

C. VON PHILP.
FEEDING MECHANISM.
APPLICATION FILED JULY 16, 1908.

924,103.

Patented June 8, 1909.

4 SHEETS—SHEET 1.

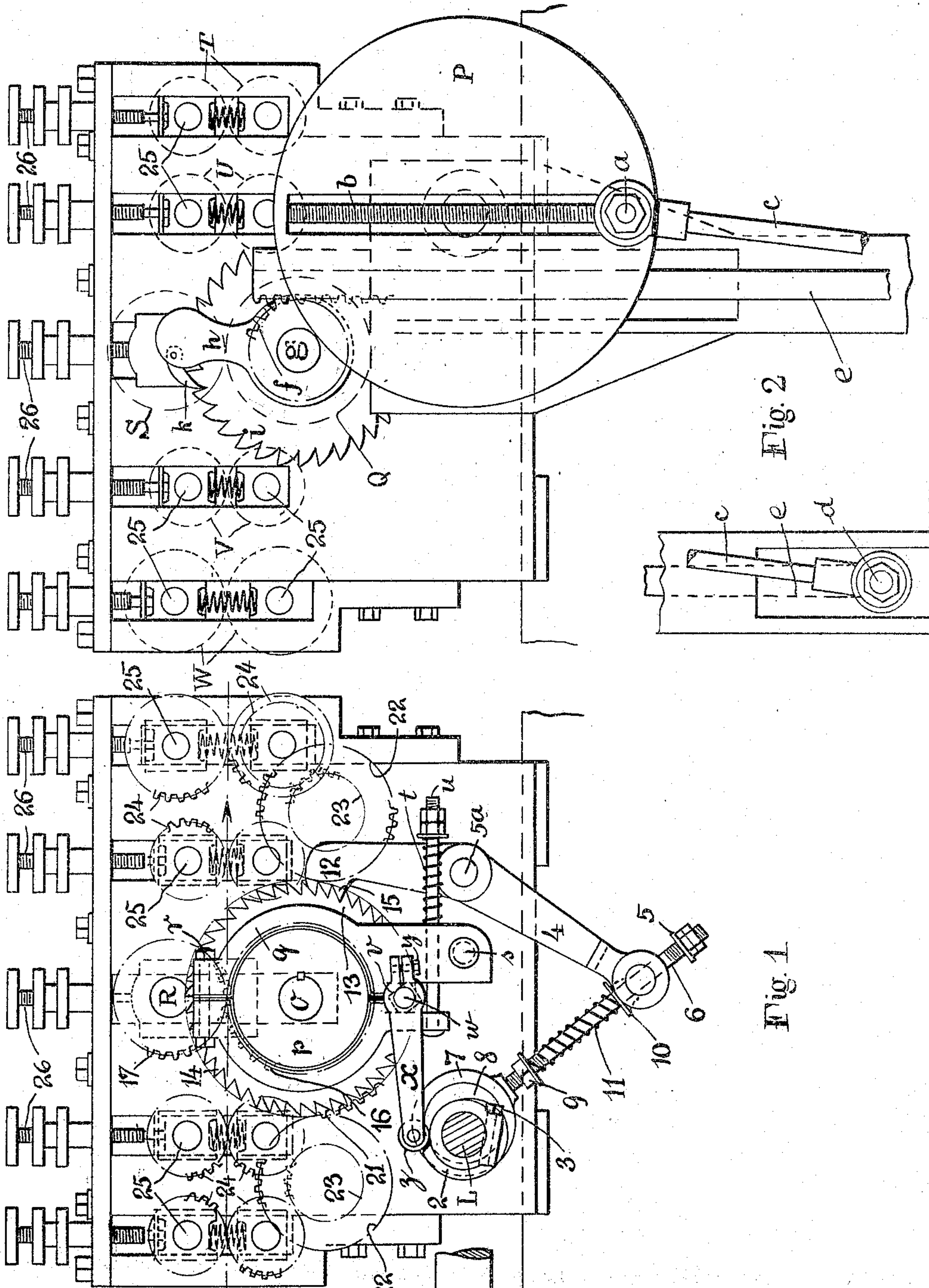


Fig. 1

Fig. 2

Witnesses
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By his Attorney
Rumsey & Ogden

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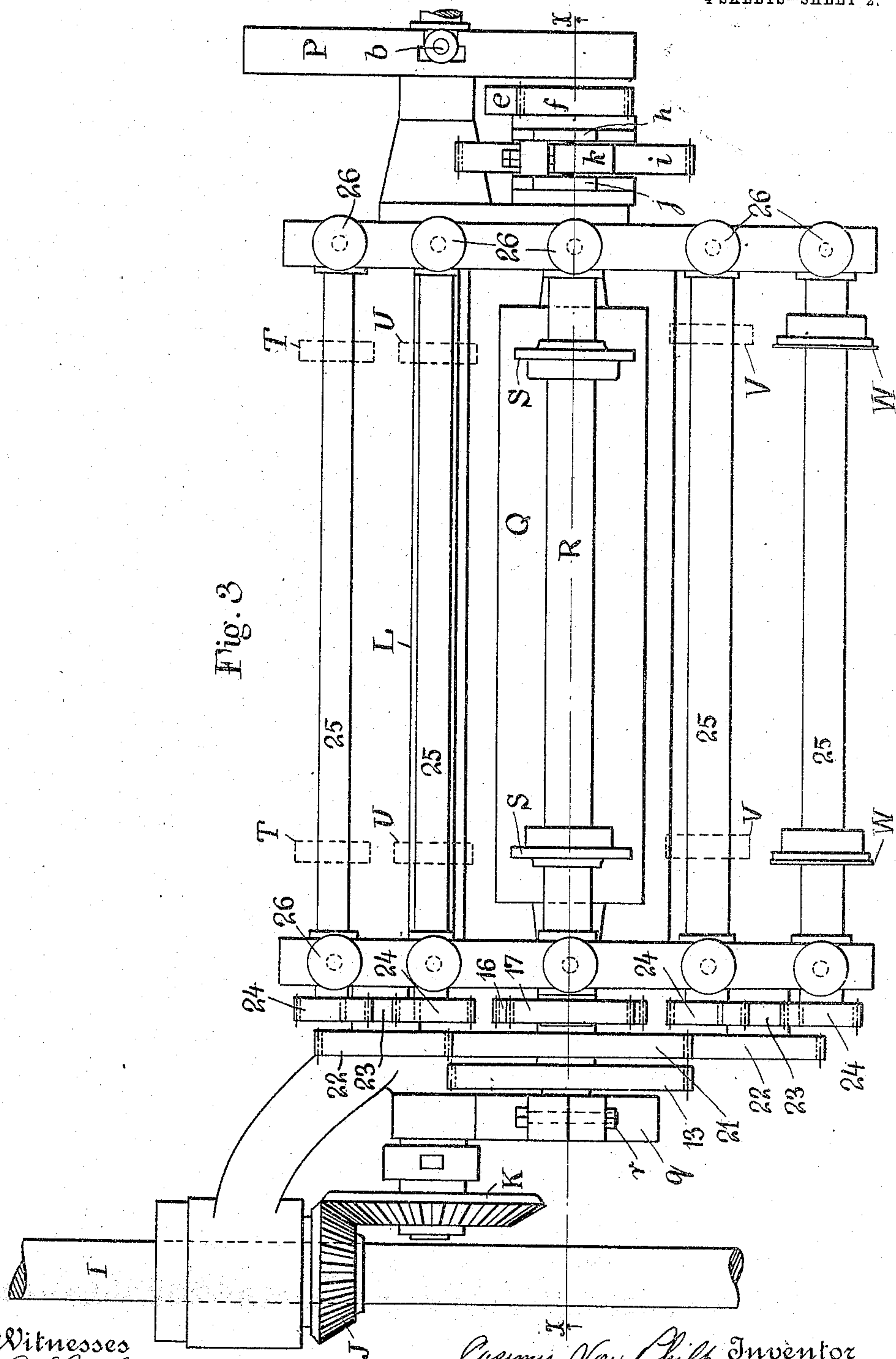


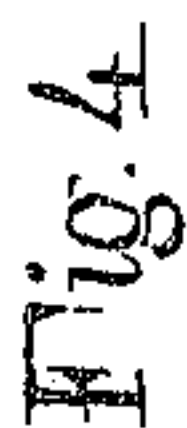
Fig. 3

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4 SHEETS—SHEET 3.



Witnesses
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By his Attorneys

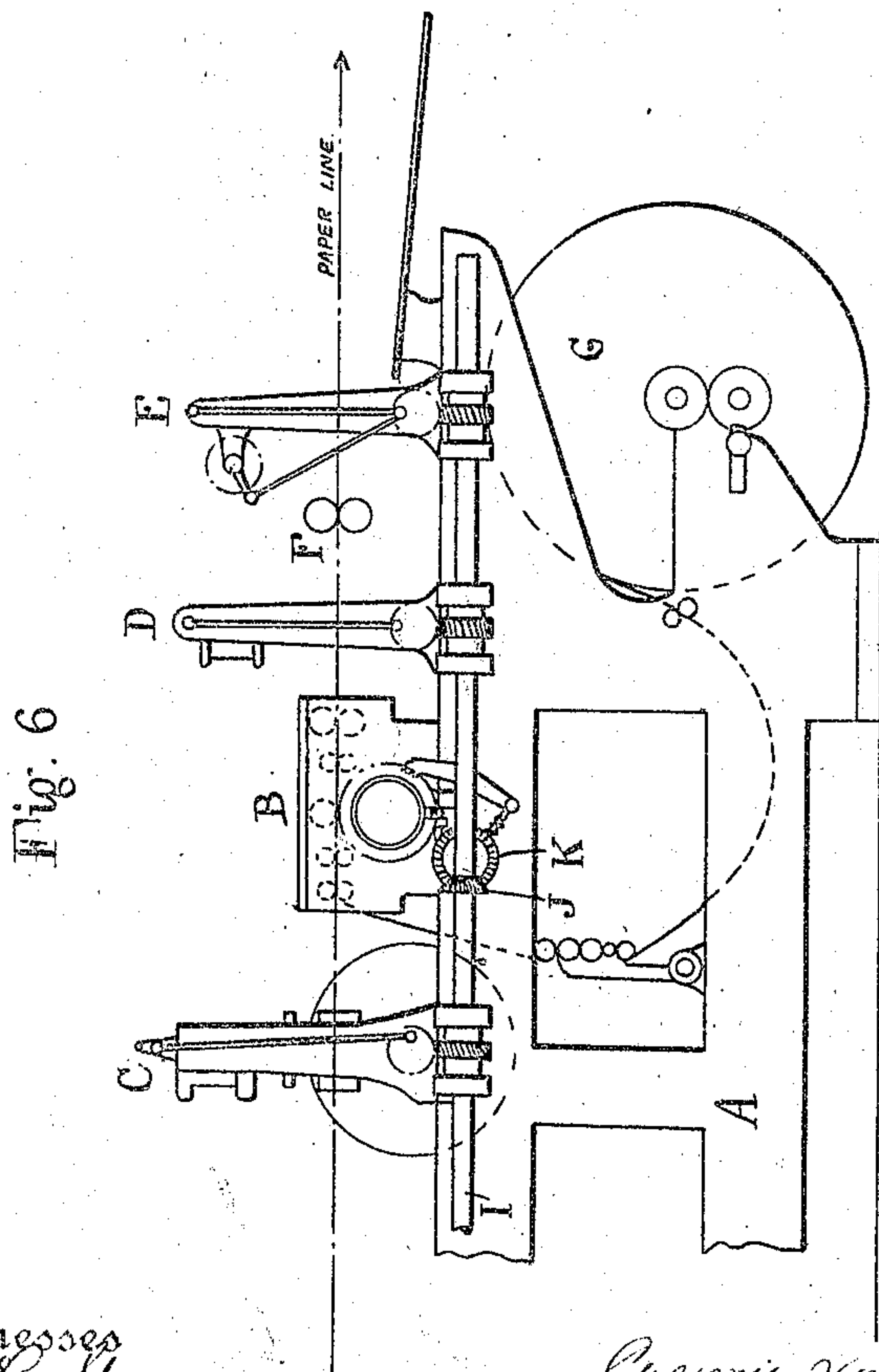
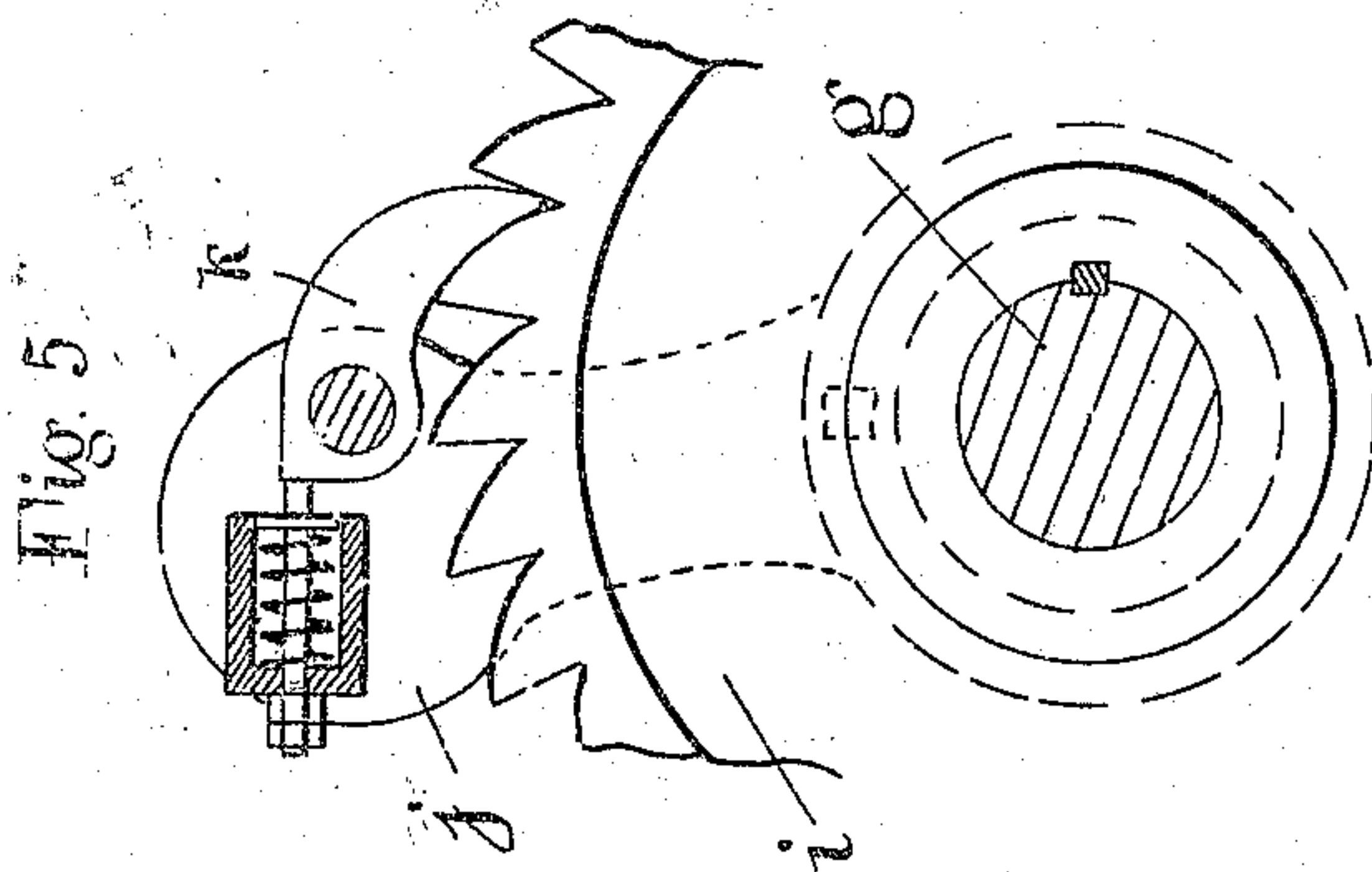
Barney Ogden

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4 SHEETS—SHEET 4.



Witnesses
E. P. La Gar
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UNITED STATES PATENT OFFICE.

CASIMIR VON PHILP, OF NEW YORK, N. Y.

FEEDING MECHANISM.

No. 924,103.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed July 16, 1908. Serial No. 443,780.

To all whom it may concern:

Be it known that I, CASIMIR VON PHILP, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Feeding Mechanism, of which the following is a specification accompanied by drawings.

This invention relates to special printing presses printing on a continuous web of paper, and the objects of the invention are to improve upon the construction of the feeding mechanism for such presses, enable close register with high speed to be obtained, and prevent backward movement of the feed drum as the drum is brought to rest intermittently.

Further objects of the invention will hereinafter appear, and the invention embodies the features of construction, combinations of elements, and arrangement of parts substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a front end elevation of the feeding mechanism; Fig. 2 is a rear end elevation; Fig. 3 is a plan view; Fig. 4 is a transverse sectional elevation on the line $x-x$, of Fig. 3, looking in the direction of the arrows; Fig. 5 is an enlarged detail view of the ratchet and pawl device; and Fig. 6 is a side elevation of a portion of the machine embodying the feeding mechanism, and the means for feeding the separating sheets between the printed sheets.

In the general assembly view, Fig. 6, A represents the frame of the press, and B is the feeding head or mechanism forming the subject matter of this invention. C is a heavy punching head, D is a light punching head or shear, which may be in the form of a perforating head. E is a multi cutting off device. F are auxiliary feed rolls, and G is the slip sheeting device. The parts C, D and E are merely shown diagrammatically, as they form no part of the present invention. The feed head B is longitudinally movable on the frame A or bed of the machine, and power is transmitted to said head through the shaft I and bevel gears J and K. Bevel gear K is carried on the shaft L extending transversely of the feeding head and supported in suitable bearings in the frame O of said head. On the other end of the shaft L is a crank disk P connected to intermittently actuate the feed drum Q. The

shaft R is actuated from the feed drums through suitable gearing, and the pressure rolls S cooperate with said drum. The feeding head is also provided with suitable devices for treating the paper, as the ruling rolls T, perforating rolls U, creasing rolls V, and slitters W connected to be actuated by suitable trains of mechanisms. The web of paper is fed along the paper line in the direction indicated by the arrow on said line. The disk P is provided with the adjustable crank pin a adapted to be moved radially by means of the screw b . The rod c connects the pin a with the pin d on a vertically movable rack e which is thereby vertically reciprocated. Meshing with the rack is a pinion f turning loosely on the trunnion g of the feed drum Q. Connected to the pinion f is an arm h , and a ratchet wheel i is keyed to the trunnion g . At the other side of the ratchet wheel is an arm j turning loosely on the hub of the wheel. Pivoted to the arms h and j is a spring pressed pawl k adapted to cooperate with the ratchet wheel i and carry said ratchet wheel forward on the up stroke of the rack e , thereby intermittently rotating the feed drum Q.

In order to obtain close register with high speed in printing, a brake is provided for positively retarding the feed drum at the end of each intermittent forward rotation, and this brake is automatically released at intermediate intervals. Secured to the trunnion o of the feed drum Q is a brake pulley p provided with a divided brake shoe q bolted together by means of the bolt r and having one section secured to the frame of the feeding head by the pin s . The sections of the brake shoe are normally pressed toward each other by the spring t on the bolt u , but held apart by the squared portion v of the pin w inserted between the ends of the shoe. A lever x is adjustably clamped to the pin w by means of the bolt y to enable the throw of the lever x to be varied and thus vary the brake pressure. The lever x is provided with a roller z at its outer end bearing upon the cam 2 adjustably secured to the shaft L by means of the adjusting pin 3, so that the angular position of the cam on the shaft may be changed, in order to time the operation of the brake as desired. In accordance with this construction, when the roller z is on the high portion of the cam 2, the squared portion v of the pin w is carried into such position that the shoe is

loosened on the brake pulley *p*. As soon, however, as the roller *z* drops to the low portion of the cam 2, the squared portion of the pin *w* is turned to permit the spring T to press the sections of the brake shoe together and retard the feed drum at the exact point desired. The brake is then released as the roller *z* rises on the high portion of the cam 2. The intermittent motion of the feed drum and the operation of the brake are so timed that the feed drum is retarded automatically at the end of each forward movement.

A toothed feeding device 4 is pivoted on the pin 5^a to the frame of the feeding head and connected to be actuated at its lower end by means of the stop 5 on the eccentric rod 6 carried by the eccentric strap 7 connected to the eccentric 8 on the shaft L. Between the fixed nut 9 and loose nut 10, is a spring 11, which tends to press the lower end of the toothed stop 4 in a direction to bring the toothed end 12 of the device into engagement with the teeth of the disk 13 fixed to the trunnion *o* of the feed drum, thereby positively feeding and stopping the drum at the end of each intermittent forward movement. As the eccentric 8 revolves, the stop 5 carries the lower end of the toothed device upwardly to release the disk 13. The peculiar construction of the teeth 14 of disk 13 and the teeth 15 of toothed device 12 is designed to prevent any slight backward movement of the drum at the instant that it is stopped.

As shown, the teeth 14 slope in one direction only, that is, backward or in the opposite direction to the movement of the disk 13. The teeth 15 correspond to the teeth 14, so that the disk 13 is always moved forward as the toothed feeding device 12 moves into engagement with the disk 13.

In the operation of the feeding mechanism, the brake and the toothed feeding device are normally disengaged. At the end of the stroke, the brake is first brought into action to retard the motion of the drum and bring it to a stop and the operation is so timed that the toothed feeding device 12 then engages the disk 13 and finishes the final small feeding movement of the stroke. The toothed feeding device and the brake are both disengaged before the next stroke.

Connected to the trunnion *o* of the feed drum Q is a gear 16 meshing with a pinion 17 on shaft R for driving the pressure wheels S. The shaft R is carried in adjustable bearings 18, having springs 19 and adjusting screws 20.

The ruling, perforating, creasing and slitting devices are actuated from the gear 21

on the trunnion *o*, which gear meshes with the gears 22, in turn carrying pinions 23 meshing with the pinions 24 on the shafts 25. These shafts carry the rolls for carrying out the operations referred to and all of these shafts are supported on adjustable bearings having the adjustable screws 26.

I claim and desire to obtain by Letters Patent the following:

1. In a feeding head, the combination of a feed drum, means for intermittently rotating the same, a toothed wheel connected to said drum having teeth inclined in the opposite direction to the direction of movement of the wheel, and a toothed feeding device having teeth cooperating with those on the wheel, whereby engagement of the feeding device with the wheel will always tend to move the wheel and drum in the direction of rotation.

2. In a feeding head, the combination of a frame, a feed drum mounted therein, means connected to the drum for imparting an intermittent rotation to the same, a brake pulley connected to the drum, a brake shoe comprising two members, one member being connected to the frame, a pin having a squared head mounted between the ends of said members, a rocking lever adjustably connected to rotate said pin, and an adjustable cam controlling said lever.

3. In a feeding head, the combination of a frame, a feed drum mounted therein, means connected to the drum for imparting an intermittent rotation to the same, a brake pulley connected to the drum, a brake shoe comprising two members, one member being connected to the frame, a pin having a squared head mounted between the ends of said members, a rocking lever adjustably connected to rotate said pin, and an adjustable cam controlling said lever.

4. In a feeding head, the combination of a feed drum, means for intermittently rotating the same, a brake for the drum, means for automatically applying the brake at the end of the stroke of the drum and releasing the brake thereafter, a positive feeding device for the drum, and means for automatically applying the feeding device at the end of the stroke of the drum and releasing the feeding device thereafter.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses, July 10, 1908.

CASIMIR VON PHILP.

Witnesses:

E. VAN ZANDT,
E. P. LA GAY.