Jan. 2, 1923.

1,441,083.

A. HEINER.

PRINTING PRESS.

FILED FEB. 7, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

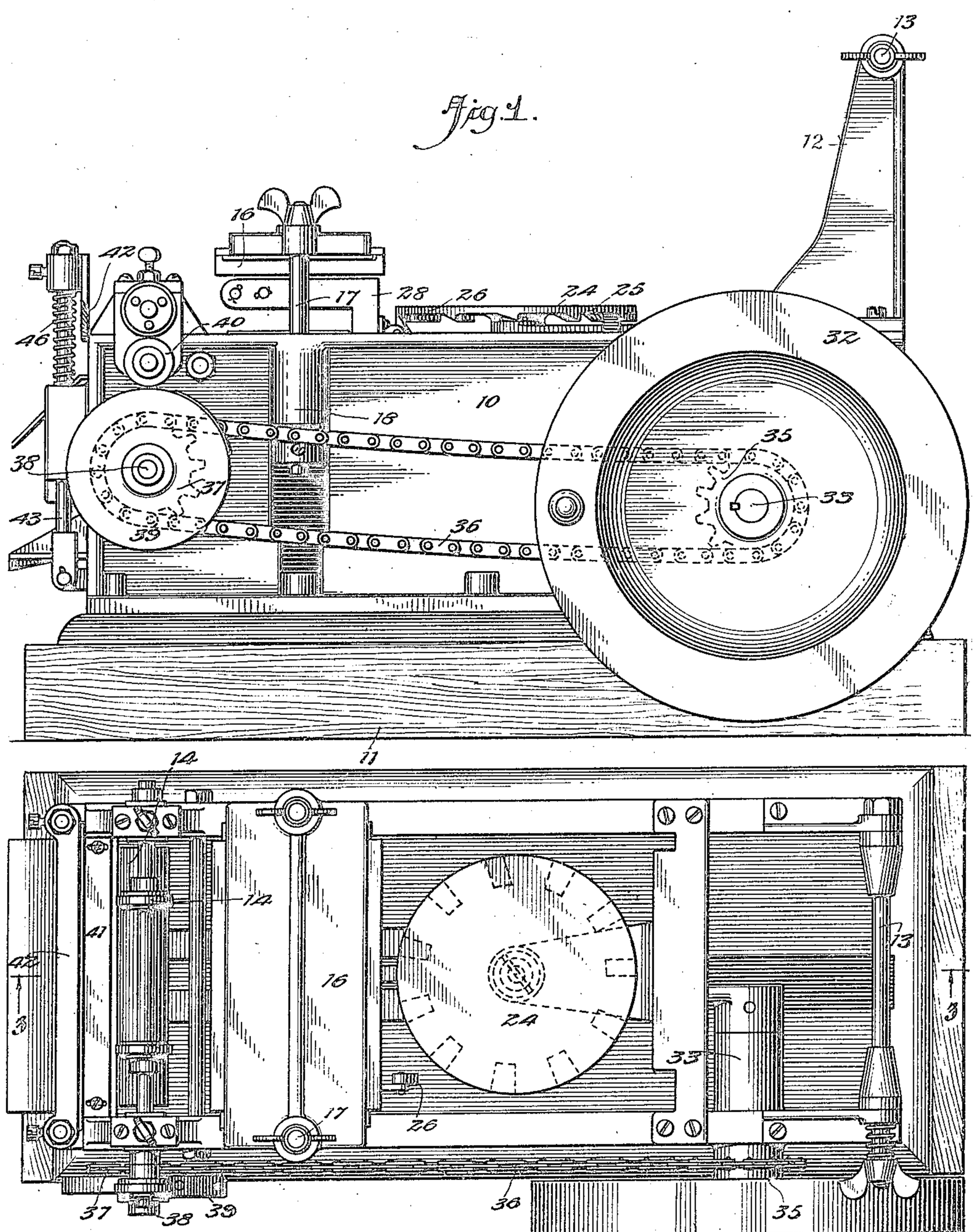

Fig. 2.

WITNESSES

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3 SHEETS—SHEET 2.

Fig. 3.

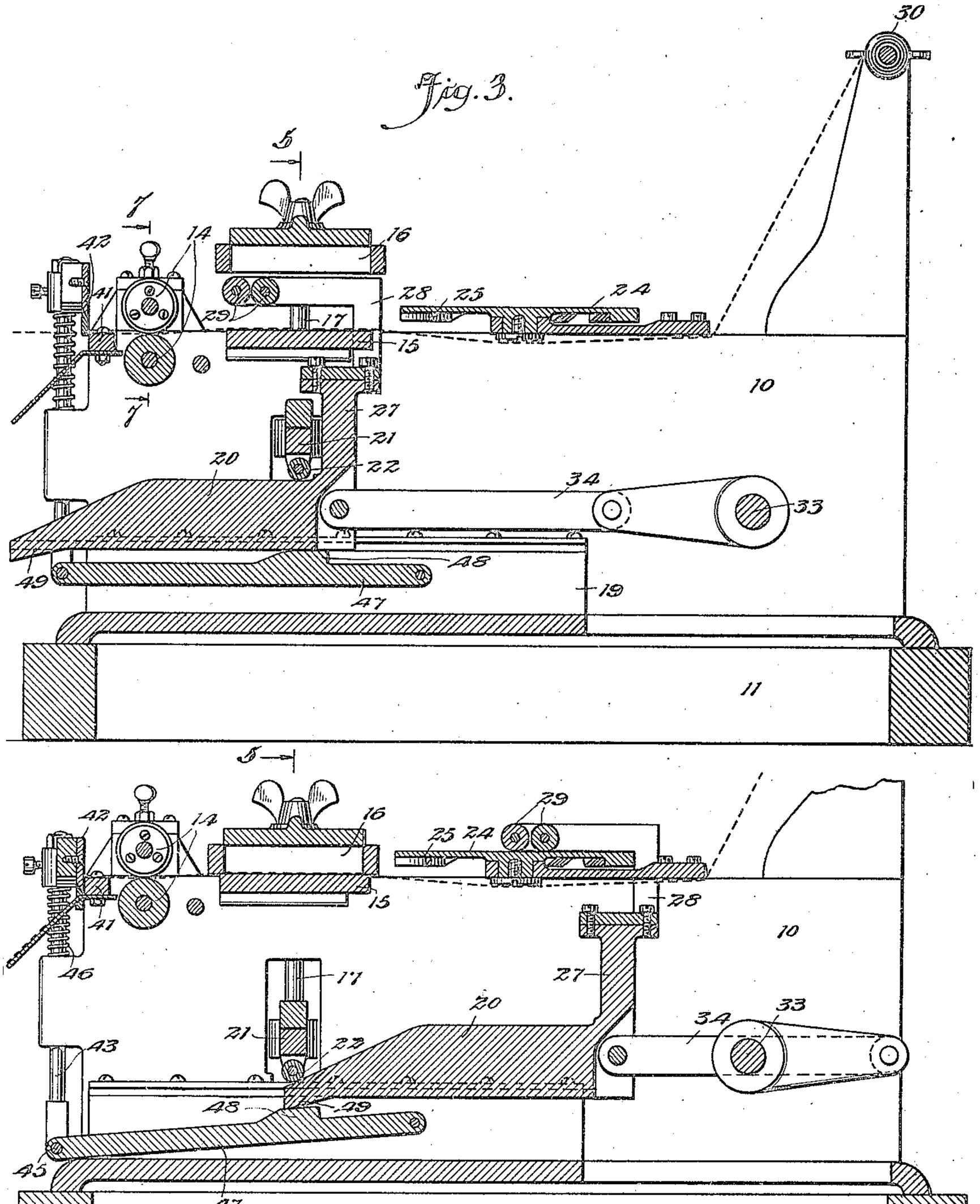

Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

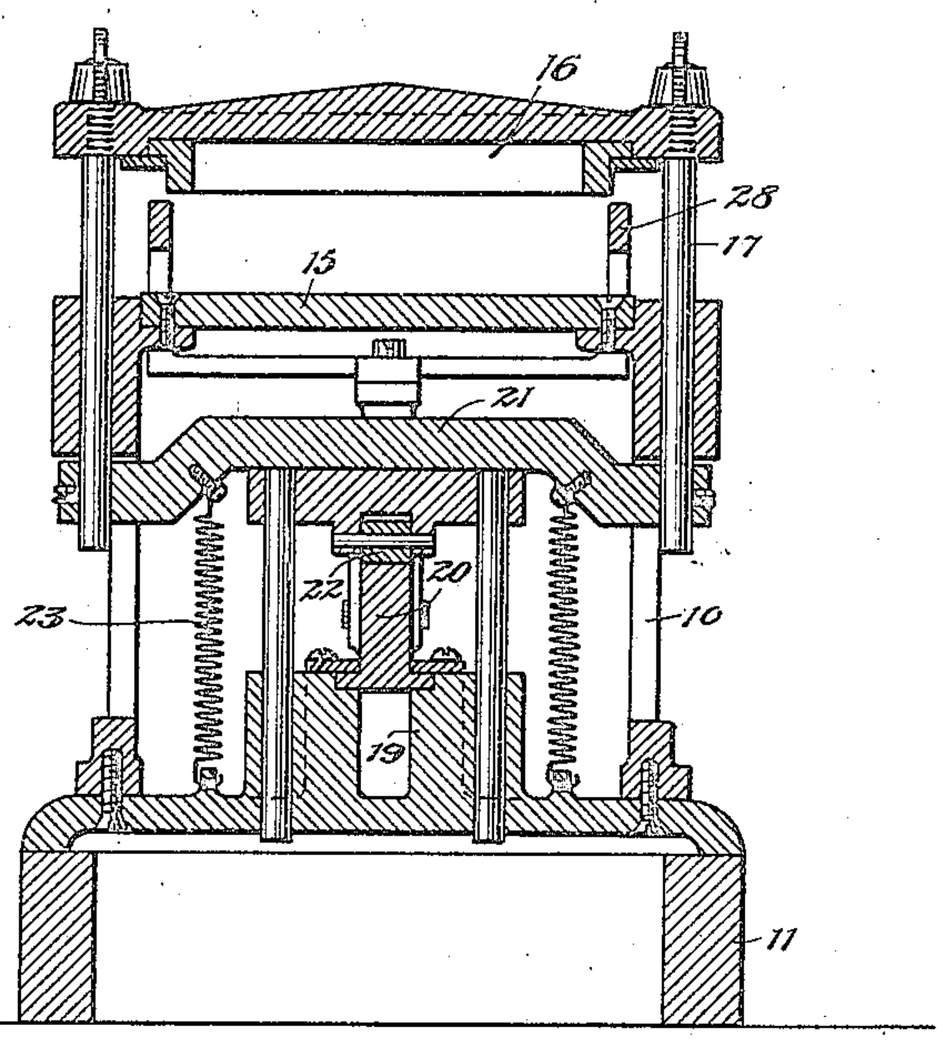


Fig. 6.

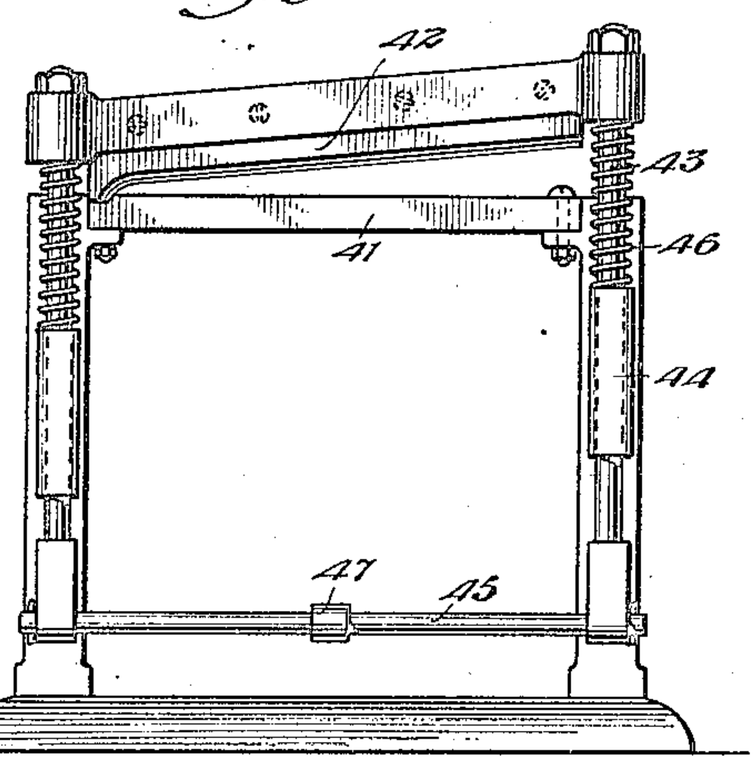
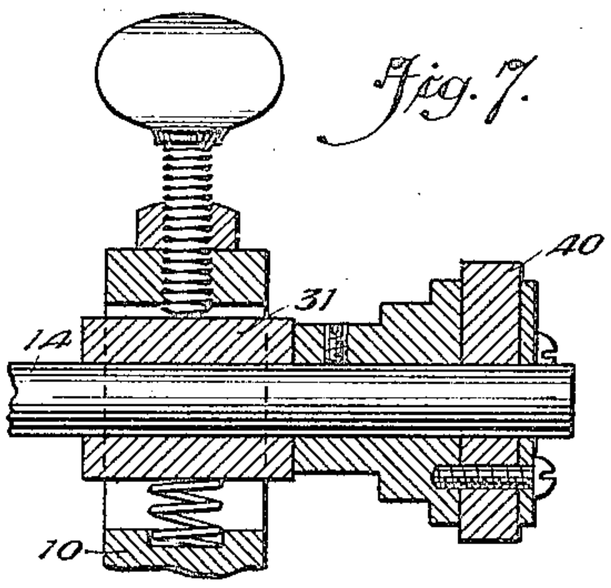


Fig. 7.



WITNESSES

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Patented Jan. 2, 1923. 1,441,083

UNITED STATES PATENT OFFICE.

ANTHONY HEINER, OF NEW YORK, N. Y.

PRINTING PRESS.

Application filed February 7, 1922. Serial No. 534,709.

To all whom it may concern:

Be it known that I, ANTHONY HEINER, a citizen of the United States, and resident of the city of New York, borough of Manhattan, county of New York, and State of New York, have invented a new and Improved Printing Press, of which the following is a full, clear, and exact description.

My invention relates to a printing press and aims to provide certain new and useful improvements in connection with a device of this character.

More particularly it is an object of this invention to provide a printing press which may be either manually operated or power driven, and which shall be extremely simple in construction, permitting of its being sold and maintained in operation at a minimum of cost.

A further object of this invention is that of constructing a device of the character stated which although embodying extremely simple construction will include an inking, printing, feeding and cutting mechanism, so that the entire operation of printing may be performed by this machine.

Still another object of this invention is that of providing a printing press in which the inking medium for the design to be imprinted will be operated in a novel manner.

A further object of the present invention is that of providing a printing press having an improved type of mechanism for effecting a printing, aside from the fact that this mechanism will serve to actuate the design to be improved in such a manner as to insure a perfect result for each operation of the machine.

Among further objects of this invention is that of constructing a press of the character stated which shall employ novel cutting mechanism for a paper, as well as feeding mechanism therefore and,

Still further objects of this invention will become apparent in the annexed specification taken in connection with the drawings, which latter illustrate one practical embodiment of the same, and in which;

Figure 1 is a side elevation of a printing press embodying my improved construction.

Figure 2 is a plan view thereof.

Figure 3 is a sectional side view taken along the line 3—3 and in the direction of the arrows indicated in Figure 2.

Figure 4 is a view similar to Figure 3 but showing the parts in a position different from that shown in Figure 3.

Figure 5 is a transverse sectional view taken along the line 5—5 and in the direction of the arrows indicated in Figure 3.

Figure 6 is a rear end view thereof, and

Figure 7 is an enlarged fragmentary sectional view taken along the line 7—7 and in the direction of the arrows indicated in Figure 3.

It will be seen in these views that the reference numeral 10 indicates the body of the machine which is preferably supported upon a suitable type of base 11, the said body mounting standards 12 adjacent its forward end, which standards support a shaft 13 adapted to receive a roll of paper to be imprinted. Also at a point adjacent the rear end of the machine, a pair of any desirable type of feed rollers 14 are mounted in a manner hereinafter specified. The paper is thus, in the usual manner supported adjacent the forward end of the machine and fed from the rear end thereof when the said press is in operation.

It will be noted that a platen 15 is fixedly supported by the body 10 of the press, and a type bed 16 of any desired character is arranged directly above the same, and is movably held in proper alignment by means of columns 17 which are connected to the said bed adjacent their upper ends and pass through suitable sleeve bearings 18 forming a part of the body 10.

With a view of moving the type bed I utilize a track 19 positioned within the body of the press, and slidably mounted upon this track is a wedge-shaped actuating member 20. The lower ends of the columns 17 are connected together by a cross bar 21 carrying a roller 22 adjacent its lower edge, and this roller is forced into intimate contact with the upper face of the actuating member 20 by utilizing springs 23 having adjacent ends connected to the body of the press and opposite ends connected to the said cross bar. Thus in addition to forcing the roller 22 into contact with the actuating member, as aforestated, it will be noted that the type bed 16 normally tends to move towards the platen 15, and from the foregoing it will be obvious, assuming that the member 20 is projected along the track 19, that the roller

22 and the cross bar 21 will ride upwardly carrying with them the column 17, and in turn moving the bed 16 away from the platen surface 15 as in Figure 3. However, a retraction of the actuating member will obviously permit the roller 22 to ride downwardly over the wedge-shaped upper face of the same allowing a corresponding movement on the part of the column 17 and causing the bed 16 to move into intimate contact with the platen 15, as in Figure 4, and assuming that type or a design is carried by the bed 16 it will be obvious that this design will be imprinted upon the receiving surface passing over the said platen.

To now provide means serving to effect an inking of the type or plate carried by the bed 16 it will be noted that I preferably utilize an inking plate 24 rotatably supported by the bed of the press and preferably arranged in advance of the type bed. This plate is provided with a series of ratchets 25 on its under face, and as has been shown in Figures 1 and 2, a pawl 26 is carried by an extension 27 of the member 20, and this pawl upon each retraction of the said member engages one of the ratchets 25 of the plate 24 thus serving to rotate the latter in the approved manner. Further the member 20 preferably mounts upon its extended portion 27, arms 28, which in turn support inking rollers 29. Thus, in addition to the occasions aforestated, upon the retraction of the member 20 being effected, these inking rollers will come in contact with the upper face of the inking plate 24, and upon the member 20 being projected and the bed accordingly raised, the rollers will engage the plate or type held by the said bed to properly ink the same.

As has been indicated in Figures 3 and 4, a roll of paper or other desirable material 30 is supported upon the shaft 13, and this material is passed under the inking plate 24, and over the platen surface 15 subsequent to which it moves between the rollers 14 and so beyond the rear end of the machine, it being noted, as has been shown in Figure 7, that one of the rollers 14 is preferably mounted in movable bearings 31 so that these rollers will engage each other to just that extent necessary to properly feed the printed material. To properly rotate the rollers, and to also effect a reciprocation of the actuating member 20 it will be noted that, in the embodiment illustrated, I have provided a hand-operated fly wheel 32, and this element is mounted upon a crank shaft 33 having one end of a pitman 34 connected to its crank portion, the opposite end of this pitman being connected to the actuating member 20 to effect the retraction aforespecified. The shaft 33 also carries a sprocket gear 35, and this gear has a sprocket chain 36 passing around it, which chain also passes around the similar sprocket gear 37 mounted upon a shaft 38 adjacent the rear end of the machine, thus coupling the shafts 33 and 38 with each other. A cam wheel 39 is mounted upon the shaft 38 and the lowermost of the shafts of the rollers 14 is extended and carries a friction wheel 40, which latter is positioned in line with the cam 39. Thus it will be understood that normally the movement of the cam wheel 39 will not be transmitted to the rollers 14, but upon the raised surface of this wheel coming into contact with the friction wheel 40 of the rollers, a resultant rotation will be transmitted to these latter elements causing the same to feed any intervening lever of material rearward in a step-by-step movement.

Finally, to provide means serving to sever the printed material it will be noted that after its emergence from between the rollers 14 the said material passes over a cutting ledge 41 adjacent which a knife 42 is positioned, it being noted in this connection, that the said knife is preferably formed with an inclined cutting edge to facilitate the severance of the material by a direct reciprocating stroke imparted to the knife. Operating mechanism for actuating the knife is provided by preferably having the latter upon posts 43 slidably carried as at 44 by the body of the press, and these posts are connected together adjacent their lower ends by means of a rod 45 extending between them, it being seen, however, that the posts and the knife carried thereby are normally pressed upwardly and away from the cutting ledge 41 by springs 46 having their ends bearing against the fixed portion of the press and the knife respectively.

As in Figures 3 and 4, the lever 47 has one of its ends rockingly supported within the body of the press, while its opposite end is similarly connected to the rod 45, and incident to the action of the springs 46 the lever 47 will have its wedge-shaped extension 48 pressed into sliding contact with the under face of the actuating member 20, and thus the knife 42 will normally be out of operating contact with the cutting ledge 41. However, it will be seen that the actuating member is formed with an off-set rear end 49 which, when the said actuating member is in its fully retracted position contacts with the wedge-shaped extension 48, of the lever 47 to depress the same from the position shown in Figure 3 to that shown in Figure 4, and thus, incident to the action of this lever with the knife, it will also be understood that the latter will be depressed to effectually sever any layer of material passing between the ledge and the knife.

Thus all of the objects of my invention have been accomplished, it being appreciated that an extremely simple construction has been evolved, incident to the fact that

the actuating member 20 serves to operate each of the elements of the press, with the exception of the operation of the feed rollers 14, it being noted in this connection that the actuating member carries the printing rollers 29 and serves to operate the inking plate 24, aside from the fact that upon this member being retracted the inking rollers will be caused to contact with the plate, while upon the member being projected, the type will be wiped by the rollers. Also the type bed is actuated by the projection and retraction of the member, and this operation further effects the actuation of the knife 42.

It will be understood that numerous modifications of structure might readily be resorted to without in the least departing from the scope of my claims; which are—

1. A printing press comprising a platen. a printing mechanism cooperating with said platen, a cutting mechanism and a single element operable to control the simultaneous actuation of said printing mechanism to cooperate with said platen and to cause said cutting mechanism to perform a cutting operation.

2. A printing press comprising a platen, a printing mechanism cooperating with said platen, a cutting mechanism and inking device, and a single element for initially controlling a cooperation between said printing mechanism and inking device and thereafter simultaneously controlling the acutation of said printing mechanism to cooperate with said platen, and to cause said cutting mechanism to perform a cutting operation.

3. A printing press including a body, an actuating member slidably mounted within said body, an inking plate rotatably carried by said body, rollers carried by said actuating member and adapted to co-operate with said inking plate, a movable type bed, and a movable knife, both carried by said body, and means for moving said actuating member to operate all of said elements.

4. A printing press including a body, a wedge-shaped actuating member slidably carried by said body, means for reciprocating said member, a movable type bed. a platen and means connecting said bed with said actuating member whereby upon the latter being reciprocated, the former will be moved into and out of operating contact with said platen.

5. A printing press including a body, a wedge-shaped actuating member carried by said body, printing means carried by said body and adapted to be operated by said actuating member, a knife movably carried by said body, said actuating member being formed with an off-set end portion, and means for operatively connecting said knife with said actuating member whereby upon the latter being moved the connecting means for said knife will be actuated by the off-set end portion of said actuating member to operate said knife.

6. A printing press comprising a platen, a printing mechanism having a movement in one plane and cooperatig with said platen, a cutting mechanism having a movement in a plane parallel to that of the printing mechanism, and a single element movable in a plane transverse to that of the printing and cutting mechanisms and operable to control the actuation of said printing mechanism to cooperate with said platen, and to cause said cutting mechanism to perform a cutting operation.

7. A printing press including a body, printing mechanism carried by said body, feed rollers also carried by said body, a shaft, means for driving said shaft, means for connecting said printing mechanism with said shaft, a cam wheel connected to said shaft, and means connecting said rollers with said cam wheel.

8. A printing press including a body, printing mechanism carried by said body, feed rollers also carried by said body, a shaft, means for driving said shaft, means for connecting said printing mechanism with said shaft, a cam wheel connected to said shaft, a frictional wheel connected to one of said rollers and disposed in line with said cam wheel whereby upon the latter being rotated, said friction wheel will be intermittently rotated.

9. A printing press including a body, a knife slidably carried by said body, a printing bed, slidably carried by said body, a fixed platen arranged in line with said bed, an actuating member, an inking plate, printing rollers carried directly by said actuating member and adapted to contact alternately with said plate and bed respectively, means for operatively coupling said bed and knife with said actuating member whereby upon the latter being reciprocated the said bed and knife will be operated, a crank shaft, a pitman connecting said crank shaft with said actuating member, feed wheels disposed between said bed and said knife, a friction wheel connected to one of said feed wheels, a shaft disposed adjacent to said friction wheel, a cam wheel carried by said shaft, and means for connecting said crank shaft with said cam wheel.

ANTHONY HEINER.