



(No Model.)

2 Sheets—Sheet 2.

G. WHITE.

PAPER FEEDING MACHINE.

No. 308,119.

Patented Nov. 18, 1884.

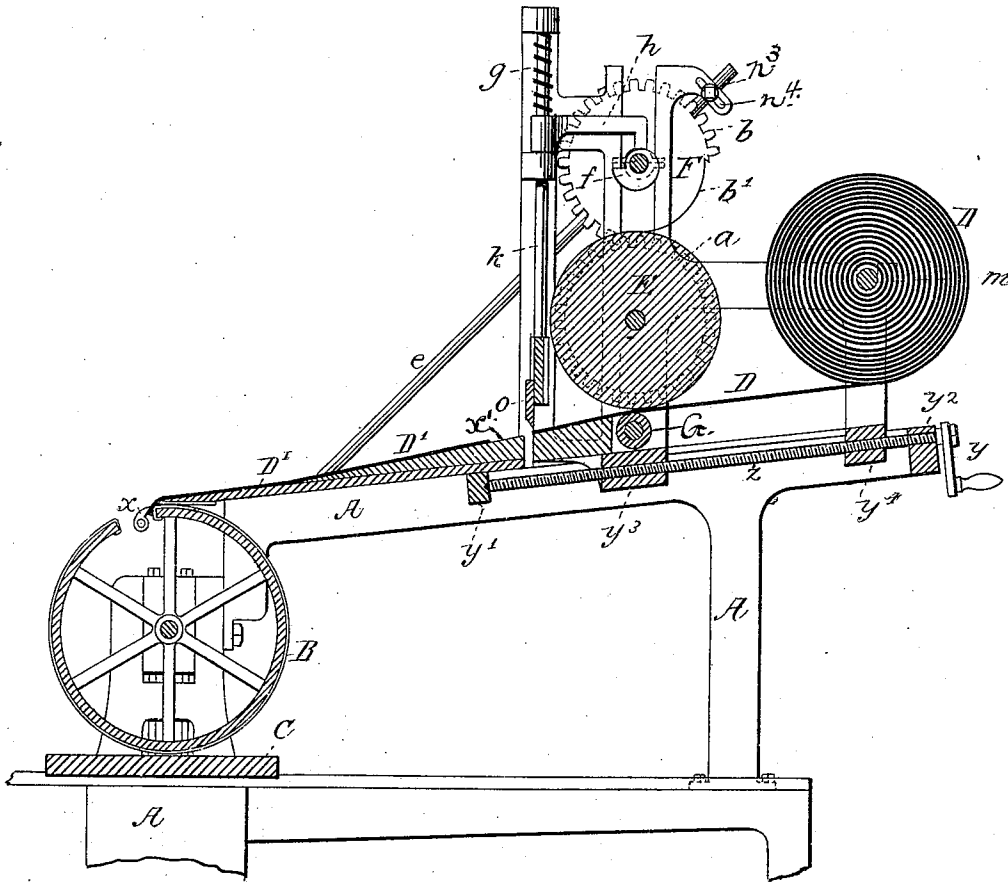


FIG. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

GEORGE WHITE, OF BOSTON, MASSACHUSETTS.

## PAPER-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 308,119, dated November 18, 1884.

Application filed March 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHITE, residing in the city of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Paper-Feeding Devices for Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which like letters indicate corresponding parts.

My invention relates more particularly to that class of printing-presses or printing-machines in which there is a flat bed, upon which type is placed, and which is geared to reciprocate at an even speed with a revolving cylinder, the paper being fed to the cylinder, and which carries the same around to the inked form, running along with the sheet until it is printed, when the form is retracted and inked again. Sometimes a segment of the cylinder is removed to allow of a backward movement of the bed, and in some machines the cylinder stops to allow a backward movement of the type-form.

My invention is intended to be applied more particularly to what are called "cylinder-presses" in distinction from rotary presses. My device takes the paper to be printed from a continuous roll or web, which is automatically fed forward by suitable devices, hereinafter described, and which is cut off automatically by a knife, giving the required sized paper desired.

I am aware that several devices for cutting or separating paper into sheets or lengths from a continuous roll or web have been employed; but all of these operate upon a different plan or in a different way from mine.

Having now described generally the object of my invention, I will now point out the particular devices which I employ for the purposes named.

In the drawings, Figure 1 is a side elevation of a section of a printing-machine in which a part of my devices are shown. Fig. 2 is a section of the front view of the machine and devices employed. Fig. 3 is a vertical longitudinal section of a machine, representing in reverse the devices as shown in Fig. 1.

A represents the frame of the printing-ma-

chine; B, the cylinder for carrying the sheets of paper after being cut to required lengths to the type-holding mechanism.

C is the type-platform for holding the type. 55

D is the continuous roll of paper.

E is a roller for feeding the paper from the roll D to the machine.

F is a segmental geared wheel.

G is the under feed-roll, which works in co-operation with the roll E. The face of the cylinder E is smooth, having upon one end the gear-pulley *a*. The wheel F has the gear *b* upon the larger part of its circumference, except as represented by *b'*. 60

*f* is a cam which is connected with the shaft carrying the geared pulley F. The cutting mechanism consists of the upright shaft *k*, to which is attached at its lower extremity the knife or cutter *o*, and having placed upon the upper extremity of the shaft *k* the spring *g*. The upper end of the shaft *k* is fitted in the block *p*, into which it slides when lifted. It is also journaled in the bearing *r*. There is also connected with this upright shaft, to which the knife is attached, the arm *h*. 65

D' represents the paper after being cut to length about to be seized by the fingers *x*, which are placed upon the cylinder B. This mechanism is driven from the main shaft *n*<sup>2</sup> by a gearing, *d*, connecting with the gearing *d'* upon the end of the shaft *e*. At the other extremity of the shaft *e* are also attached the bevel-gears *cc'*, the bevel-gear *c* being placed upon the end of the shaft which carries the geared wheel F. The shaft *e* is secured in suitable bearings, *nn'* *n*<sup>2</sup>, in the usual manner. 80

*m* is the shaft or arbor for holding the roll of paper.

The devices attached to the upper part of the machine, containing the rolled paper and the feed-rolls, the cutter, &c., are made adjustable in relation to the bed of the machine by means of the crank *y*, attached to the screw adjusting-rod *z*. This rod is threaded and works in the bearings *y'* *y*<sup>2</sup>, and the standards supporting the upper part of the machine carrying the paper rolls and cutter are connected with the rod *z* at *y*<sup>2</sup> and *y'*, so that by turning the crank *y* the position of the cutter and other devices are adjusted in relation to the distance from the cutting-point to the seizing-point at 85 90 100

the end of the table, by which means the length of the paper to be cut is regulated as desired. It will be observed that this arrangement of devices overcomes the necessity of a vibrating table or chute, and enables me to dispense with intermediate mechanism between the severing and seizing devices.

In operation the continuous roll of paper D is placed in position, as indicated, and is fed between the rolls E G upon the table-bed of the machine. Continuing downward it is seized by the fingers *x*. At this time the segmental gear F arrives at a point at which the gear-wheel is plain, and consequently does not act in turning the roll E. At the same time the cam *f* reaches a point so that the end of the arm *h* is allowed to drop from the highest point of the cam. This, being connected with the cutter-shaft *k*, allows the knife to fall at this point, being assisted by the spring *g*, and the paper is severed. Upon the continued revolving of the gear-wheel F, of course the knife is raised by means of the arm *h* riding upon the cam *f*, and the gears *b* of the gear-wheel F engaging with the gear *a* upon the end of the feed-roll E, and upon the revolution of the segmental gear F and the feed-roll E another strip of paper is carried forward toward the lower part of the machine, ready to be seized by the fingers *x*.

By means of the adjusting device it is evident that the knife can be removed at a greater or less distance from the lower end of the apron or bed of the machine, and thus the paper can be cut off at any required length, according to the requirements of the printing to be executed. If desired, a small presser can be attached to the end of the shaft of the roll E, to hold it in any given position while the cutting is being done; or a little ratchet can be attached in the ordinary way to drop into the gear *a*; but this is not essential to the working of my device.

In order that the power may be applied to the feed-rolls and cutting mechanism whatever the position of the paper holding, cutting, or feeding devices, I make the bearing or box or journals *n* and *n'* adjustable, and the bevel-gears are also adapted to be moved upon the shaft *e*. When different lengths of paper are to be cut, the gear F is removed and an-

other substituted with more or less number of cogs on its periphery, thus acting upon the feed-roll to draw off the length of paper desired from the paper-roll.

I do not confine myself strictly to the construction shown and described, as it is evident that other mechanical devices in some respects can be employed without departing from the spirit of my invention.

I am aware that various devices have been employed for feeding paper from a continuous roll and for cutting the same, as in patents to Jaeger and Hoe. My invention is not only different, but it, in addition, covers other important points in the art, as herein set forth.

Having now explained fully the device and its mode of operation, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an automatic paper-feeding attachment for printing-presses, the crank *y*, the screw-shaft *z*, and bearings *y'* *y''*, in combination with a suitable device for holding a roll of paper, feeding-rolls, and a cutting or severing device, all substantially as and for the purposes set forth.

2. In an automatic attachment for printing-machines, the combination, with the driving mechanism of the printing-machine and the feeding and cutting mechanism, of the shaft *e*, provided with the bevel-gear *d'* and adjustable bevel-gear *c'*, the bevel-gears *d c*, and bearings *n n'*, adapted to permit of the lateral adjustability of the said feeding and cutting mechanism, substantially as and for the purposes set forth.

3. In combination with the paper-seizing mechanism in a printing or other similar machine, the paper-feeding mechanism adapted to feed the paper from a roll and a severing mechanism adapted to cut the paper before or at the time it is seized by the seizing mechanism, both adjustably mounted, and so arranged that the distance from the cutting or severing point to the seizing mechanism shall always correspond to the length of paper severed, substantially as and for the purposes described.

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Witnesses:

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