

No. 865,177.

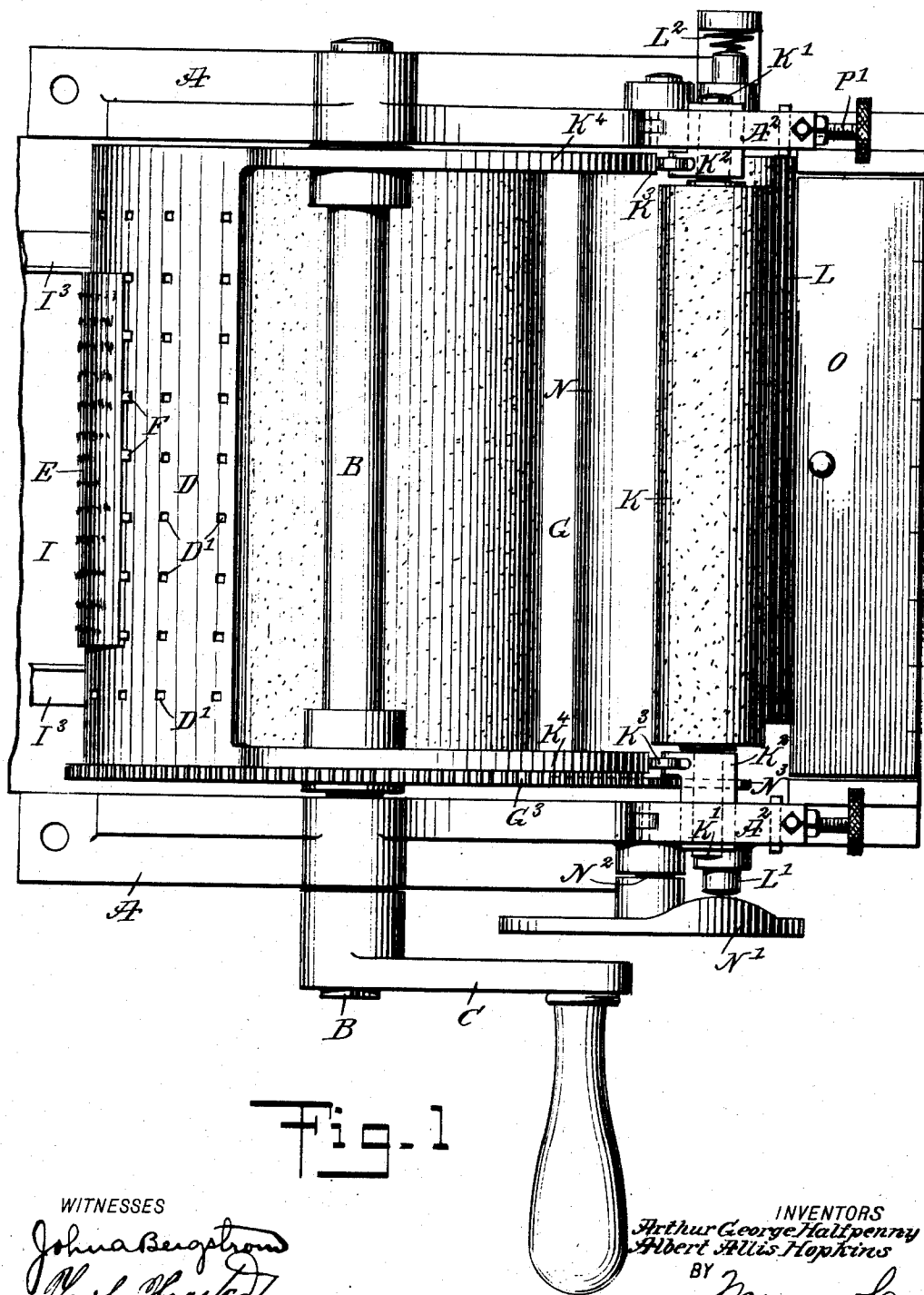
PATENTED SEPT. 3, 1907.

A. G. HALFPENNY & A. A. HOPKINS.

PRINTING PRESS.

APPLICATION FILED MAR. 25, 1907.

4 SHEETS—SHEET 1.



WITNESSES

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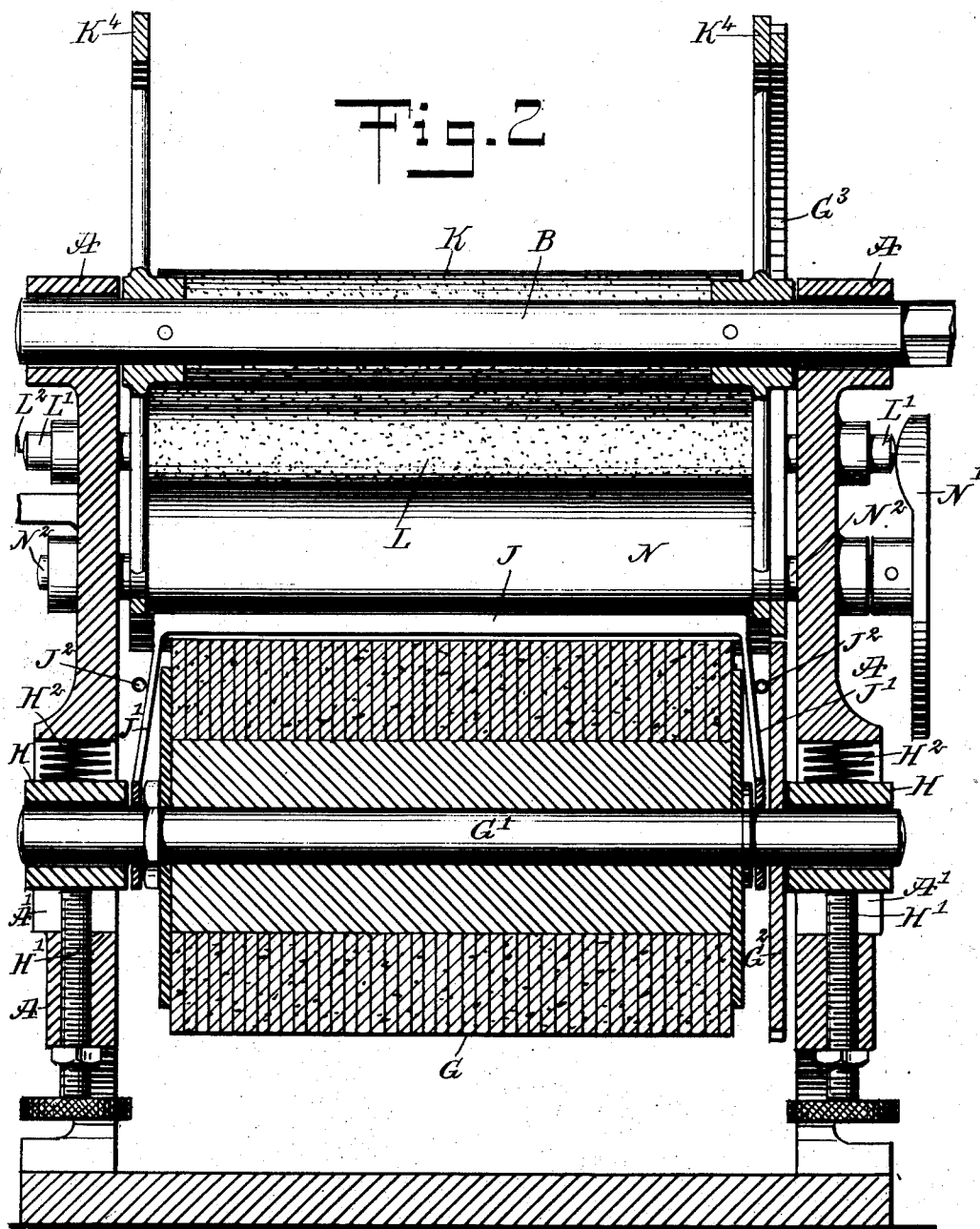
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4 SHEETS—SHEET 2.



WITNESSES.

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4 SHEETS—SHEET 3.

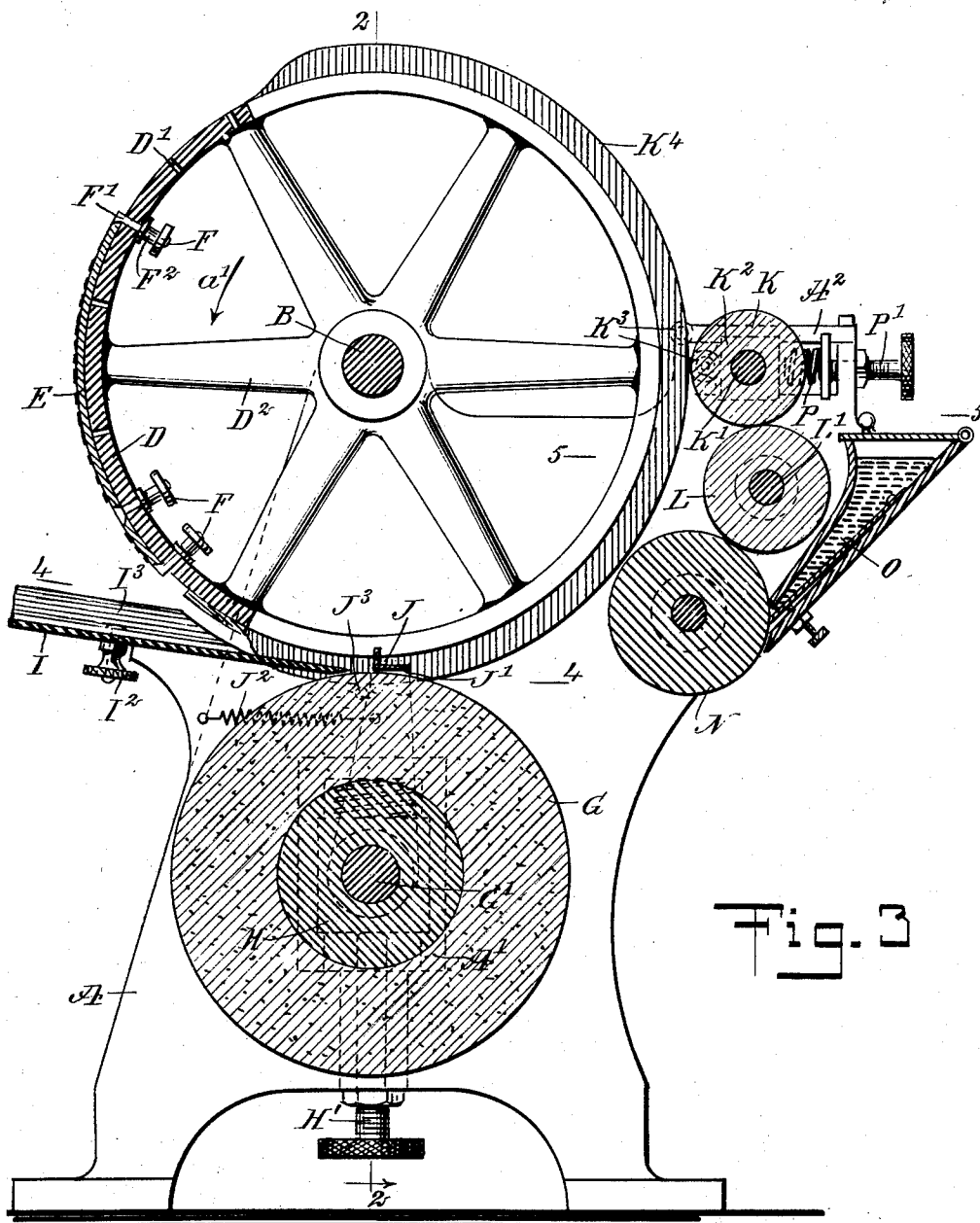


Fig. 3

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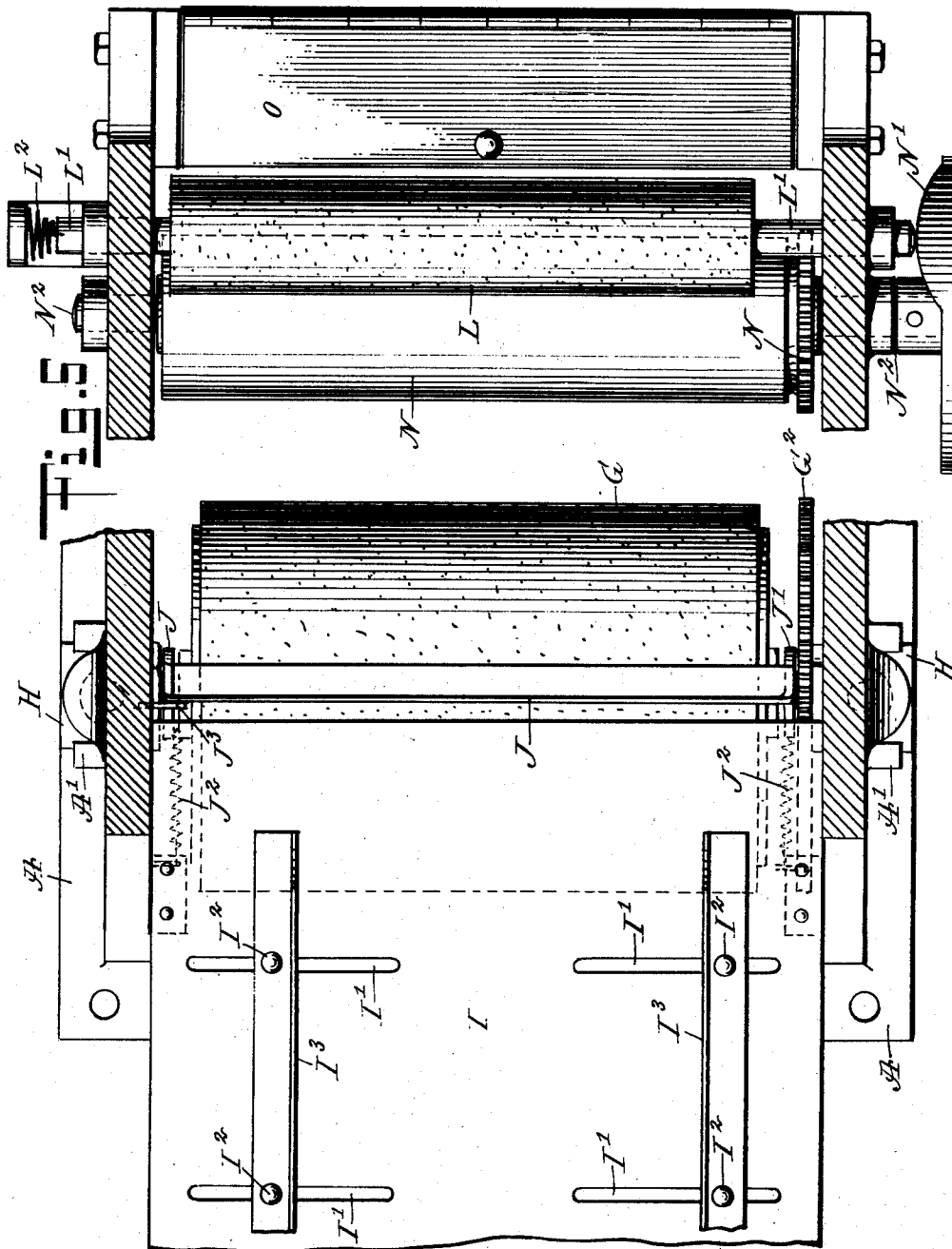
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PRINTING PRESS.

APPLICATION FILED MAR. 25, 1907.

4 SHEETS—SHEET 4.



UNITED STATES PATENT OFFICE.

ARTHUR GEORGE HALFPENNY, OF WEST HOBOKEN, NEW JERSEY, AND ALBERT ALLIS HOPKINS, OF NEW YORK, N. Y.

PRINTING-PRESS.

No. 865,177.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed March 25, 1907. Serial No. 384,247.

To all whom it may concern:

Be it known that we, ARTHUR GEORGE HALFPENNY, a citizen of the United States, and a resident of West Hoboken, in the county of Hudson and State of New Jersey, and ALBERT ALLIS HOPKINS, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Printing-Press, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved printing press, more especially designed for use in business houses and other establishments, to permit accurate printing of small circulars, bill heads, letter heads, envelopes and the like without requiring the aid of an expert printer.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement; Fig. 2 is a transverse section of the same on the line 2—2 of Fig. 3; Fig. 3 is a sectional side elevation of the same; Fig. 4 is a sectional plan view of the same on the line 4—4 of Fig. 3, and Fig. 5 is a like view of the same on the line 5—5 of Fig. 3.

On a suitably constructed frame A is journaled a transversely extending shaft B provided at one outer end with a crank arm C or other means for imparting a continuous rotary motion to the shaft B in the direction of the arrow *a'*. On the shaft B is secured a segmental support D for carrying on its peripheral face an electro-plate or plates E from which the impressions are made on sheets of paper, envelopes or like articles to be printed. The electro-plate or plates E are removably secured in position on the support D by the use of bolts F extending through apertures D' formed in the segmental support D, each bolt F being provided at its outer end with a head F' having a beveled face or faces for engaging correspondingly beveled ends of the plate E, as plainly indicated in Fig. 3, so that the top of the head does not project to or above the type face of the plate E. The nut F² of each bolt F screws on the inner end of the bolt against the inner face of the support D, and as the latter is made of segmental shape it is evident that convenient access is had at all times to the nuts F², to adjust the bolts when fastening the plate or plates E in place on the support D, or removing the said plate or plates from the support. As illustrated in the drawings the support D is connected with the shaft B by a spider D² arranged near the sides of the support D.

The segmental support D rotates in unison with the impression roller G, made of felt or other suitable material, and having its shaft G' journaled in bearings H mounted to slide up and down in vertical guideways A' arranged on the frame A. The bearings H rest on adjacent screws H' screwing in the frame and engaging the bottoms of the bearings H, the tops of the latter being pressed on by springs H², so as to hold the bearings in position on the adjacent screws H'. Now by adjusting the screws H' the top peripheral face of the impression roller G can be brought in proper relation to the top or printing face of the plate or plates E held on the support D.

On the shaft G' is secured a gear wheel G² in mesh with a gear wheel G³ secured on the shaft B, so that when the latter is rotated a rotary motion is given to the impression roller G, so that the latter rotates with the same peripheral speed as the type or printing face of the plate or plates E.

The gear wheels G², G³ are preferably so proportioned that the impression roller G makes two revolutions for each revolution of the shaft B, and hence the type or printing face of the plate or plates E always contacts with the same portion of the peripheral face of the impression roller G, and consequently a proper printing of a large number of sheets or the like is obtained, as the same portion or the impression face of the impression roller G is in register with the printing face of the plate or plates E for each impression.

Now in case the impression face of the impression roller G has become worn, the impression roller G can be changed on its shaft G', so as to bring the other half portion of the impression roller G in register with the printing face of the plate or plates E. Thus the impression roller G can be used for a long time without requiring recovering or refelting of the same.

The sheets or other articles to be printed are fed by hand over a feed table I supported on the main frame A, and provided with transverse slots I' engaged by clamping bolts I² attached to longitudinally extending gages I³, spaced apart a distance corresponding to the width of the sheets or other articles to be printed and fed over the table I between the gages I³. By the arrangement described the sheets or other articles to be printed are always guided between the printing face of the plate or plates E and the top of the impression roller G at the same place, with a view to properly locate the impression on each sheet or other article printed.

Across the top of the impression roller G and immediately in front of the feed table I extends a transverse stop or gage J against which abuts the front end of the sheet or other article fed by the operator over the table I, so that the beginning of the impression on the sheet

is always the desired distance from the front edge of the sheet, as will be readily understood by reference to Fig. 3.

The gage J is provided at its sides with downwardly extending arms J' fulcrumed loosely on the shaft G', so that the gage J can swing rearwardly with the advancing sheet or other article printed at the time. The side arms J' of the gage J are connected with springs J² attached to the main frame A, so as to return the gage J to its normal position across the top of the impression roller G after the impression has been made on the sheet or other article at the time. The return movement of the gage J is limited by a stop pin J³ fastened to the main frame A and engaging one of the side arms J' (see Figs. 3 and 4).

In order to ink the type or the printing face of the plate or plates E, an inking roller K is employed, in peripheral contact with a distributing roller L, which in turn is in peripheral contact with the fountain roller N receiving the ink from a fountain O of any approved construction. The inking roller K has its shaft K' journaled in bearings K², mounted to slide longitudinally in guideways A² arranged on the main frame A, and the outer sides of the bearings K² are pressed on by springs P, the tension of which can be regulated by adjusting screws P', as plainly shown in Fig. 3. Each of the bearings K² is provided with a friction roller K³ in peripheral contact with a cam K⁴ supported from the main shaft B and rotating with the same, the ends of each cam K⁴ terminating at the ends of the support D, so that when the shaft B is rotated the inking roller K is held in a rearmost position and in contact with the distributing roller L during the time the cams K⁴ engage the friction rollers K³, and when the friction rollers K³ reach the ends of the cams K⁴, then the springs P force the inking roller K inward towards the shaft B and the friction rollers K³ in contact with the peripheral face of the support D, thus moving the inking roller K out of contact with the distributing roller L and in contact with the type or printing face of the plate or plates E, so as to ink the said printing face. When the other end of the support D has been reached the friction rollers K³ travel up the other ends of the cams K⁴, whereby the inking roller K is caused to move bodily outwardly against the tension of the springs P and back into contact with the distributing roller L, to receive a new supply of ink from the distributing roller L.

The shaft L' of the distributing roller L is mounted to turn and slide transversely in suitable bearings arranged on the main frame A, and one end of the shaft L' is pressed on by a spring L², to hold the opposite end of the shaft in contact with a cam N' secured on the shaft N² of the fountain roller N. The shaft N² of the fountain roller N is provided with a gear wheel N³ attached to the shaft B, so that when the latter is rotated a rotary motion is given to the fountain roller N, for the latter to take up ink from the fountain O and to deliver this ink to the distributing roller L, which received a transverse motion in one direction by the cam N', and a return transverse movement by the action of the spring L².

The operation is as follows: When the several parts are in the position illustrated in the drawings, a rotary motion is given to the shaft B and a sheet or other article to be printed is fed over the table I until its forward

end abuts against the gage J, then the type or printing face of the plate or plates E finally comes in contact with the sheet directly on top of the impression roller G, so that the sheet is carried along and an impression is made on the same by the type face of the plate or plates E. As the sheet is printed it passes rearwardly and down at the rear of the impression roller G, to be discharged from the machine. In the meantime, the plate or plates E come in contact with the inking roller K, to be engaged by the same, and the gage J returns to its normal position by the action of the spring J², so that another sheet can be fed over the table I against the said gage or stop J to be printed by the plate E on the next revolution of the shaft B.

From the foregoing it will be seen that the printing press is very simple and durable in construction, composed of comparatively few parts, and not liable to easily get out of order. It will also be seen that the plate or plates E can be readily fastened in position on the bed or support D, or removed therefrom whenever desired, and the impression roller G can be readily adjusted, to bring the same in proper relation to the printing face of the plate or plates E, to insure a proper impression.

The printing press constructed as shown and described is very serviceable for a large number of business houses and other establishments, to permit the same to print from electro-plates small circulars, hand bills, envelopes, bill heads, letter heads and the like without requiring the aid of an expert printer.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. In a printing press, the combination of a revoluble segmental support having fastening means for securing the segmental printing plate in position on the said support, an impression roller arranged below the said segmental support and rotating in unison with the said support, a feed table for feeding the sheet between the said segmental support and the said impression roller, a gage mounted to swing loosely on the shaft of the said impression roller and extending across the top of the said impression roller in front of the said feed table and in front of the beginning point of the said segmental support, the sheet in advancing abutting against the said gage and swinging the same rearward out of the path of the advancing segmental support and its printing plate, and a spring connected with the said gage for returning the latter to normal position.

2. A printing press provided with a support for carrying the printing plates comprising a revoluble shaft, a rim section having apertures, spiders secured on the said shaft and integrally connected with the said rim section at the sides thereof, and bolts extending through the said apertures and having beveled heads on the outer face of the said rim section, for fastening the printing plates in position on the said rim section, the nuts of the bolts screwing against the inner face of the said rim section at points between the spiders.

3. A printing press comprising a revoluble rim section, means on the said rim section for removably securing segmental printing plates thereon, an impression roller rotating in unison with the said rim section, an inking roller for inking the said printing plates, a cam on the said rim section for controlling the said inking roller, a fountain, a fountain roller rotating in unison with the said rim section, a distributing roller in contact with both the said inking roller and the said fountain roller, and means controlled from the said fountain roller for moving the said distributing roller in an axial direction.

4. A printing press comprising a revoluble rim section, means on the said rim section for removably securing segmental printing plates thereon, an impression roller ro-

5 tating in unison with the said rim section, an inking roller for inking the said printing plates, slidable spring-pressed bearings in which the inking roller is journaled, a cam on the rim section controlling the said bearings, a fountain, a fountain roller rotating in unison with the said rim section, a distributing roller in contact with both the inking roller and the said fountain roller, and means controlled from the said fountain roller for moving the said distributing roller in an axial direction.

In testimony whereof we have signed our names to this 10 specification in the presence of two subscribing witnesses.

ARTHUR GEORGE HALFPENNY.
ALBERT ALLIS HOPKINS.

Witnesses:

THEO. G. HOSTER,
JOHN P. DAVIS.