shaft *i*, actuated from said cylinder, the arms I' and K K', mounted on said rock-shaft, the feed-roller H and contact-roller J, carried by said arms, respectively, the contact-piece *g*, a pulley, V, on the shaft of the feed-roller, the loose pulleys Q R, having gears M N, the pinion O, adapted to connect said gears, an electro-magnet, *m*, situated in an electrical circuit of low resistance and adapted to hold said pinion and gears in mesh, an electro-magnet, T, situated in an electrical circuit of high resistance and adapted to throw said pinion and gears out of mesh, a belt, P, for connecting the pulleys Q and V, and means for actuating the pulley R, substantially as shown and described.

4. In combination with the table B, the guides D D, provided on their inner surfaces with the rubber pieces *u*, and having on their lower edges the projecting strips 3, attached to the slotted brackets E, and the bolts F and nuts G, substantially as shown and described.

5. The combination, with the feed-table B, of the laterally-adjustable guides D D, provided on their inner sides with retarding devices of rubber or like material, substantially as described.

JEAN A. WETMORE.

Witnesses:

A. W. S. PROCTOR,
W. B. MABEN.