

No. 812,735.

PATENTED FEB. 13, 1906.

H. C. GAMMETER.
FEEDING MECHANISM FOR PRINTING MACHINES.

APPLICATION FILED MAR. 3, 1904.

3 SHEETS—SHEET 1.

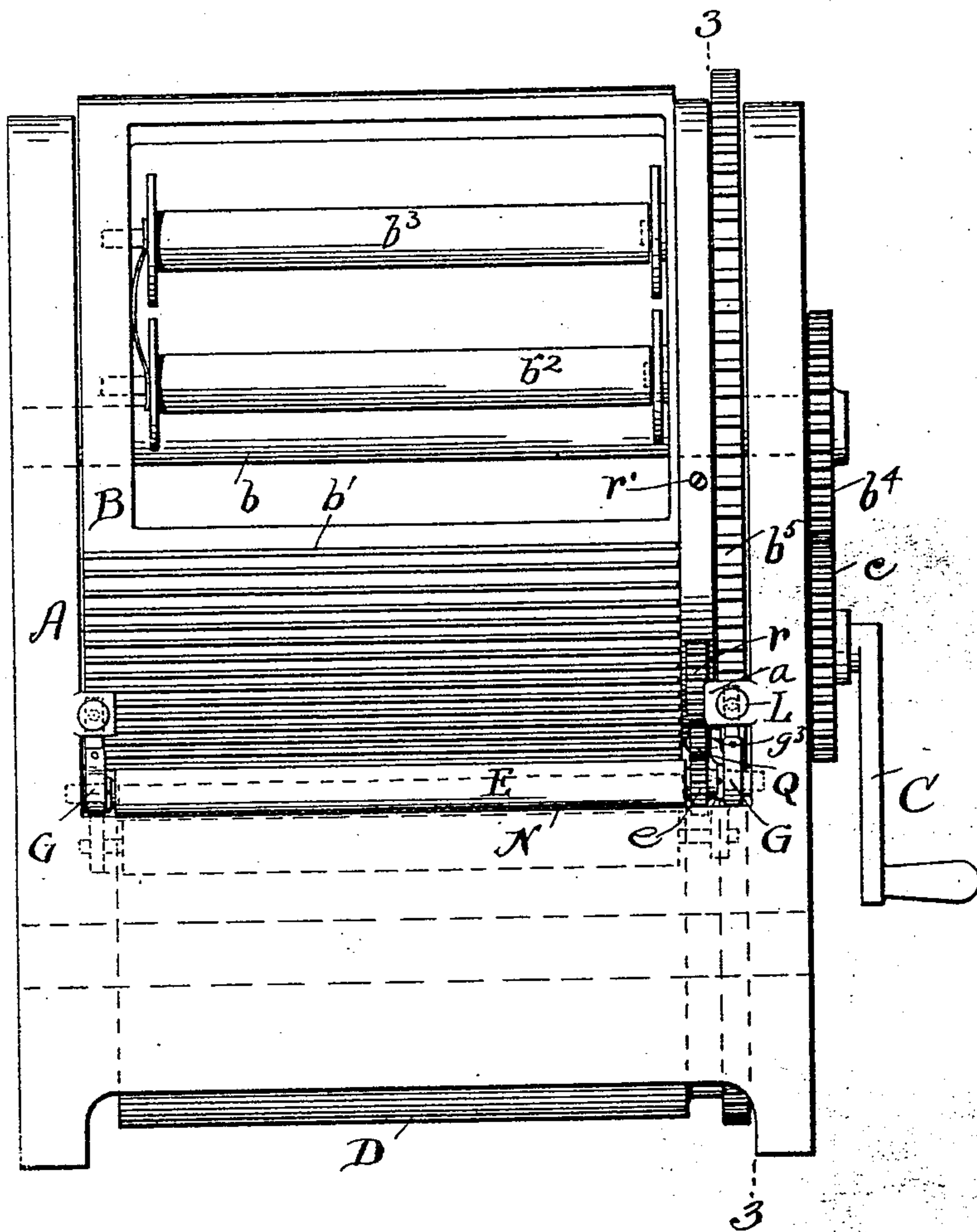


Fig. 1.

Witnesses.
E. B. Gilchrist
J. B. Hull.

Inventor.
Harry C. Gammeter,
By his Attorneys,
Thurston & Bates.

FOR DELIVERING.

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3 SHEETS—SHEET 2.

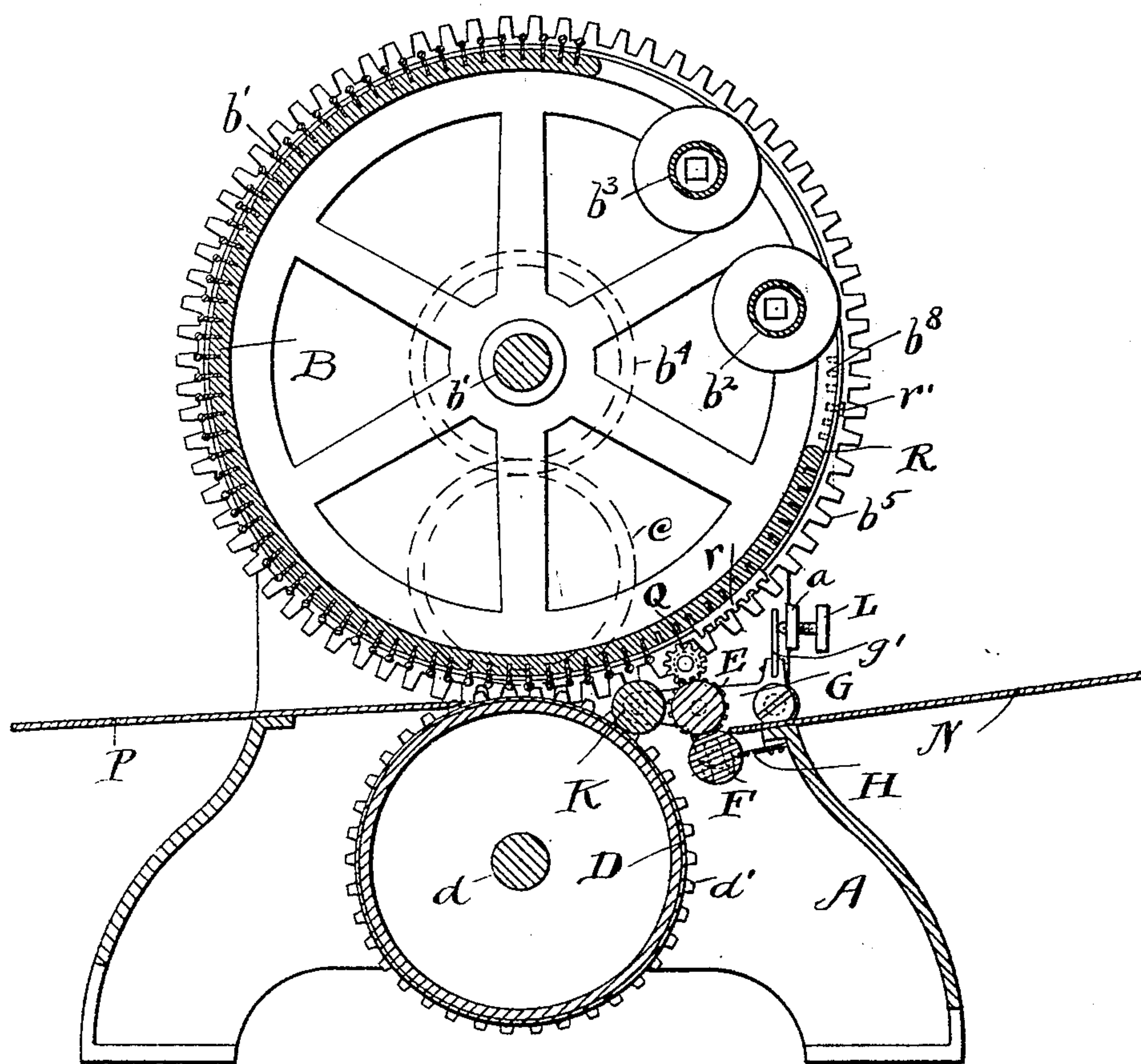


Fig. 2.

Witnesses.
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3 SHEETS—SHEET 3.

Fig. 3.

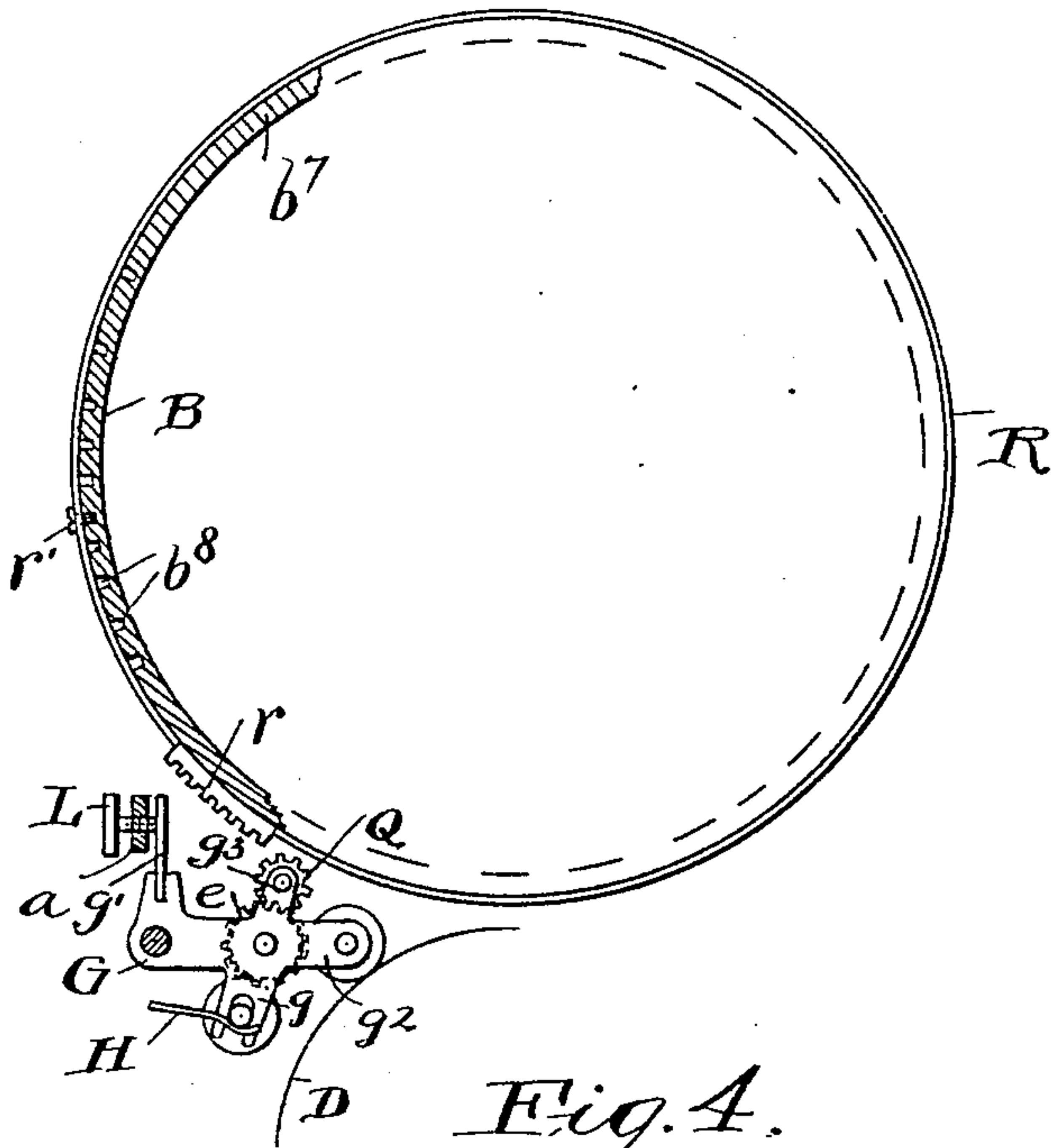
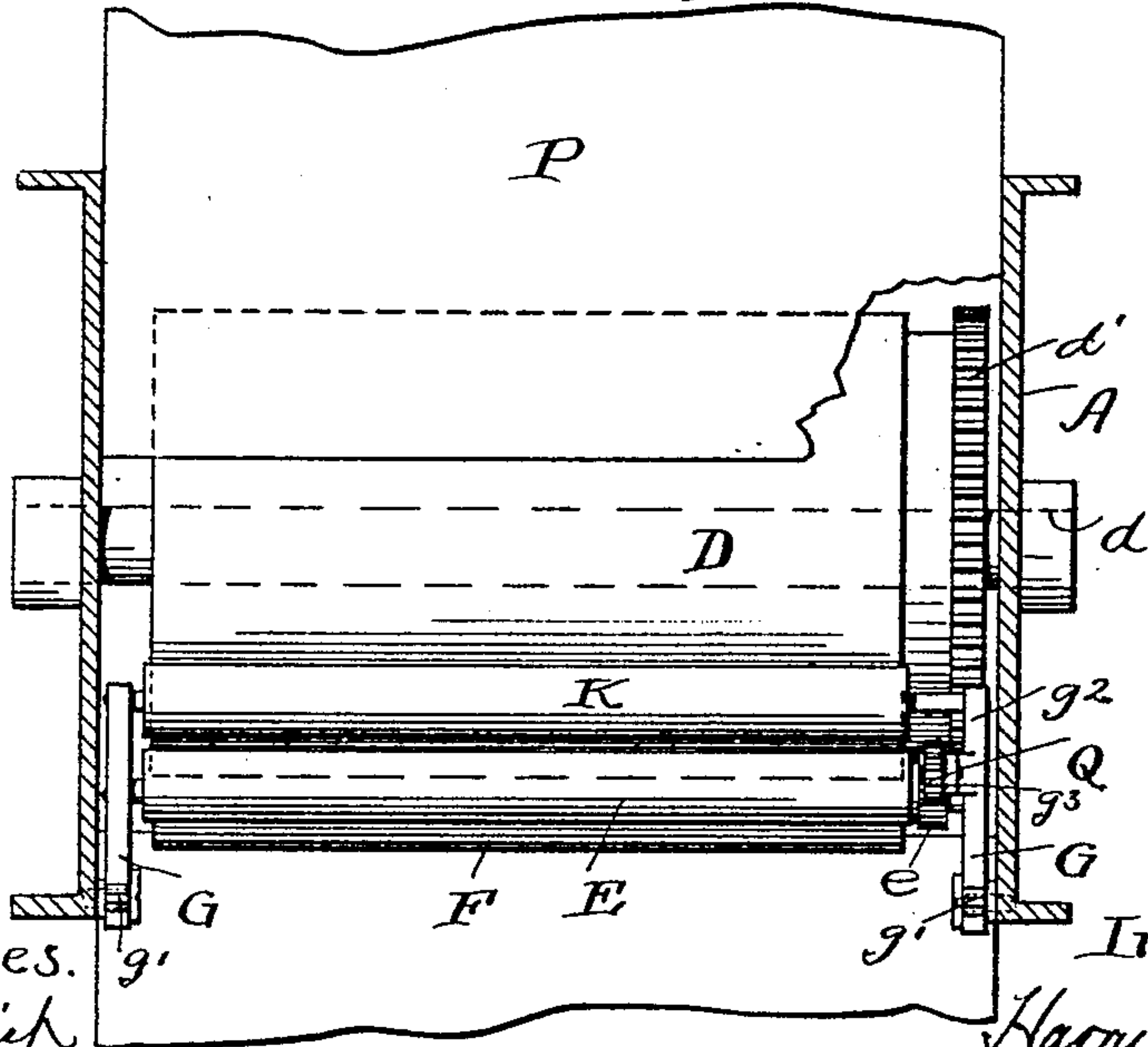


Fig. 4.



Witnesses.
E. B. Gilchrist
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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. 812,735.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Original application filed March 7, 1903, Serial No. 146,651. Divided and this application filed March 3, 1904. Serial No. 196,288.

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.

My application, Serial No. 146,651, filed March 7, 1903, shows a duplicating or printing machine adapted to print in imitation of a type-writer on sheets of paper, as a letter-head, for example. That machine comprises a supply-drum for the type, a printing-drum; mechanism for transferring the selected type from the supply-drum to the printing-drum, an impression-platen, and means for feeding the paper between the impression-platen and printing-drum as the latter is rotated to print. The present application is a division of the application referred to and relates to the means for feeding the individual sheets of paper, the object being to provide simple and efficient feeding means which shall be readily adjustable to vary the time of beginning the paper-feed. This adjustment provides for leaving a space at the top of the sheet before the printing from my machine begins, which space may be varied as desired to accommodate itself to different letter-heads, for example.

The invention may be most conveniently summarized as consisting of the means employed for attaining the above object, as hereinafter described and claimed.

The drawings clearly disclose the invention. The supply-drum for the type and the transfer mechanism, which will be employed in conjunction with the printing-drum, are not shown, as they may be of any suitable form—as, for example, that shown in my prior application referred to.

Figure 1 herein is a side elevation of a printing mechanism having my paper-feed. Fig. 2 is a vertical cross-section of Fig. 1. Fig. 3 is a vertical section substantially on the line 3-3 of Fig. 1 looking to the left. Fig. 4 is a plan with the printing-drum and its driving mechanism removed.

Referring by letters to the embodiment

shown in the drawings, A represents any suitable frame.

B is the printing-drum, mounted on the shaft *b*, which is journaled in the frame. On this printing-drum are longitudinal rails *b'*, which carry the type. Within an opening in the periphery of the drum are a pair of spools *b² b³* for the inking-ribbon, the ribbon (not shown) passing intermediately around the drum, and thus over the type carried thereby. On the shaft *b* is a gear *b⁴*, which meshes with a gear *c*, secured on the hub of a crank C. The rotation of this crank thus rotates the printing-drum B.

Journaled on a shaft *d*, beneath the printing-drum, is the impression-platen D, having a soft surface. This platen carries on its end a gear *d'*, which meshes with a gear *b⁵* on the periphery of the printing-drum. Thus the printing-drum and the impression-platen are rotated in unison, and if paper be fed to their cooperating surfaces it will be drawn between them by their rotation and will be printed by the type on the rails *b'* and the surrounding ribbon from the spools *b² b³*. Now to feed the paper to the contact-line of the two drums at any desired position of the printing-drum is the purpose of this invention. To obtain this result I, provide a pair of rubber rollers E and F, extending substantially the length of the printing-drum. The roller E is journaled at its ends in arms G, which are pivoted to the side members of the frame A. Extending downward these arms have projections *g* with slots opening downward, and in such slots take gudgeons extending from the ends of the roller F. Springs H, carried by the frame and pressing upward on these gudgeons, tend to press the rolls together. Journaled in the rear ends *g²* of the arms G is a third roller K, having a soft surface. This roller is pressed against the impression-platen by springs *g'*, extending upward from the arms G, and set-screws L, screwing through ears *a*, carried by the frame and bearing against such springs. A plate N or other table is held substantially in line with the meeting faces of the rollers E and F. Now if the roller E be rotated in the right direction paper shoved toward the rollers E and F along the surface of the table N will be drawn between those rollers and its free edge will strike the surface of the platen

D, and if at the same time this platen be rotated in the proper direction such paper will be drawn between it and the soft roller K and will thence pass between the platen and the printing-drum. It will thus be seen that the time of feed of the paper is regulated by the time when the roller E begins to rotate, for the rotation of this roller draws the paper between itself and the roller F, and thereafter the impression-platen and the roller K and then the printing-drum and impression-platen continue the feed until the paper is finally delivered in printed condition on the receiving-table P. To cause the rotation of the roller E, which initiates the feed, I provide on the end of this roller a gear e , which meshes with a pinion Q, carried by an upwardly-extending lug g^3 of one of the arms G. Around the printing-drum is a flat smooth portion b^7 beyond the rails b' , and around this smooth portion passes a band R, carrying a short rack r . In the rotation of the printing-drum this rack r engages the pinion Q, and this rotates the roller E to feed the paper, as heretofore stated. Now to vary the time of beginning the feed I simply change the position of the rack r on the printing-drum B, and this is accomplished by removing the set-screw r' , which holds the band R in position, shifting the band and relocking it. Fig. 3 shows a series of threaded holes b^8 to receive the screw r' in various positions of the band R. By this simple means the time of beginning the feed with reference to the rotation of the drum B may be regulated to always provide for the existing printing at the head of the letter, whatever its amount.

As shown in the drawings, the holes b^8 may be so placed as to give a wide range of adjustment to the segment—a range much greater than the length of the segment.

Having described my invention, I claim—

1. The combination of a printing-drum, an impression-platen therefor, a feed-initiating device adjustably mounted on the drum, feeding mechanism including a roller mounted on pivoted arms and adapted to be controlled by said device, and a spring constraining one of said arms, substantially as described.

2. The combination of a printing-drum, an impression-platen therefor, a segment carried by the drum, feeding mechanism including a roller mounted on pivoted arms, a spring constraining said arms, and a pinion carried by one of the arms and geared with said roller and adapted to be engaged by said segment, substantially as described.

3. The combination of a printing-drum, an impression-platen therefor, rollers for feeding paper between the printing-drum and platen, a band passing around the periphery of said drum, a member carried by said band for initiating the operation of the feed, and means

for adjusting said band throughout a greater distance than the length of the member carried by it, whereby the time of beginning the feed may be regulated within a wide range.

4. In a printing-machine, the combination of a printing-drum, an impression-platen, feed-rollers adapted to convey paper thereto, arms carrying said feed-rollers, a spring tending to swing said arms to cause one of the feed-rollers to bear on the impression-platen, means for adjusting said spring, a gear connected with one of said rollers, and a rack adjustably carried by the printing-drum for engaging said gear, substantially as described.

5. In a printing-machine, the combination of a printing-drum, an impression-platen, a pair of arms pivoted to the frame of the machine, springs carried by said arms, screws carried by the frame and adjustably bearing against said springs, a roller carried by said arms and forced by said springs against the impression-platen, and other rollers carried by said arms for feeding the paper to the space between the roller first mentioned and the impression-platen, substantially as described.

6. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller cooperating with the platen, a pair of arms carrying said feed-roller, another feed-roller journaled in said arms, a gear on said last-mentioned feed-roller, a rack on the printing-drum adapted to drive said gear, and the third feed-roller carried by said arms and spring-pressed toward the feed-roller which carries the gear, substantially as described.

7. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller adapted to bear upon said platen, a pair of pivoted arms in which the ends of said feed-rollers are journaled, a second feed-roller journaled in said arms, slotted extensions carried by said arms adjacent to the second feed-roller, a third feed-roller having gudgeons taking into such slots, springs bearing on said gudgeons to force the said third feed-roller toward the second feed-roller, and springs bearing on said arms to force the first feed-roller toward the platen, substantially as described.

8. In a printing-machine, the combination of a printing-drum, an impression-platen, a feed-roller adapted to bear upon said platen, a pair of arms in which the ends of said feed-roller are journaled, a second feed-roller journaled in said arms, slotted extensions carried by said arms adjacent to the second feed-roller, a third feed-roller taking into such slots, and a rack adjustably carried by the printing-drum and adapted to engage gear connected with said second feed-roller, substantially as described.

9. In a printing-machine, the combination

of a printing-drum, an impression-platen, a
feed-roller cooperating with the impression-
platen, a pair of feed-rollers in advance there-
of, means for driving one of the feed-rollers
5 of this pair, and a table adjacent to this pair
and having the plane of its upper surface sub-
stantially passing between the rollers of this
pair and striking the impression-platen adja-

cent to the roller first mentioned, substan-
tially as described.

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

HARRY C. GAMMETER.

Witnesses:

ALBERT H. BATES,
E. L. THURSTON.