

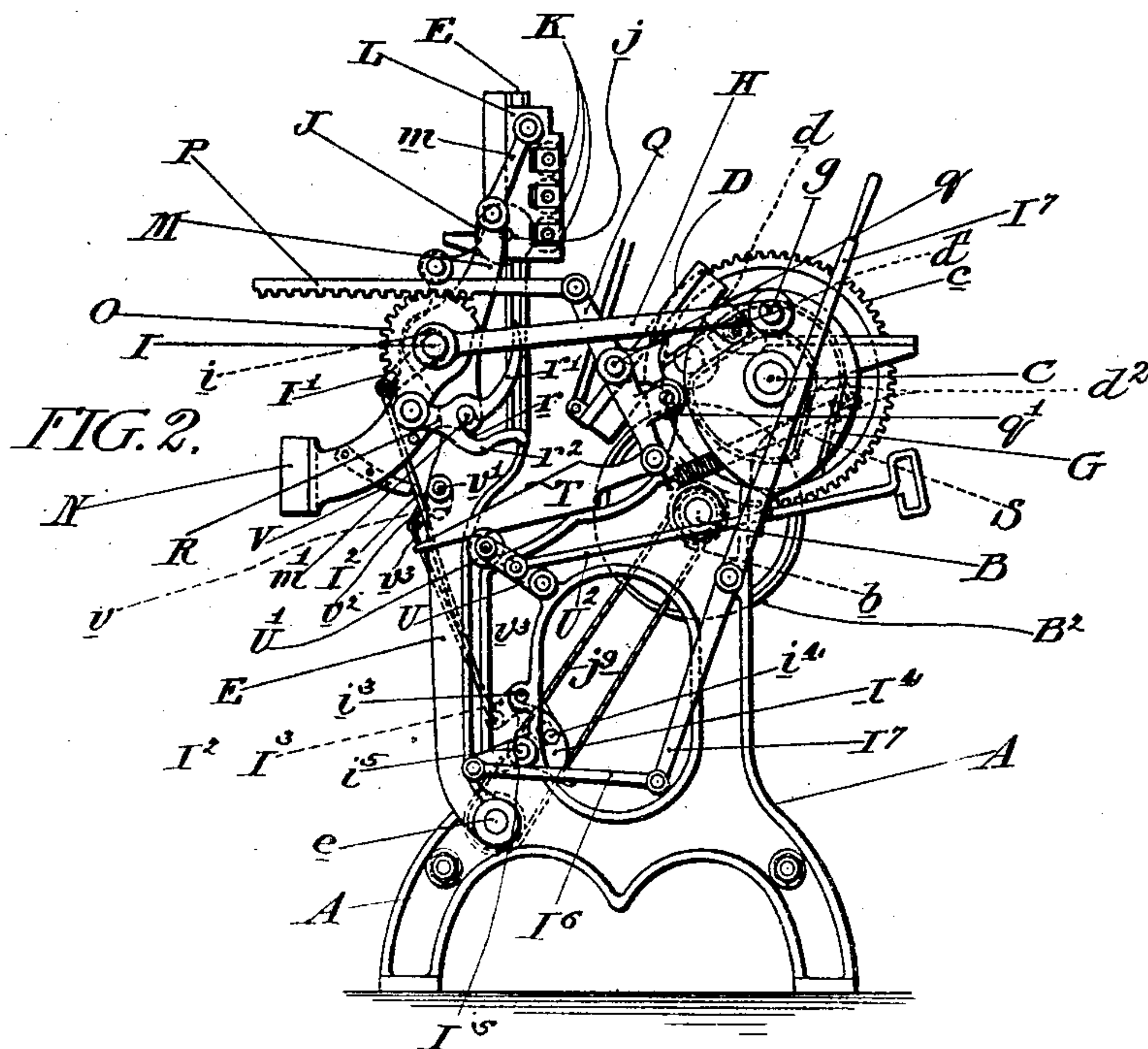
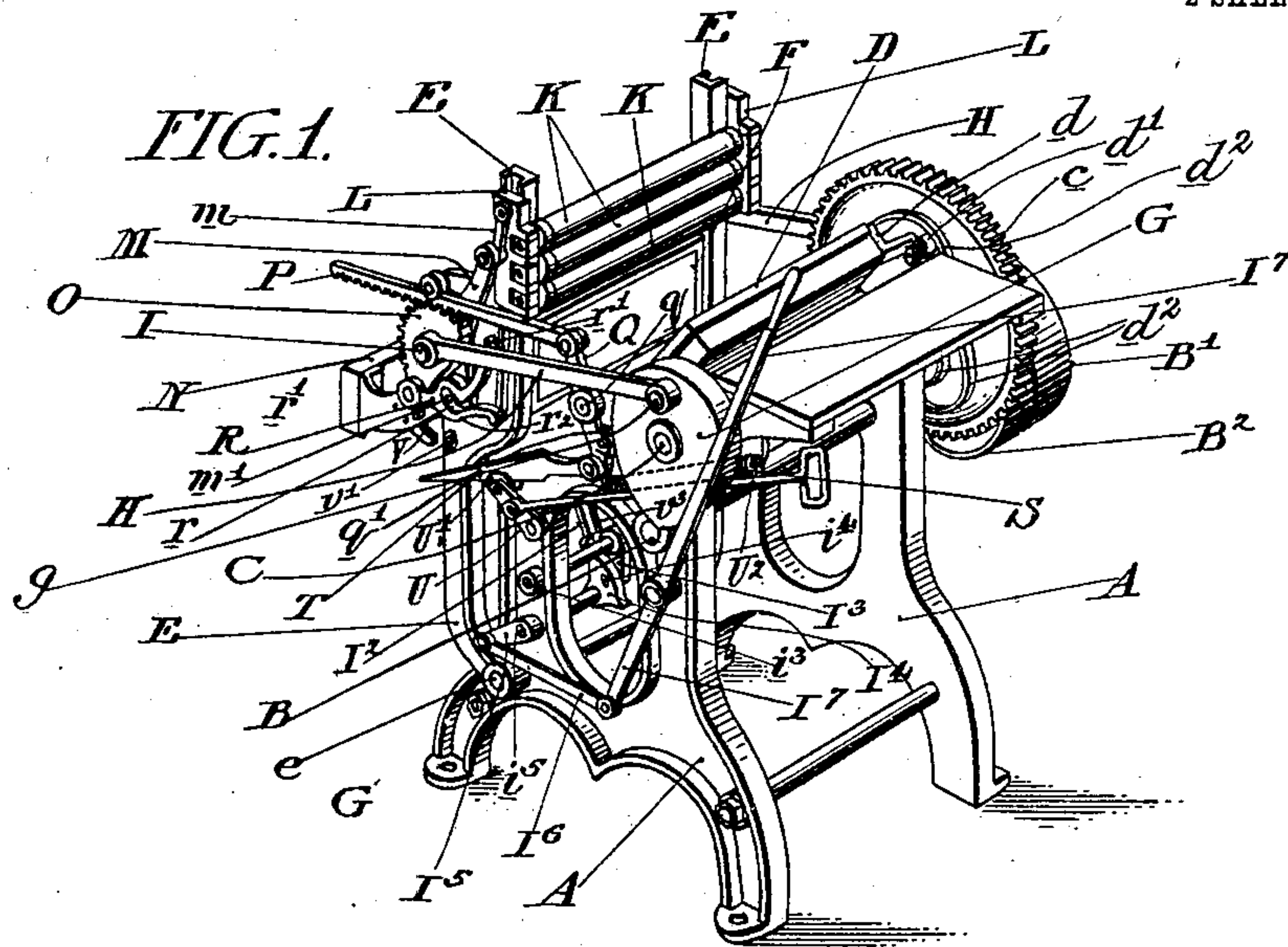
No. 814,785.

PATENTED MAR. 13, 1906.

W. HOLLAND.  
PRINTING PRESS.

APPLICATION FILED AUG. 25, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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*Norman W. Elliott*

INVENTOR

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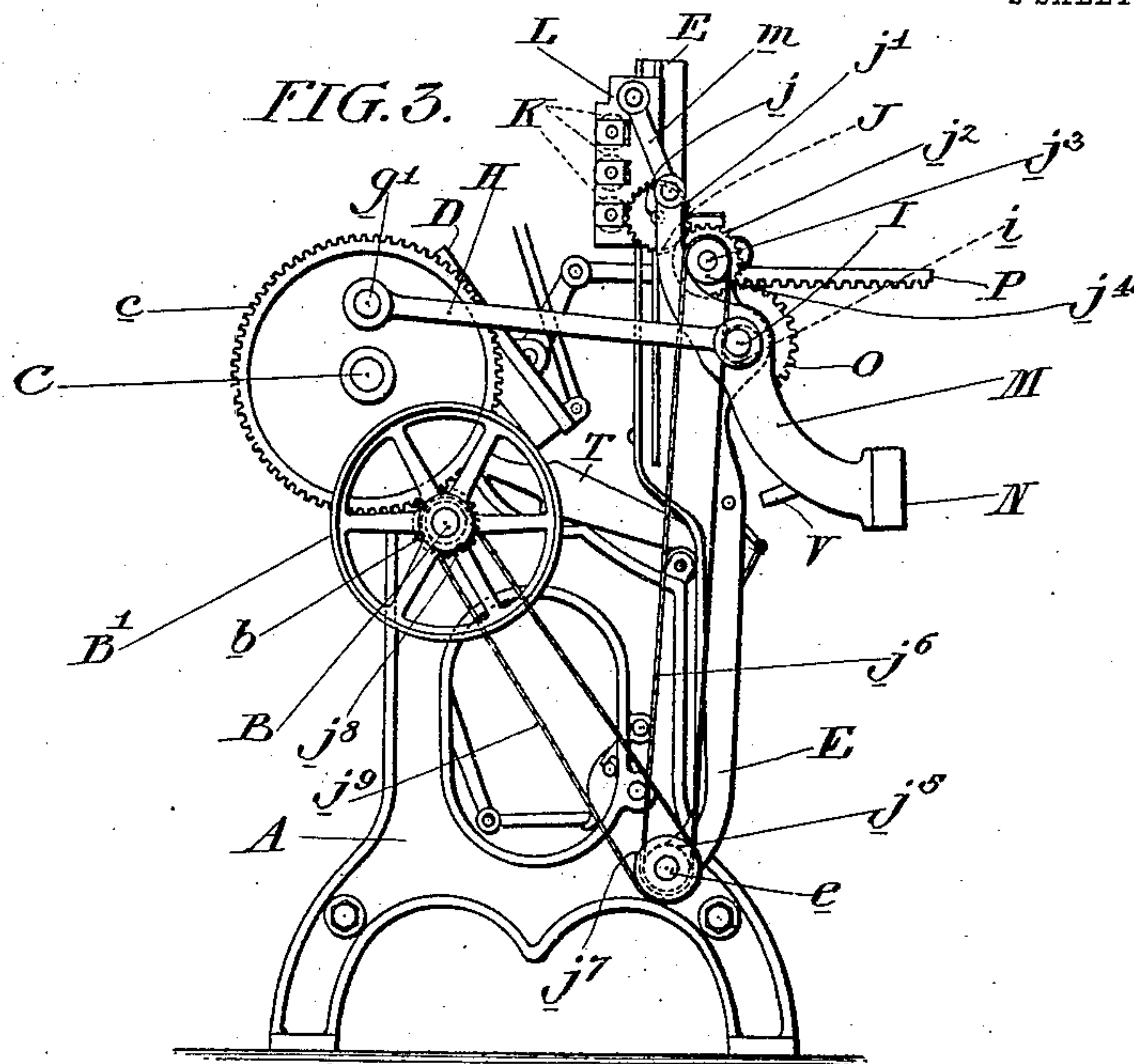
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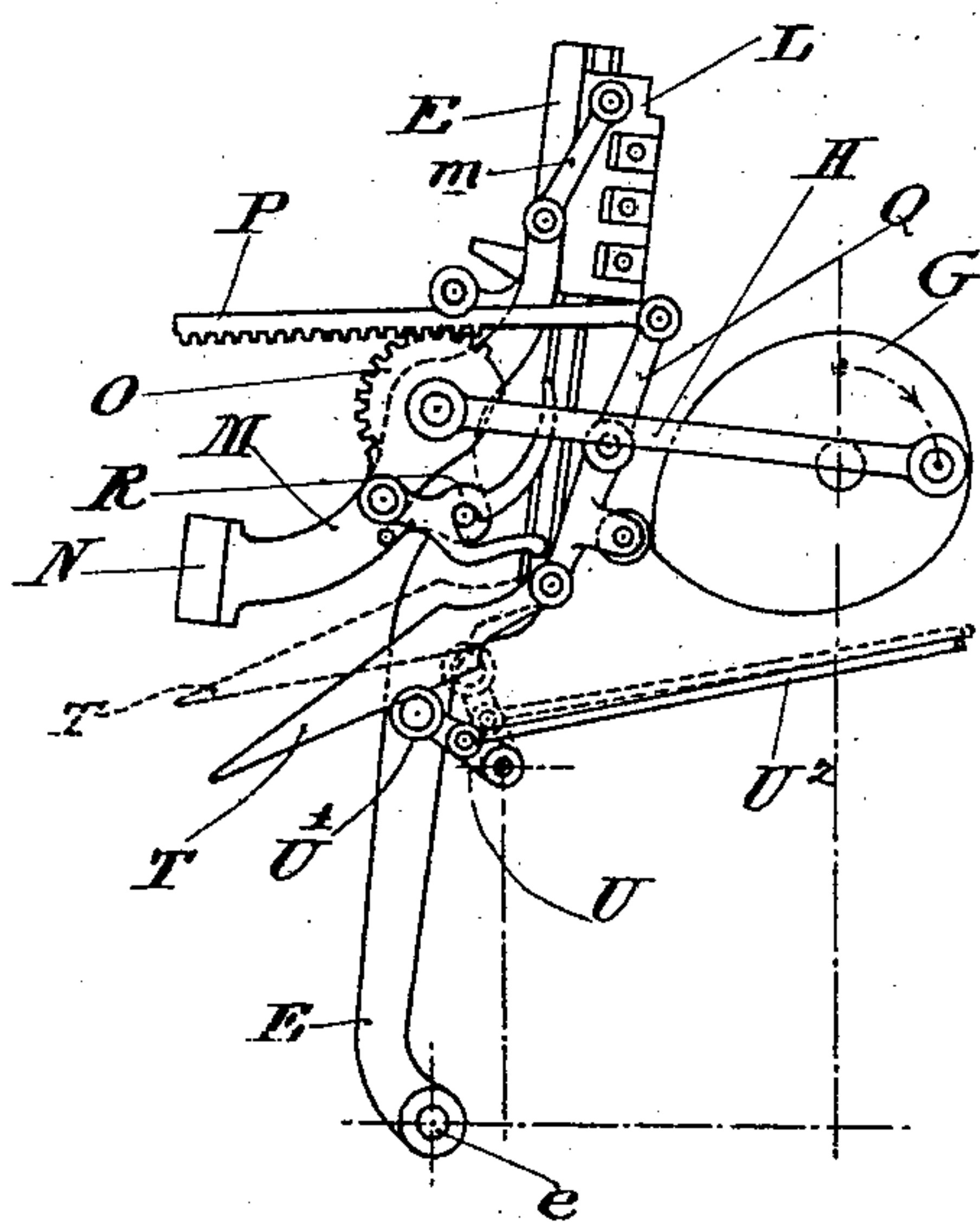
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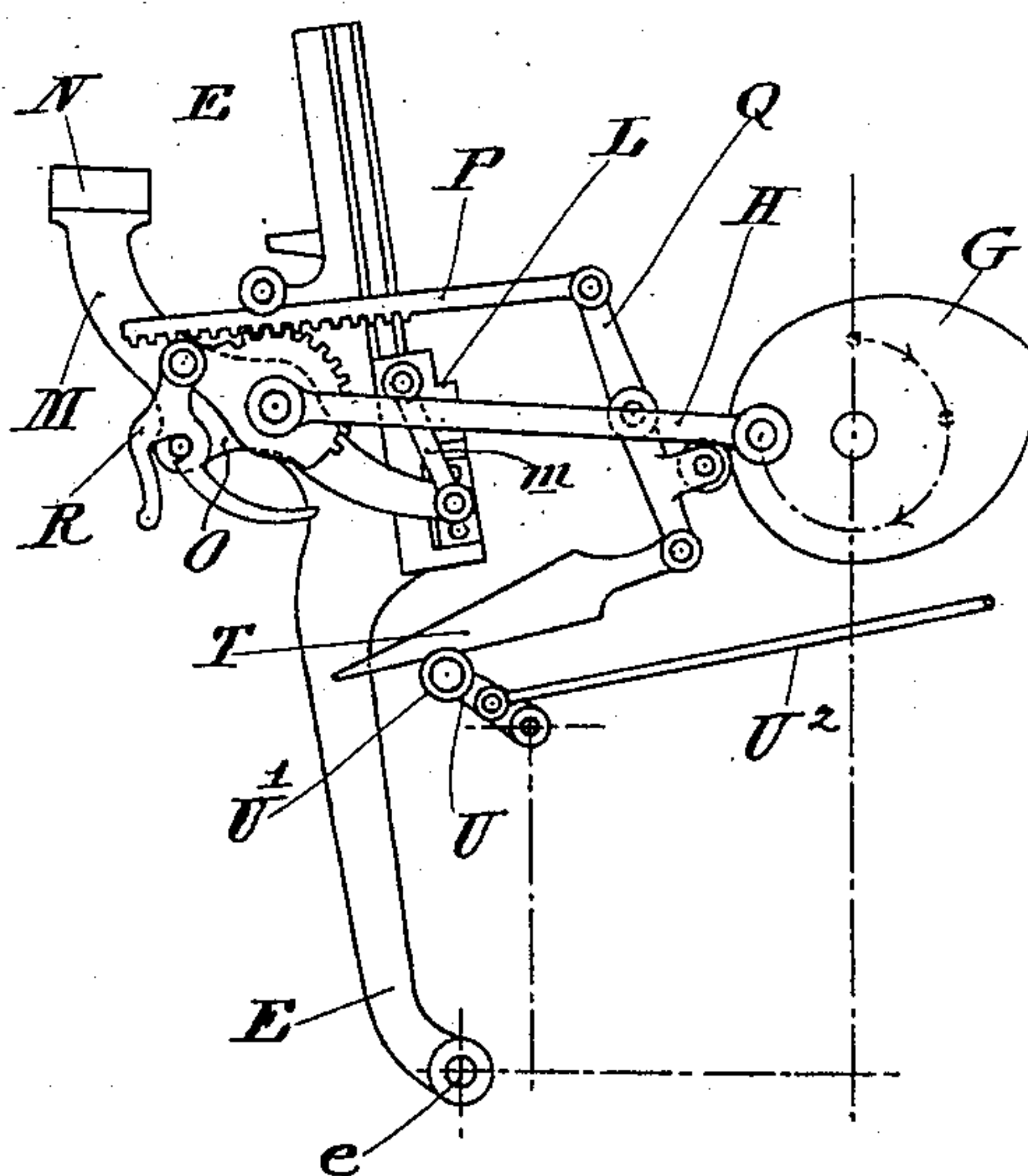
2 SHEETS—SHEET 2.



*FIG. 4.*



*FIG. 5.*



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# UNITED STATES PATENT OFFICE.

WILLIAM HOLLAND, OF PHILADELPHIA, PENNSYLVANIA.

## PRINTING-PRESS.

No. 814,785.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed August 25, 1904. Serial No. 222,053.

*To all whom it may concern:*

Be it known that I, WILLIAM HOLLAND, a subject of the King of Great Britain, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification.

My invention relates to the well-known class of printing-presses in which the bed is caused to reciprocate to and from an oscillatory platen.

In the present invention I employ one or more form-inking rollers, which are mounted upon the reciprocating bed and travel upon the same, the rollers receiving a supply of ink from a rotatable cylinder journaled in the bed.

My invention consists in the first instance of a mechanism to operate these rollers to cause them to travel over the face of the form with a more rapid movement than heretofore practiced; secondly, in a mechanism to trip the action of the form-inking rollers while the press is in motion and before the rollers have been brought into engagement with the form, and, thirdly, in a mechanism adapted to work in conjunction with the impression-throw-off device, so that the parts which have been tripped or stopped may be again brought into register with the moving parts.

My invention will be fully understood by reference to the accompanying pages of drawings, in which—

Figure 1 illustrates a perspective of a press embodying my improvements. Fig. 2 represents a side elevation of the press. Fig. 3 shows a similar view looking from the opposite side of the press. Fig. 4 represents a skeleton diagram of the bed in a forward or closed position with the cam-plate in two positions, the dotted position showing the cam-plate thrown into the path of the latch in which position it would trip the action of the form-inking rollers and the second position in full lines showing the cam-plate clear of the latch; and Fig. 5 illustrates a similar view with the bed in a backward or open position, showing the form-inking rollers after they have traveled downward over the form.

A denotes the main frame or stationary part of the press.

B is the main driving-shaft, which is journaled in the main frame. C represents the

crank-shaft, which is also journaled in the main frame and driven from the main driving-shaft B by a pinion *b* thereon, engaging a spur-gear *c*, mounted upon the end of the shaft C.

The main driving-shaft B may be operated by a treadle, or, as shown in the drawings, may be provided with fast and loose driving-pulleys B' and B<sup>2</sup>.

D is a platen mounted in the frame of the press and provided at one side with a bracket *d*, supporting a roller *d'*, which is operated to cause an oscillatory movement of the platen by means of a cam *d<sup>2</sup>*, connected to or forming a part of the spur-gear *c*.

E is the reciprocatory bed, and F is the form mounted in the bed. Motion is imparted to the bed E to cause it to reciprocate by crank-pins *g* and *g'*, one of which is mounted upon a cam G and the other upon the gear-wheel *c*. Upon the above-mentioned crank-pins are mounted connecting-rods H H, which connect the crank-pins with a shaft I, journaled in the bed E. In the bed E is also journaled an inking-roller J, mounted upon a shaft *j*, which may be driven from the main driving-shaft by any suitable train of gearing. As shown in the drawings, the shaft *j* is provided with a spur-gear *j<sup>1</sup>*, which meshes with a corresponding gear *j<sup>2</sup>*, mounted upon a stud *j<sup>3</sup>*. The gear *j<sup>2</sup>* is joined to a sprocket-wheel *j<sup>4</sup>*, which is operatively connected to a sprocket-wheel *j<sup>5</sup>* by a sprocket-chain *j<sup>6</sup>*, the sprocket-wheel *j<sup>5</sup>* being mounted upon a shaft *e*, forming the fulcrum of the bed E. Connected to the sprocket-wheel *j<sup>5</sup>* is a similar wheel *j<sup>7</sup>*, which is driven from the main driving-shaft B by a sprocket-wheel *j<sup>8</sup>* and sprocket-chain *j<sup>9</sup>*.

K K, &c., are the form-inking rollers, which are journaled in a carriage L, guided upon the bed E. The carriage L, as shown in Fig. 1 of the drawings, is formed of two pieces which are connected to and operated by rocking arms M M through the medium of connecting-links *m m*. The rocking arms M are fulcrumed to the shaft I and at their free ends are connected together by a counterweight N.

On the shaft I is loosely journaled a segmental pinion O, which meshes with a rack-arm P, connected to a rocking lever Q. This rocking lever is fulcrumed to the frame of the machine at a point *q* and is provided with a roller *q'*, which is caused to traverse the face of the cam G by a spring S, interposed between the lower end of the rocking lever and



the frame of the machine. The segmental pinion O is provided with an extension or boss to which is fulcrumed a latch R, and in like manner one of the arms M is extended and provided with a pin  $m'$ . The latch R is notched out at a point  $r$  to receive the pin  $m'$ , so that normally the latch acts as a connecting-link to unite the segmental pinion O and rocking arm M and cause them to move together. At certain times, however, during the operation of a printing-press it is not desirable to have the form-inking rollers traverse the form and deposit thereon an excessive layer of ink, and as it is impracticable to periodically stop the press it becomes necessary to provide some means by which the form-inking rollers and their connections may be disconnected from the other working parts of the press. In the present instance I accomplish this result in the following manner: Formed upon the latch R are two prongs  $r'$  and  $r''$ , the former serving to guide the latch back into engagement with the pin  $m'$  after the pin has been released and the latter acting in conjunction with a cam to trip the latch R. A cam-plate T, which is made in the form of a wedge and connected at one end to rocking lever Q, is designed as a tripping-cam. The free end of this cam is supported by a grooved roller U', journaled at the end of a small arm U, fulcrumed to the frame of the press. To the arm U is pivoted a rod U<sup>2</sup>, which passes through a guide-plate on the frame of the press and has a handle by which it may be manually operated.

In the diagram, Fig. 4, the dotted lines serve to indicate the position the cam-plate T will assume when it is desired to trip the latch R. In the diagram just referred to the bed E is shown in a forward or closed position, which is the only position of the bed at which the tripping of the latch takes place, and when in this position if the cam-plate be raised, as shown in dotted lines in Fig. 4, it will intercept the path of the lower prong of the latch, which upon striking the cam-plate will release the latch from the pin  $m'$ , and under the action of the counterweight N the form-inking rollers will return to the position they occupy in Fig. 4.

At points where the shaft I is journaled in the bed E are impression-throw-off cams  $i$ , securely fastened to the shaft and operated by the arm I', which is also fastened to the shaft. To the arm I' is journaled a rod I<sup>2</sup>, the lower end of which is connected to a bell-crank lever I<sup>3</sup>, mounted upon a shaft  $i^3$ . One of the arms of the bell-crank lever I<sup>3</sup> is recessed, forming a yoke to receive a pin  $i^4$  on a segment I<sup>4</sup>. The segment I<sup>4</sup> is mounted upon a shaft  $i^5$ , which has at its outer end a crank-arm I<sup>5</sup>, connected to a rod I<sup>6</sup>, which in turn is connected to the lower end of the impression-throw-off lever I<sup>7</sup>, fulcrumed to the frame of the press.

The impression-throw-off mechanism just described is common to a number of presses of this type and does not, therefore, form any part of my invention. I desire, however, to employ this mechanism, together with other devices, for the purpose of bringing the rocking arm M and its pin  $m'$  into register with the latch R when the cams  $i$  have been turned and the impression thrown off, and in order to accomplish this it is necessary to check the movement of the rocking arm M by causing it to rest against a stop of some description before it reaches the full extent of its movement. The means which I have employed to accomplish this purpose consists of a cam  $v$ , which is adapted to be thrown into and out of the path of engagement of a finger V, which is fastened to or may form a projecting part of the arm M. The cam  $v$  acts as a stop to limit the movement of the arm M and by so doing will bring the pin  $m'$  again into register with the latch R after it has been released. The cam  $v$  is mounted on a shaft  $v'$ , which has a crank-arm  $v^2$  connected to the bell-crank lever I<sup>3</sup> by a connecting-rod  $v^3$ . The bell-crank lever I<sup>3</sup>, as previously stated, forms part of the impression-throw-off mechanism and as such may be manually operated by the lever I<sup>7</sup>. By this means I am enabled to correct the change of center produced by the operation of the impression-throw-off mechanism and place the pin  $m'$  in proper position to engage the latch R when the impression is off.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A printing-press comprising in combination, a stationary frame provided with an oscillatory platen, a reciprocatory bed, a carriage mounted upon the bed and provided with inking-rollers, an inking-cylinder journaled in the bed, a rack-and-pinion mechanism for operating the carriage, and a cam adapted to operate the rack and by a connecting-link simultaneously move the bed substantially as specified.

2. A printing-press comprising in combination, a stationary frame provided with an oscillatory platen, a reciprocatory bed fulcrumed at the base of the frame, an inking-cylinder journaled in the bed, a carriage guided upon the bed, rocking levers fulcrumed to the bed and operatively connected to the carriage and a cam adapted to operate the rocking levers and to simultaneously operate the bed substantially as specified.

3. A printing-press, in combination with the stationary frame, oscillatory platen, and reciprocatory bed, a carriage guided upon the bed and provided with inking-rollers, an inking-cylinder, rocking levers fulcrumed to the bed, links interposed between the rocking levers and carriage, a rack-and-pinion movement for operating the rocking levers, and a



cam for operating the rack-and-pinion movement, substantially as specified.

4. A printing-press in combination with the main frame and platen; a reciprocatory bed, an inking-cylinder rotatable therein, a roller-carriage guided upon the bed, rocking levers connected to a shaft carried by the bed, links interposed between the rocking levers and carriage, a pinion mounted upon the shaft carrying the rocking levers, a rack operatively connected to said pinion, and a cam for operating the rack, substantially as specified.

5. A printing-press in combination with the frame and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and connected at their inner ends by links to the roller-carriage, a counterbalance-weight connected to opposite or outer ends of rocking levers, a segmental pinion detachably secured to one of the rocking levers, a rack engaging said pinion and a cam for operating said rack, substantially as specified.

6. A printing-press, in combination with the frame, and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and connected to the carriage by links, a counterbalance-weight fastened to the other ends of the rocking levers, a pinion journaled upon the fulcrum of said levers, a latch interposed between the pinion and one of the rocking levers, means to cause the engagement and disengagement of the latch with the rocking lever, a rack meshing with said pinion and a cam for operating the rack, substantially as specified.

7. A printing-press, in combination with the frame and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage guided upon the bed, a shaft extending across the bed, rocking levers fixedly secured to the shaft, a pinion loosely mounted upon the shaft, a latch fulcrumed to the pinion at one end and detachably secured to one of the rocking levers at its opposite end, means to cause the latch to become engaged and disengaged with a rocking lever, a rack meshing with said pinion, and means for operating the rack, substantially as specified.

8. A printing-press in combination with the frame and platen, the reciprocatory bed

and its inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and linked to the carriage, a pinion, means for operating the pinion, a latch interposed between the pinion and one of the rocking levers, means to cause said latch to become engaged and disengaged with the rocking lever, an impression-throw-off mechanism, a cam working in conjunction with the throw-off mechanism and so interposed between it and one of the rocking levers as to limit the upward movement of the rocking arm and place the latch in proper position to engage the same.

9. In combination with the stationary frame and its platen; the reciprocatory bed and its inking-cylinder, the roller-carriage, rocking levers fulcrumed to the bed and united together at their outer ends by a counterweight, a pinion, a rack in engagement therewith, a latch interposed between the pinion and one of the rocking levers, a lever fulcrumed to the frame and connected at one of its ends, to the above-mentioned rack, a cam-plate fulcrumed to the opposite end of said lever, a cam adapted to operate said lever in one direction against the action of a spring, and means for lifting the cam-plate and to cause it to disengage the latch when the bed begins to move away from the frame, substantially as specified.

10. In combination with the stationary frame and its platen; the reciprocatory bed and its inking-cylinder, rocking levers fulcrumed to the bed, a counterbalance-weight for said levers, a pinion, a rack in engagement therewith, an interposing latch between the pinion and one of the rocking levers, a cam for operating said rack, a cam-plate adapted to be moved into the path of the latch to release the same from engagement with its rocking lever, an impression-throw-off mechanism and a cam operated in conjunction therewith to cause the rocking lever to again register with the latch after it has been disengaged, substantially as described.

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

WILLIAM HOLLAND.

Witnesses:

DAVID S. WILLIAMS,  
ARNOLD KATZ.