No. 846,992. PATENTED MAR. 12, 1907

H. C. GAMMETER.

FEEDING MECHANISM FOR PRINTING MACHINES.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 2.

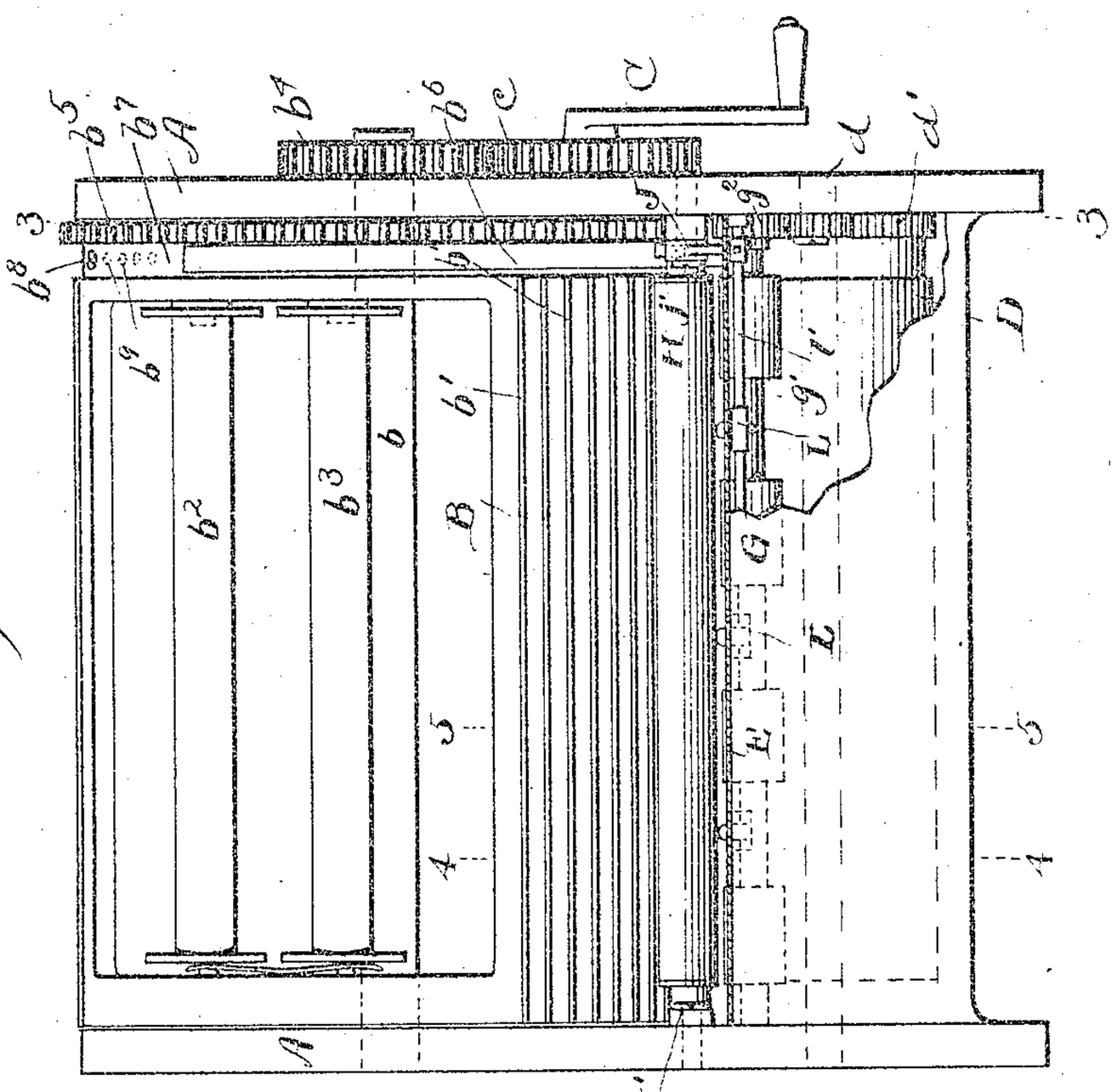
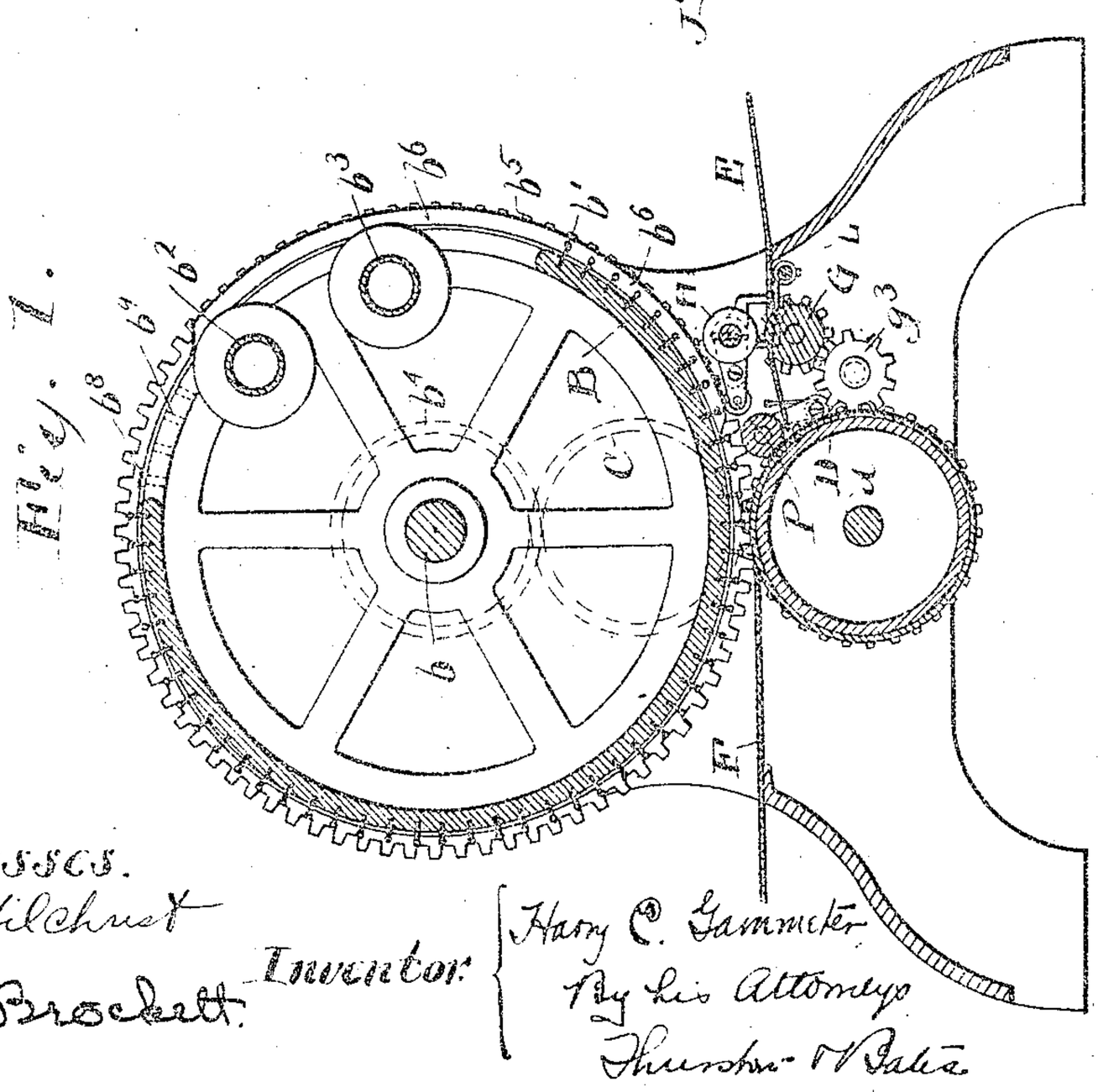


Fig. 1.



No. 846,992. PATENTED MAR. 12, 1907.

H. C. GAMMETER.

FEEDING MECHANISM FOR PRINTING MACHINES.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

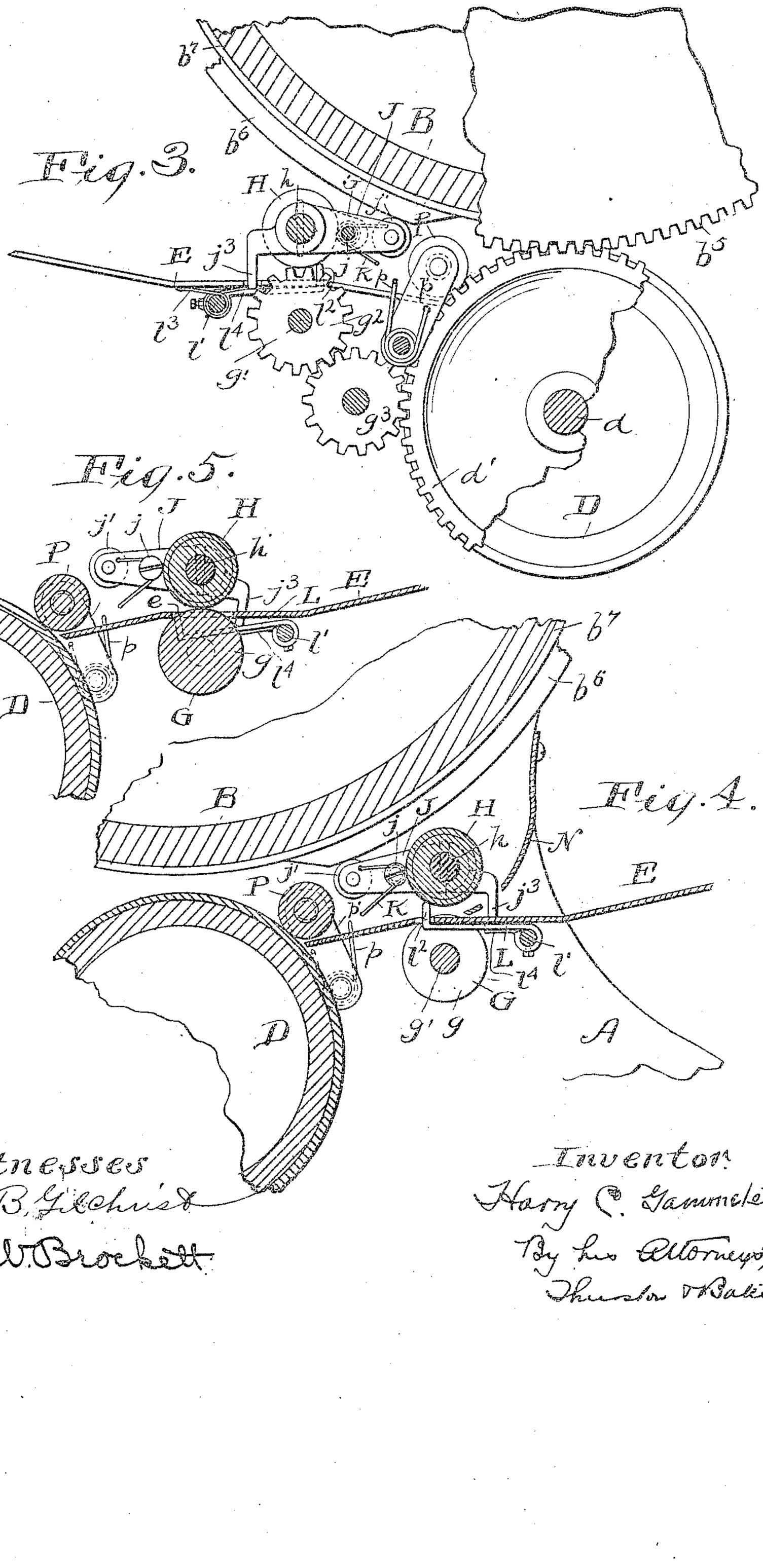


Fig. 5.

Fig. 4.

Witnesses
E. B. Gilchrist
B. W. Brockett

Inventor:
Harry C. Gammeter,
By his Attorneys,
Thurston & Baker

UNITED STATES PATENT OFFICE.

HARRY C. GAMMETER, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN MULTIGRAPH COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

FEEDING MECHANISM FOR PRINTING-MACHINES.

No. 846,992. Specification of Letters Patent. Patented March 12, 1907.

Application filed September 19, 1904. Serial No. 225,154.

To all whom it may concern:

Be it known that I, HARRY C. GAMMETER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Feeding Mechanism for Printing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a simple and efficient mechanism for feeding sheets of paper to a printing-machine.

It is especially adapted for a printing-machine comprising a rotary drum and a coöperating rotary impression-platen. The drum may be arranged to carry longitudinal rows of individual type and an inking-ribbon surrounding the same, as shown, described, and claimed in my Patent No. 722,404, issued March 10, 1903, and my applications, Serial Nos. 146,651 and 196,840, filed March 7, 1903, and March 7, 1904, respectively.

The present invention may be most conveniently summarized as consisting of the combinations of parts hereinafter more fully described, and definitely set out in the claims.

In the drawing, Figure 1 is a vertical section through a rotary printing mechanism embodying my invention, and Fig. 2 is a front elevation thereof. Fig. 3 is a view in elevation from the right-hand end of Fig. 2 with the frame member and the parts outside thereof omitted, being substantially a cross-section on the line 3 3 of Fig. 2 looking toward the left. Figs. 4 and 5 are respectively cross-sections on lines 4 4 and 5 5 of Fig. 2 looking toward the right.

Referring to the parts by letters, A represents any suitable frame having a pair of uprights.

B is the printing-drum, mounted on the shaft *b*, which is journaled in the frame. On this printing-drum are longitudinal rails *b'*, adapted to carry individual type. (Not shown.) Within an opening in the periphery of the drum are a pair of spools b^2 b^3 for an inking-ribbon, the ribbon (not shown) passing from one spool around the drum and over the type thereon and then to the other spool. On the shaft *b* is a gear b^4, which meshes with the gear *c*, secured to the hub of a crank C. The rotation of this crank thus rotates the printing-drum B.

Journaled on the shaft *b*, beneath the printing-drum, is an impression-platen D, having a soft surface of rubber or other material. This platen carries on its end a gear *d'*, which meshes with a gear b^5 on the periphery of the printing-drum. Thus the printing-drum and impression-platen are rotated in unison, and if paper be fed to their coöperating surfaces it will be drawn between them by their rotation and will be printed by the type on the rails *b'* through the inking-ribbon.

E represents a portion of a table on which the sheet of paper to be printed is placed by hand. The mechanism comprising the present invention, which will now be particularly described, operates at the proper time to grip such paper and feed it along to the coöperating line between the printing-drum and the impression-platen, which parts draw the paper along as it is printed and discharge it onto the receiving-table E. Located below the table E is the roller G, built up of a series of rubber sleeves *g* on a shaft *g'*, journaled in the frame. On the end of the shaft *g'* is a gear g^2, which, through an idler g^3, connects with the gear *d'* on the impression-platen, wherefore the roller G is rotated continuously as the printing-drum rotates. The sectional rolls *g* project up through the openings *e* in the table E, so that the upper surface of the roll is slightly above the plane of the table-top. Mounted above the table and directly over the roller G is a roller H, journaled on a shaft *h*, which is secured at its ends to arms J J', which are pivoted at *j* to a frame member A. Springs K, acting on these arms J J', press upward on their rear ends, and thus tend to bring the roller H into contact with the roller G. The arm J carries at its end the roller *j'*, adapted to ride under a peripheral rib b^6, carried by the drum. This keeps the rollers H and G normally out of contact with each other. For a portion of the periphery this rib is depressed or omitted, and when this portion comes over the roller *j'* the spring *k* is free to act and forces the rear of the arms J J' upward, bringing the roller H down into contact with the roller G, and thus gripping the paper between them. To prevent the paper being prematurely or accidentally fed, I provide stops in the form of levers L, pivoted to a rock-shaft *l'* and upwardly-turned ends l^2, adapted to project through openings in the table. These le-

vers lie between the sleeves *g*, which comprise the gripping members of the roller G. A spring l^3 tends to hold the levers with their upturned ends projecting above the table in the position shown in Figs. 3 and 4. This is the position of these stops when the rollers H and G are out of contact, the ends of the stops engaging the surface of the roller H. On the forward end of one of the arms J is a downwardly-extending lug j^3, which is adapted to engage a short rock-arm l^4 and the shaft l'. The result of this is that when the depression in the rib b^6 allows the roller j' to rise under the influence of spring K the arm j^3, descending, rocks downward the arm l^4, thus depressing the various stop-levers L, as shown in Fig. 5, and freeing the paper, which is at once fed by the gripping-rollers.

A suitable guide-plate N (omitted in Figs. 1 and 2, but shown in Fig. 4) is secured to the frame in front of the roller H and extends nearly to the table E. The sheet of paper to be printed is placed on the table and shoved forward by hand along the same and beneath this guide-plate until its end is stopped by the stops l^2. At the proper time the rib b^6, releasing the roller j', causes the depression of the roller H, thus concurrently displacing the stops l^2 and gripping the paper between the rolls H and C. When the paper is thus gripped, the rotation of the feed-rolls advance the paper along the table until its free end strikes the impression-platen, and this carries it upward between itself and the soft roller P, which lies against the platen, being spring-pressed thereto by springs *p* and arms *p'*, in which the roller is journaled. After passing between the roller P and the impression-platen D the continued rotation of these parts carries the paper along until its free end passes between the type on the printing-drum and the impression-platen, which carries it through the machine.

To regulate the time of beginning of the paper feed, I mount the rib b^6 on a ring b^7, which surrounds the printing-drum and may be turned about the same and locked in any desired position, as illustrated by the set-screw b^8, which may screw through the ring into any of the series of threaded holes b^9 in the drum. This adjustment of the beginning of the paper feed allows the matter set up on the drum to be printed on any portion of the sheet and provides the letter-heads having a various amount of existing printing thereon.

I claim—

1. The combination of a printing-drum, an impression-platen a pair of paper-feed rollers, arms for holding one of said rollers out of contact with the other, a roller carried by one of said arms, a member adjustably carried by said drum and adapted to engage said last-mentioned roller to govern engagement of the feed-rollers, and means for driving one of the feed-rollers.

2. The combination of a printing-drum, an impression-platen a pair of feed-rollers, one above the other, gearing connecting the drum and lower feed-roller, a movable ring surrounding the periphery of the drum and adjustably locked thereto, and means carried by said ring and adapted to periodically cause depression of the upper feed-roller into gripping engagement with the lower roller.

3. The combination of a rotary printing-drum, an impression-platen, a pair of feed-rollers, an intermediately-pivoted arm supporting near one end one of the feed-rollers and carrying near the other end a cam-roller, an adjustable ring surrounding the drum, and a cam on said ring adapted to engage said cam-roller.

4. The combination of a rotary printing-drum, an impression-platen, a pair of feed-rollers, one above the other, means for driving the lower feed-roller, a pivoted arm carrying one end of the upper feed-roller, means on the drum to engage said arm and thereby move the feed-roller, a rock-shaft, a series of upwardly-projecting stops carried thereby, a rock-arm on said rock-shaft, and a downward projection on the arm first mentioned adapted to bear on said rock-arm whereby when the upper feed-roller is lowered said stops are thereby withdrawn from active position.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HARRY C. GAMMETER.

Witnesses:
ALBERT H. BATES,
N. F. BRESNAN.