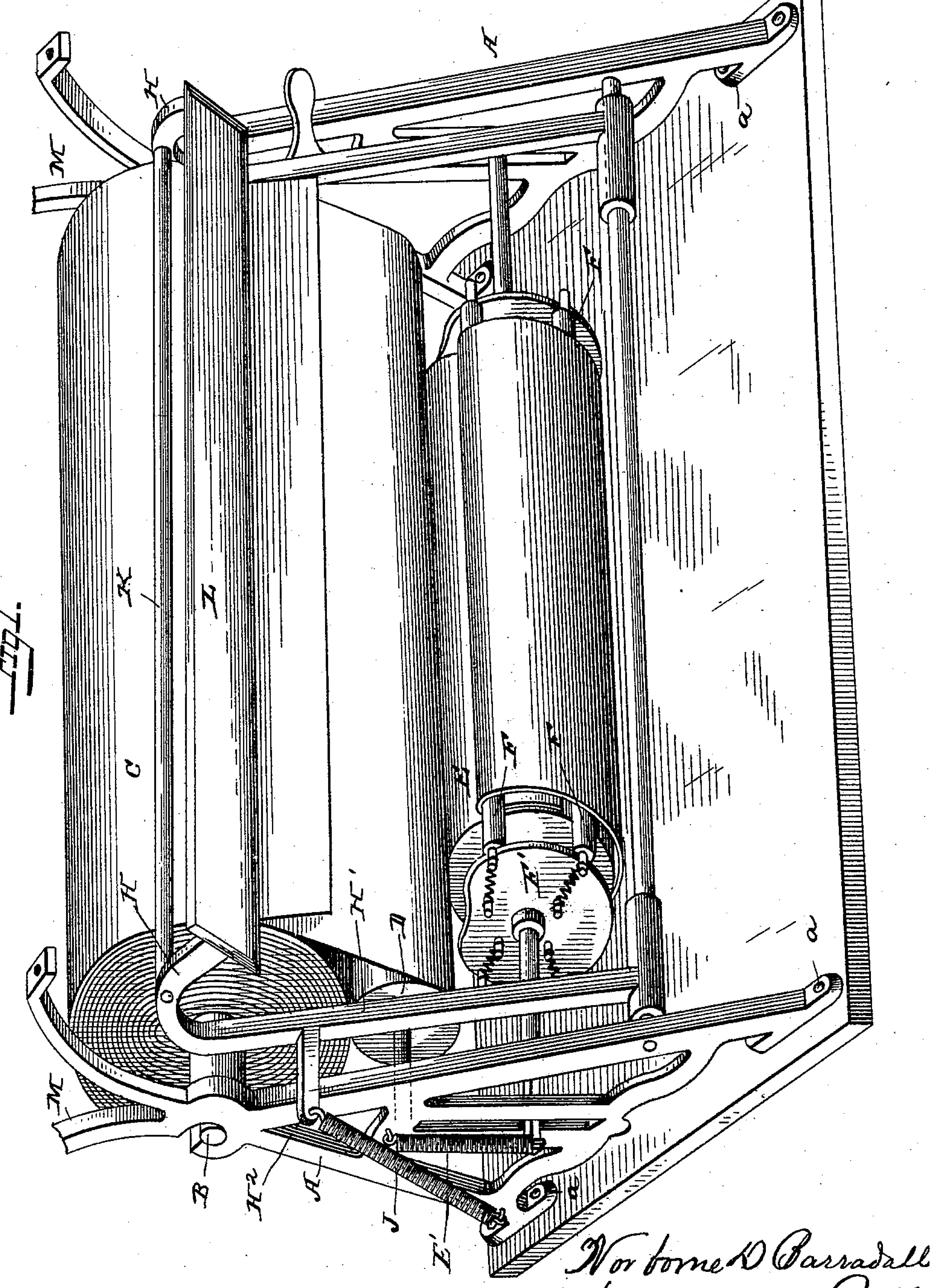
(No Model.) 2 Sheets—Sheet 1.

N. D. BARRADALL & A. J. BRADLEY.

AUTOMATIC PRINTING DEVICE.

No. 407,631. Patented July 23, 1889.



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(No Model.) 2 Sheets—Sheet 2.

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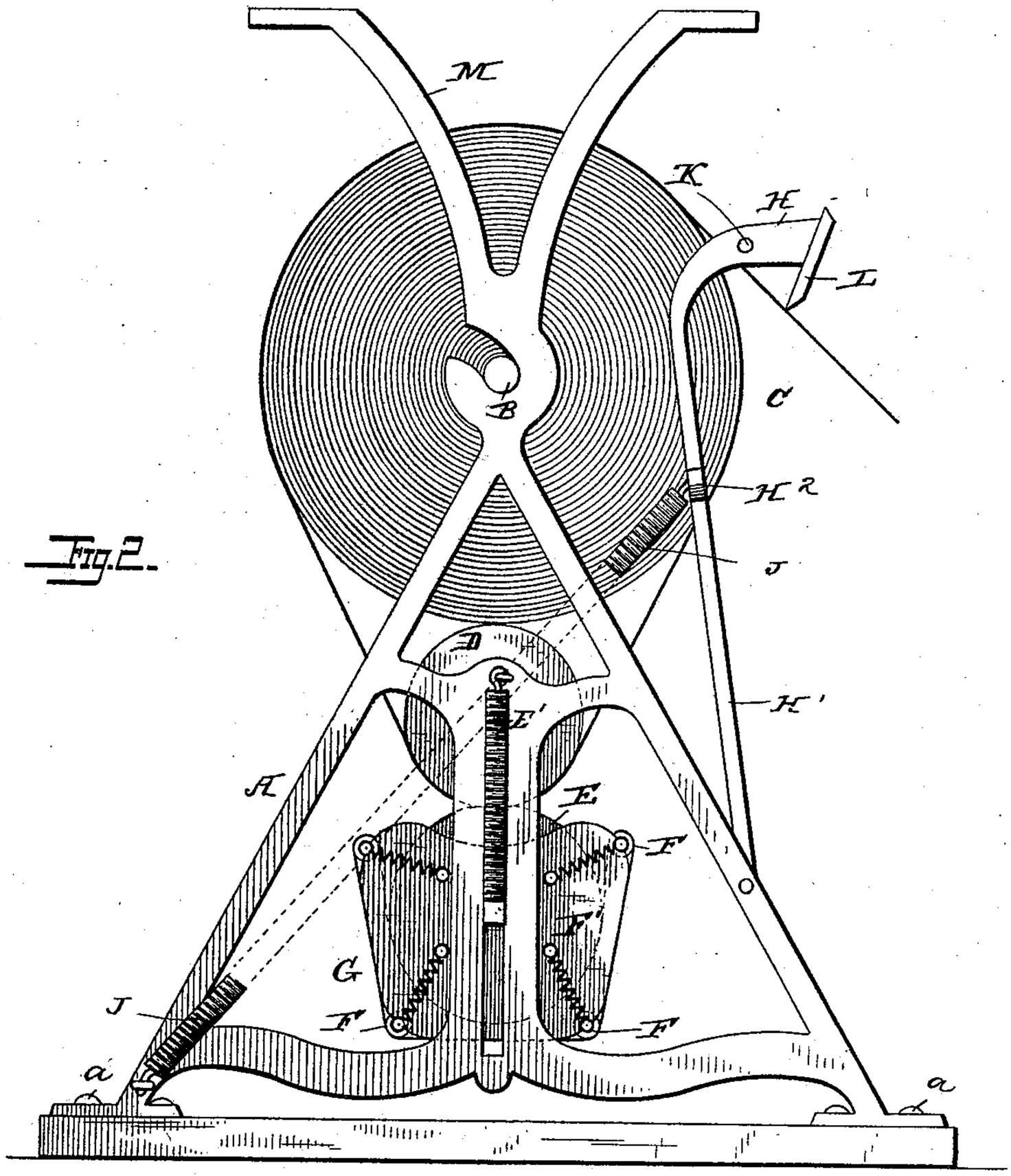
Fig. 2.



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UNITED STATES PATENT OFFICE.

NORBORNE D. BARRADALL, OF DALLAS, AND ANDREW JACKSON BRADLEY, OF FORT WORTH, TEXAS; SAID BARRADALL ASSIGNOR TO SAID BRADLEY.

AUTOMATIC PRINTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 407,631, dated July 23, 1889.

Application filed July 11, 1888. Serial No. 279,601. (No model.)

To all whom it may concern:

Be it known that we, NORBORNE D. BARRADALL and ANDREW JACKSON BRADLEY, citizens of the United States, residing, respectively, at Dallas, county of Dallas, State of Texas, and Fort Worth, county of Tarrant, State of Texas, have invented a new and useful Automatic Printing Device, of which the following is a specification.

The invention relates to improvements in automatic printing devices; and it consists in the combination and arrangement of parts, as hereinafter set forth and claimed, whereby the printing is effected by the movement of the paper or fabric on which the printing is done.

It also consists of a cutter secured to a spring-pressed attachment to the frame of the press, in combination with a roller whereby the paper or fabric may be readily and evenly separated from the roll as desired.

The objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of a printing-press embodying the features of my invention. Fig. 2 represents an end view of the press shown in Fig. 1.

Similar letters indicate corresponding parts in the several figures.

A A represent the end pieces of the frame of the machine, the said pieces being formed of suitable castings having openings *a* in the base thereof, through which screws may be passed to secure the castings in firm position on the floor or other support. Suitably journaled in the upper portion of said end pieces A A is a shaft B, on which is placed the roll C of paper or fabric on which the printing is to be done.

Below the shaft B and parallel therewith is an impression-cylinder D, formed of wood with a rubber or other suitable elastic covering, the said impression-cylinder having its axle-bearings in the end pieces A A and is cylindrical in form.

E represents the type-cylinder, which has its body portion, of wood or other suitable material, provided with a rubber tire, and having secured to it rubber or metal dies with the matter to be printed thereon. The ends of the axle of the cylinder E are square, having bearings in rectangular slots in the end pieces, and having attached to them the springs E′, which are pivotally fastened at their upper ends to the end piece A. The springs E′ serve to keep the type-cylinder E in close contact with the impression-cylinder D, so as to be actuated by the drawing of the paper C between the impression-cylinder and the type-cylinder.

Surrounding the cylinder E are rollers F, with journals having bearings in slots in the end plates F′. The springs F^2 are connected to the axles of the rollers F and to the plates F′ to keep the continuous absorbent G, which passes around all of said rollers F, in close contact with the cylinder at all points, except at the top thereof, where the printing is done. The absorbent G, which is a continuous belt, is made of a material susceptible of being impregnated with ink and yielding the same to the dies on the cylinder E when pressed by the roller F, the constant contact of the absorbent G with the dies during the rotation of the cylinder keeping the said dies moistened and preventing the ink from drying thereon. The said end plates F′ are rigidly secured on the axle of the cylinder E, so that they remain in fixed position. The inking-rollers F are covered with a coating of the same material as is used in constructing the absorbent belt G.

H represents a swinging frame pivoted at the lower ends of its side pieces to the end pieces A A of the frame of the press. Secured to projections H^2 of the side arms H′ of the said frame H are springs J, which are also secured to the end pieces A A. Journaled in the upper portion of the side pieces of the frame H is the roller K, parallel to the shaft B, and which, owing to the tension of the springs J, bears against the rolls C of paper or other fabric on the shaft B.

Secured to the upper ends of the side pieces of the swinging frame H is a knife or cutter L, the cutting-edge of which is on the under side, as shown in the drawings. The end

pieces or castings A A of the frame may have the upward extension-arms M, whereby the same may be readily and firmly secured to a counter or other convenient place.

The operation is as follows: The outer end of the paper from the roll C is first passed down and under the roller or impression-cylinder D, and then up and over the said roll C and under the roller K and beneath the knife L, where it may be grasped by the hand, so that it may be readily drawn from the roll. When it is desired to print on the fabric of the roll C, the outer end of the roll beneath the cutter is drawn downward and outward, thus rotating the impression-cylinder D and shaft B, and, owing to the pressure of the spring E′, which accommodates itself to all thicknesses of paper, the type-cylinder E is rotated, thus bringing the dies, which are properly inked by the absorbent G, in contact with the paper, thereby printing on the same. Owing to the spring attachment of the inking-rollers F there is little friction thereof, and the same is true relative to the cylinder E, so that the parts operate with ease and certainty, the tension of the springs E′ being such as to press the cylinder E, with its dies, against the paper, so as to insure clear and distinct printing. Owing to the rotation of the type-rollers and the pressure of the rollers F upon the absorbent the said absorbent is rotated, thus presenting different portions of its surface to the type of the type-roller. As the paper passes under the roller K, which is pressed by the spring J, it is delivered to the cutter L with uniformity, where by an upward movement it may readily be severed from the roll, the cutter always maintaining such a distance from the roll as to leave sufficient margin to be taken hold of for the next operation.

What we desire to claim is—

1. An automatic printing-press consisting of side pieces, the shaft B for the paper roll, the impression-roller D, the type-roller E, said shaft, impression, and type rollers having bearings in said side pieces, and the type-roller journal having springs attached thereto and to the side pieces, an inking device, and a swinging frame carrying a cutter and roller, the said roller and cutter being parallel to said shaft B, said parts being combined substantially as described.

2. An automatic printing-press having a shaft for the paper roll suitably mounted in the frame thereof, an impression-roller below said shaft and parallel therewith, a type-roller rotated by the movement of said shaft and impression-roller, and a swinging arm having a roller parallel to said shaft and provided with a cutter, said parts being combined substantially as described.

3. The side pieces A A, in combination with the shaft B, journaled in said end pieces, the impression-roller D, the type-roller E, the end plates F′, the rollers F, having bearings in said plates, and the absorbent G, passing around the rollers F, substantially as described.

4. In an automatic printing-press, the impression-roller D, suitably journaled in end pieces A A, in combination with the type-cylinder E, the springs E′, secured to the axle of said cylinder E and to the side pieces A A, the plates F′ on said cylinder-axle, and rollers F and absorbent G, substantially as described.

5. In an automatic printing-press, the swinging frame H, pivoted to the end pieces A A, the springs J, connected to said frame and end pieces, the roller K, journaled in said swinging frame, and the knife L, secured at its ends to said frame H, said parts being combined substantially as and for the purpose set forth.

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Witnesses:
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