

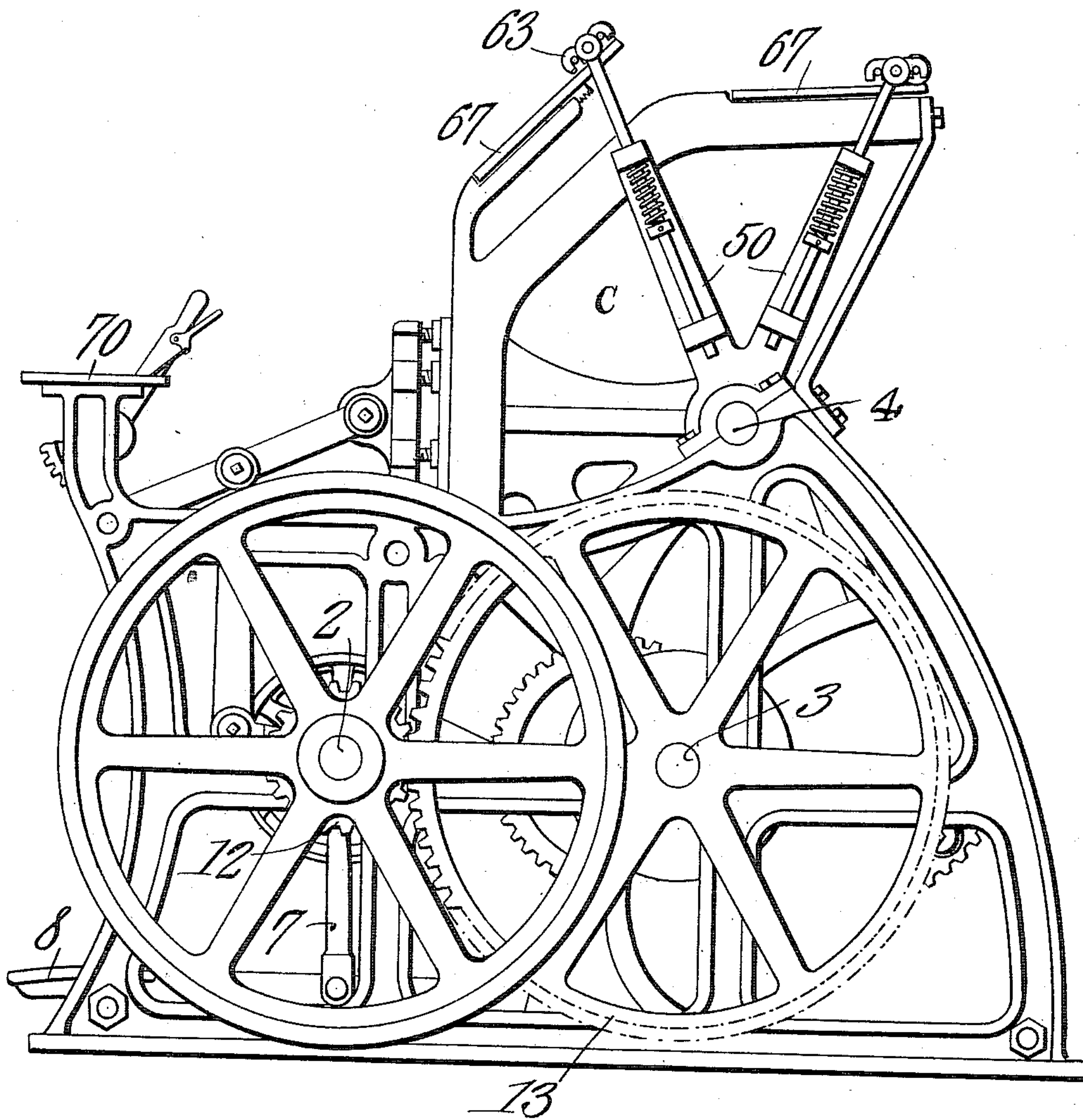
A. M. CLARK.
MULTICOLOR PRINTING PRESS.
APPLICATION FILED FEB. 21, 1910.

995,524.

Patented June.20, 1911.

5 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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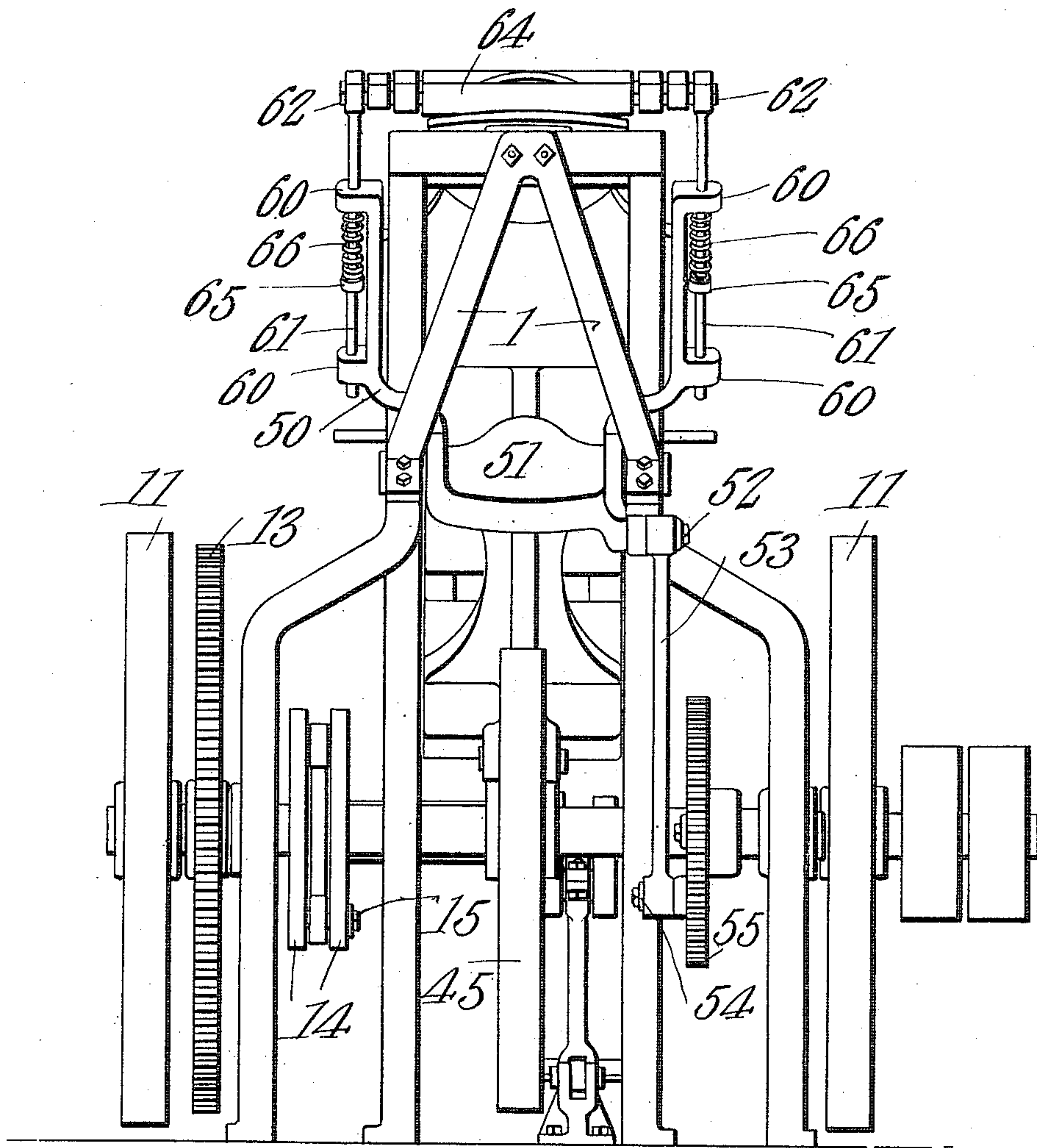
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5 SHEETS—SHEET 2.

Fig. 2.



Witnesses

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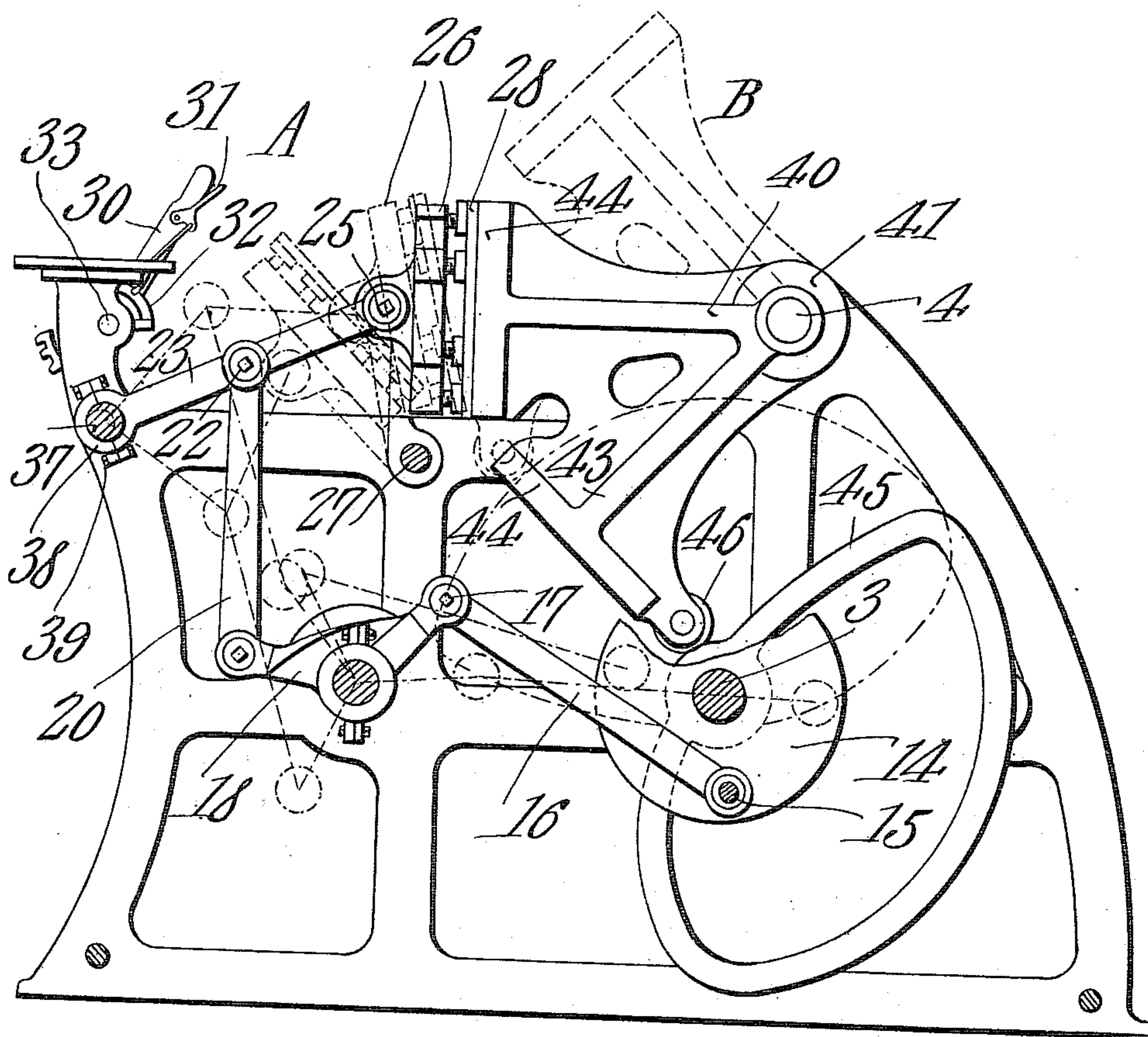
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5 SHEETS—SHEET 3.

Fig. 3.



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5 SHEETS—SHEET 4.

Fig. 4.

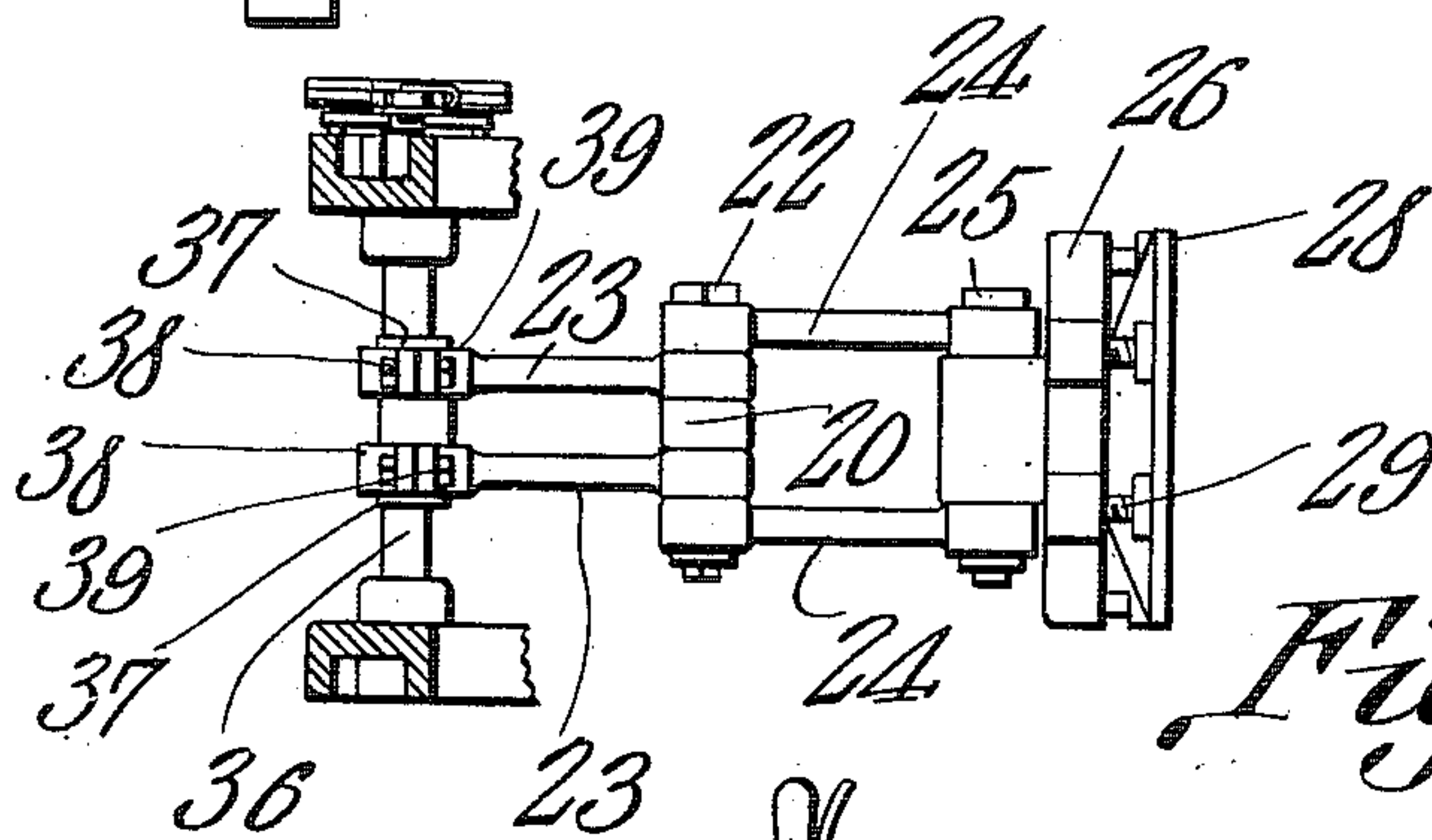
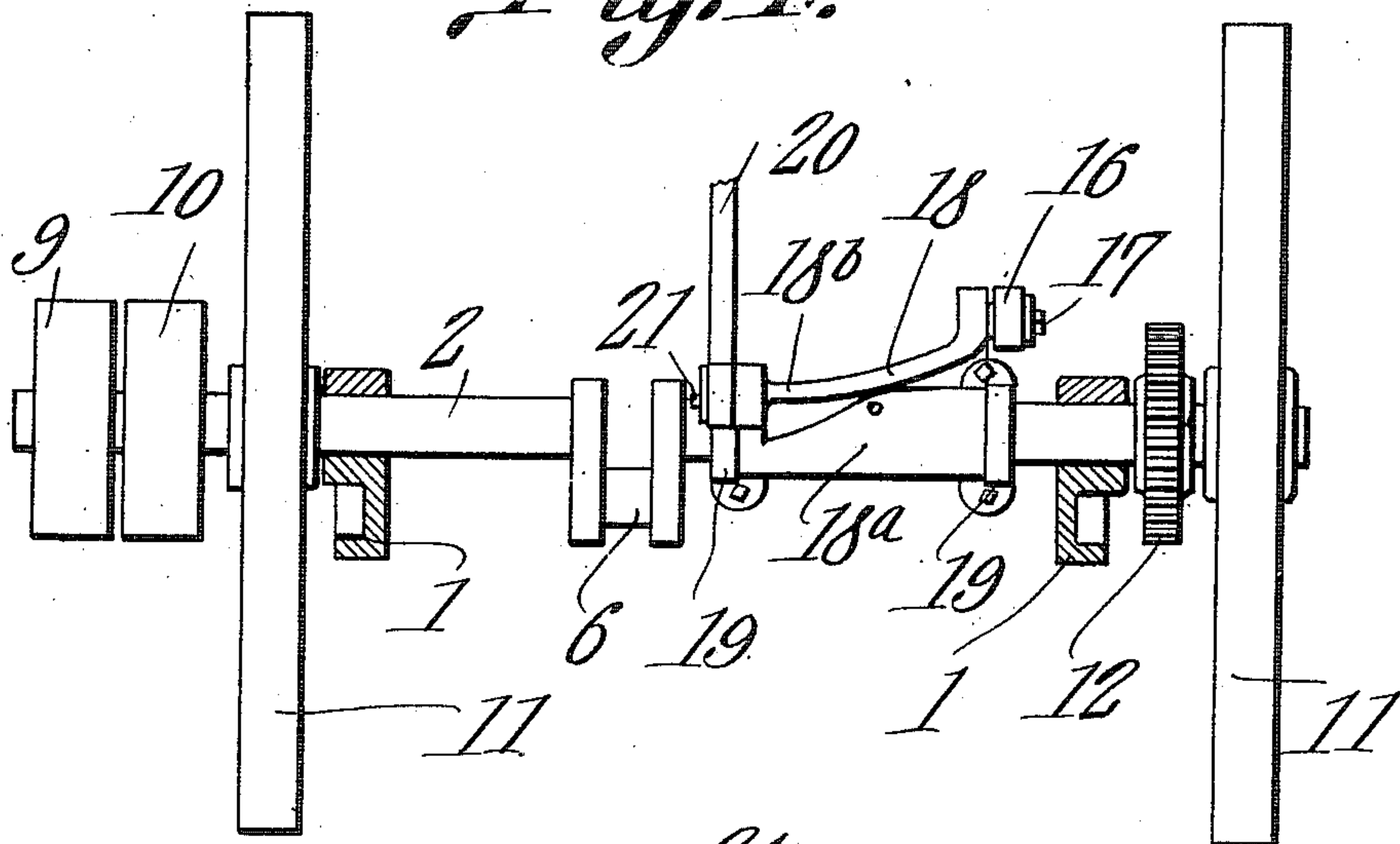


Fig. 5.

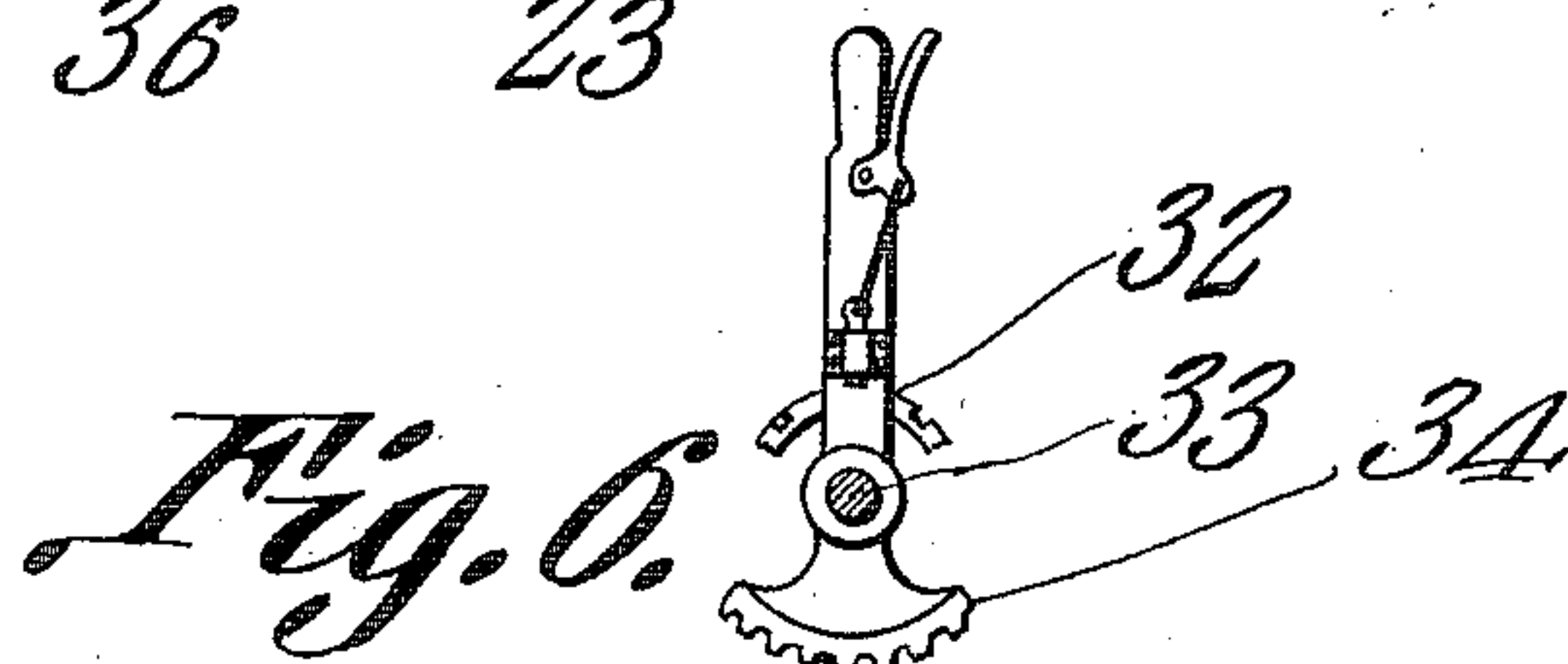


Fig. 6.

Witnesses

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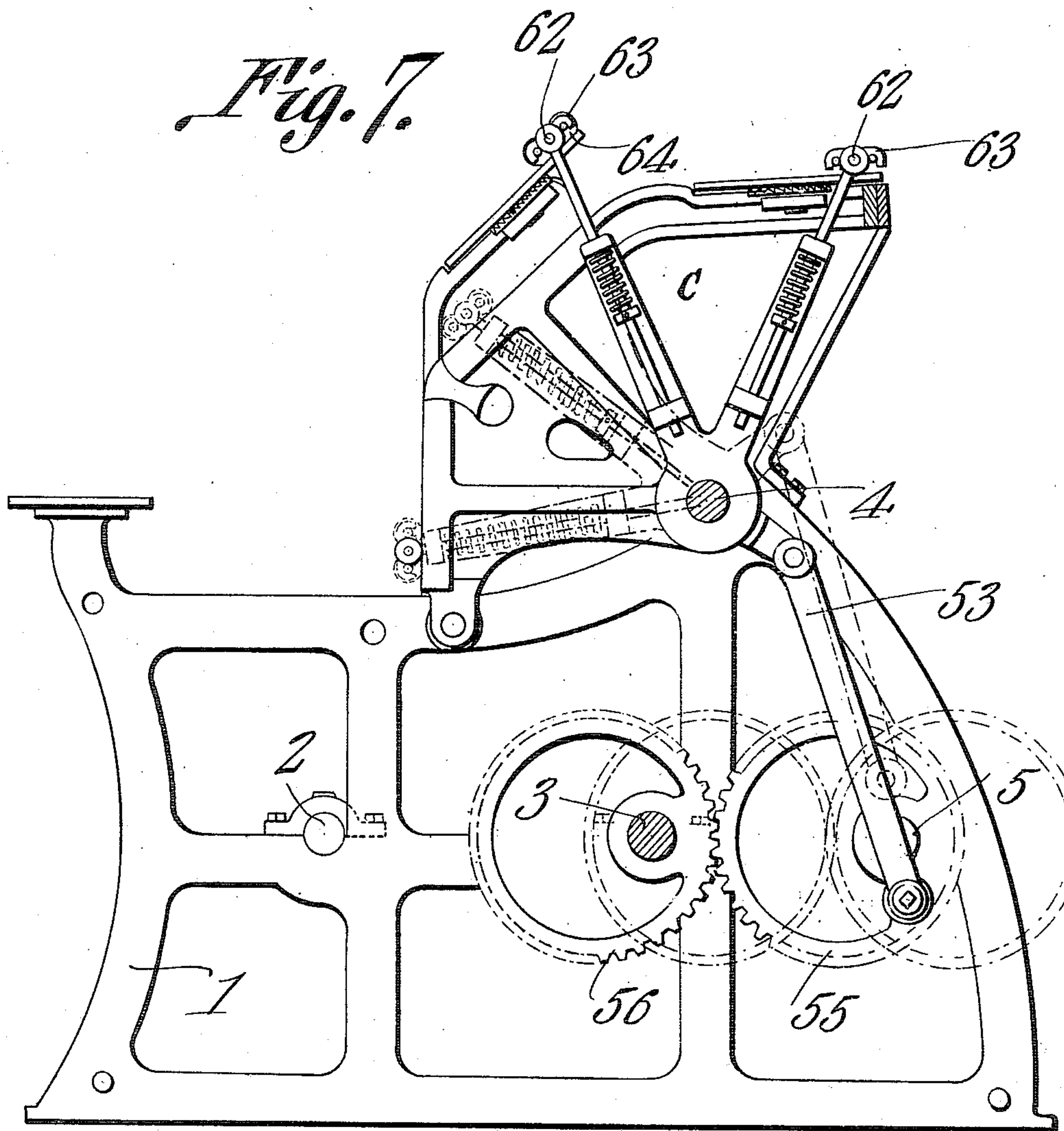
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5 SHEETS—SHEET 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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MULTICOLOR-PRINTING PRESS.

995,524.

Specification of Letters Patent. Patented June 20, 1911.

Application filed February 21, 1910. Serial No. 545,139.

To all whom it may concern:

Be it known that I, ALLEN M. CLARK, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented a new and useful Multicolor-Printing Press, of which the following is a specification.

This invention relates to multi-color printing presses.

10 The object of the invention is to provide a press of the character specified which is particularly adapted for use in job work, although of course it can be utilized for other purposes.

15 A further object of the invention is to provide a press which is simple in construction and which can be placed on the market at a relatively small cost and which can be easily operated in small establishments which have heretofore been unable to perform multi-color work.

20 With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

25 In the accompanying drawing forming part of this specification, Figure 1 is a side elevation of a multi-color printing press constructed in accordance with the present invention. Fig. 2 is a rear elevation thereof. Fig. 3 is a side elevation showing the double bed holder, and the platen mechanism, the inking mechanism being omitted. 30 Fig. 4 is a detail view of the main shaft and the angle member for operating the platen mechanism. Fig. 5 is a detail view of the platen and the break joint mechanism which is adapted to produce a double impression of the platen during each single revolution of the operating member. Fig. 6 is a detail view of a portion of the lever and eccentric mechanism shown in Figs. 3 and 5, for adjusting the platen when altering the operating mechanism thereof. Fig. 7 is a side elevation of the frame of the device with the inker mechanism shown in detail, the bed holder, platen and main shaft being omitted.

55 Like reference numerals indicate corre-

sponding parts on the different figures of the drawing.

For the purpose of enabling the following description to be more readily understood, a brief outline of the entire machine herein 60 illustrated will first be given.

The improved printing press preferably comprises a platen mechanism indicated generally by the reference letter "A" in Fig. 3; a bed holder adapted to receive a plurality of beds of type or other matter, said bed holder being indicated generally by a reference letter "B"; and inking mechanism indicated generally by the reference letter "C" in Fig. 7. The bed holder "B" preferably is in the form of a pivoted member adapted to receive a plurality of beds of type or other matter held at an angle to each other. Suitable mechanism is provided for operating the bed holder so as to bring first 75 one bed of type opposite the platen, and then to move said bed of type away from the platen and move another bed of type into position opposite the platen. Suitable inking mechanism is employed to supply ink of 80 one color to one bed of type and ink of another color to the other bed of type so that when the sheet of paper or other material carried by the platen is pressed respectively into engagement with the different beds of 85 type, it will receive impressions in different colors of ink. The platen mechanism is provided with suitable break joint devices by which upon a single rotation or movement of an operating member, the break 90 joint mechanism passes the center thereof twice on each revolution of the operating member, so that two impressions of the platen are given on a single rotation of the operating shaft. Suitable eccentric mechanism connected with the break joint mechanism of the platen is provided for the purpose of adjusting the platen nearer or farther from the bed holder without changing the adjustment of its operating mechanism. It will be understood that all the members of the device are properly connected so as to operate in synchronism.

The machine of the present invention is constructed with a frame 1 which may be 105 of any suitable form and is best indicated in Fig. 7. Suitably journaled in the frame 1 is a main shaft 2 to which power is applied in any suitable manner; an intermediate shaft 3 which serves to operate the platen 110

mechanism and to raise and lower the bed holder; a shaft 4 on which is pivoted the bed holder, and inker mechanism, and a shaft 5 which carries an eccentric or variable speed device for operating the inker mechanism, all as will hereafter more fully appear.

The main shaft 2, as best indicated in Fig. 4, is provided with a crank member 6, which, as shown in Fig. 1, is connected by means of a crank 7 with a treadle 8 by means of which the printing press may be foot operated when desired. Returning to Fig. 4, the main shaft 2 is also provided on the outer end thereof with a fixed or tight pulley 9, and a loose pulley 10, by means of which the printing press may be suitably operated by means of a belt from any suitable source of power, if it be not desired to use the treadle mechanism. The main shaft 2 is also provided with a pair of balance wheels 11 located adjacent the opposite end thereof.

The means for transmitting the movement of the main shaft 2 to the intermediate shaft 3, preferably consists of a gear wheel 12 fixed upon the main shaft 2 and meshing, as indicated in Fig. 1, with the teeth of a large gear wheel 13 which is fixed upon the intermediate shaft 3.

The means for transmitting the movement of the intermediate shaft 3 to the platen mechanism preferably consists of a crank device shown in Figs. 2 and 3 as consisting of a pair of disks 14 which are fixed upon aligned sections of the shaft 3 and are bolted together, as indicated at 15, the bolt 15 serving as the pivot pin for a link 16, in Fig. 3, which is pivotally connected at its opposite end at 17 with an angle member or lever 18 which, as best shown in Fig. 4, is loosely mounted on the main shaft 2 between collars 19. The angle lever 18 preferably consists of a sleeve 18^a surrounding the shaft 2 and provided with a twisted or spiral web portion 18^b. The link 16, as indicated at 17, is connected with one end of the web 18^b, and a link 20 is connected at 21 with the other end of the web 18^b, so as to be laterally offset from the link 16. The link 20, as indicated in Fig. 3, extends upwardly and is pivotally connected with a bolt 22. The link 20, as indicated in Fig. 5, is pivotally connected with the central portion of the bolt 22, and said bolt, on opposite sides of the link 20 is pivotally engaged by a pair of parallel links 23—23 which form part of the platen operating mechanism. The bolt 22 on the outside of the links 23 is also engaged by links 24—24 which in turn are pivotally connected at 25 with the platen support 26 which, as shown in Fig. 3, is pivotally connected at 27 with the machine frame 1. The platen 28, as shown in Figs. 3 and 5, is adjustably con-

nected with the platen holder 26 by means such as the screws 29 or any other suitable and well known devices. If desired these screws 29 may be omitted and the platen 28 formed rigid or integral with the holder 26. The mechanism for securing adjustment of the platen 28 without altering its operating mechanism consists of a lever 30, shown in Figs. 3, 5 and 6, provided with a locking device 31 adapted to engage a segment 32. The lever 30 is pivoted at 33 and is formed at its lower end with a segmental gear 34 which meshes with gear teeth 35 fixed on a shaft 36. The shaft 36 is provided with two circular cams or eccentrics 37 which are surrounded by split collars 38 provided with joining bolts 39 and connected with the ends of the links 23 of the platen. It will be obvious that by moving the lever 30 the cams 37 will be rotated so as to adjust the platen nearer to or farther from a bed of type as hereinafter described, without altering the operation of the mechanism which actuates the platen. It will also be obvious that the links 23 and 24 constitute a break joint mechanism which is adapted to assume the positions indicated by the dotted lines in Fig. 3. Each revolution of the crank disks 14 serves to move the break joint mechanism from the position shown in Fig. 3 downward to the dotted line position, then upward to the dotted line position and then back to the full line position. Each time the break joint mechanism passes the center or full line position, the platen is pressed against one or the other of the hereinafter described beds of type, so it will be apparent that a single revolution of the intermediate shaft 3 and crank disks 14 serves to produce the double operation or impression of the platen.

The bed holder for receiving a plurality of beds of type adapted successively to cooperate with the platen, is indicated generally by the reference numeral 40 in Fig. 3 and is pivotally mounted at 41 upon the shaft 4. The bed holder is formed with two extensions or arms 42 and 43 which are disposed at an acute angle with respect to each other and are provided at their outer end with bed holding portions or plates 44 each adapted to receive a bed of type or other matter to be printed.

The means for raising and lowering or otherwise suitably operating the bed holder, preferably consists of an approximately elliptical cam member 45, shown in Fig. 3, which is fixed upon the shaft 3 and engages an anti-friction roller 46 secured to the lower extension 43 of the bed holder 40. The rotation of the cam 45 serves successively to raise and lower the bed holder 40 thus presenting first one bed of type or other matter and then the other bed of type in position in front of the platen 28 so that the two move-

ments of the said platen, as previously described, will cause the sheet of paper or other material carried thereby to be pressed first against one bed of type and then against the other bed of type.

The means for inking the two beds of type with different colored ink, preferably consists of a pair of angularly extending arms 50, which are shown in Fig. 2, as having their lower ends extended inwardly and journaled upon the shaft 4. The arms 50 are rigidly connected with each other by means of a cross piece 51. The cross piece 51 is provided with an extension or bolt 52 with which is pivotally connected a link 53 which in turn is pivotally connected at 54 with a gear member 55 which is mounted eccentrically upon the shaft 5, as shown in Fig. 7, and is in mesh with a gear member 56 which is similarly fixed in an eccentric manner upon the shaft 3. The shaft 3 through the eccentric gear 56 operates the eccentric gear 55 thus giving a variable speed to the link 53 whereby the inking device hereinafter described can be moved slowly when in engagement with the inking plates and rapidly when they are inking the type so as not to interfere with the operation of the other parts of the press. The arms 50, as shown in Fig. 2 are provided with perforated lugs or extensions 60 through which extend adjustable rods 61 pivotally connected at their upper ends, as indicated at 62, in Fig. 7, with yoke members 63 which carry the inking rollers 64 arranged in pairs. For the purpose of adjusting the inking rollers the rods 61, as shown in Fig. 2, are provided with fixed collars 65 and coiled springs 66 are arranged upon said rods 61 between the collars 65 and the upper lugs 60 so as to yieldingly press the inking roller 64 downward upon the two inking plates 67, shown in Fig. 1, said inking plates being adapted to receive different colors of ink and to be suitably rotated in a step by step manner during the operation of the inking rollers. As this step by step movement of the inking plates 67 is old and well known in the art, it is deemed unnecessary specifically to describe the same herein.

It is believed that the operation of the improved device will be apparent from the foregoing description, taken in connection with the drawings.

The operator stands in front of the table 70 and feeds paper or other material to the platen. This operation is simple for the reason that the platen, as indicated in the dotted lines in Fig. 3, first drops wide open so as to receive the paper, and then closes up toward the type and takes two rapid impressions, from the two faces of type in the bed holder 40, thus giving multi-color impressions to the paper. The platen then

drops wide open again, thus permitting the operator to remove the printed bill or circular and substitute a new sheet of paper.

The printing press of the present invention is strong, simple, durable, and comparatively inexpensive in construction, as well as thoroughly efficient in operation.

What is claimed is:

1. A printing press comprising a platen, means for holding a plurality of beds of impression matter, and means for moving said platen from wide open position to approximately closed position, then causing it to have two rapid engagements with the plurality of beds of impression matter, and then moving it to wide open position.

2. A printing press having an impression member, break joint mechanism for operating said member, said mechanism being adapted to produce an impression of the impression member, each time it passes its center, printing mechanism, inking mechanism, and means for operating the inking mechanism each time the impression member makes an impression.

3. A printing press having an impression member, break joint mechanism for operating said member, said mechanism being adapted to produce an impression of the impression member each time it passes its center, means for holding a plurality of beds of type, and means for moving a new bed of type into position opposite said impression member, each time said impression member makes an impression.

4. A printing press having a platen, break joint means for producing an impression of the platen each time it passes its center, means for moving a new bed of type into position opposite the platen each time it makes an impression, and eccentric means for adjusting the position of the platen.

5. A printing press having a platen member, means for holding a plurality of beds of impression matter, break joint mechanism for operating said platen each time it passes its center, and a crank member for operating said break joint mechanism to cause it to move said platen from wide open position to approximately closed position, and then make two rapid engagements with the plurality of beds of impression matter, and then move to wide open position.

6. A printing press having a reciprocating double bed holder, inking mechanism for simultaneously inking both portions of said double bed holder, means for varying the speed of said inking mechanism, and a platen pivoted at one edge thereof for successively cooperating with the beds of said bed-holder.

7. A printing press comprising a platen, a break joint mechanism connected with said platen, a rotary crank member for operating said break joint mechanism, a pivotally

mounted bed holder adapted to receive a plurality of beds of type, means for raising and lowering said bed holder to bring different beds of type successively opposite the platen, and means for inking said beds of type.

8. A printing press comprising a frame, a main shaft therein, means for applying power to said main shaft, an intermediate shaft in gear with said main shaft, a crank on said intermediate shaft, an angle lever loosely mounted on said main shaft and having a link connection extending upward from said angle lever, a break joint mechanism pivotally connected with said last mentioned link, an eccentric device for regulating the position of said break joint mechanism, a platen connected with said break joint mechanism, a pivotally mounted bed holder adapted to receive a plurality of beds of types, a cam on said intermediate shaft adapted to engage said bed holder for raising and lowering the same, a plurality of sets of inking rollers for inking the different beds of type on said bed holder, an eccentric gear mounted on said intermediate shaft, a second eccentric gear meshing therewith, and means connecting said second eccentric gear with said inking rollers to cause the same to be operated at a variable speed.

9. A printing press having a bed holder provided with means for holding a plurality of beds, means for moving said bed holder about an axis, inking mechanism movable around the same axis as the bed holder for simultaneously inking all of the said beds, and a platen for successively cooperating with said beds.

10. A printing press having a pivotally mounted holder adapted to receive a plurality of beds of type, inking mechanism movable around the axis of movement of the bed holder for simultaneously inking all of

the beds, and a platen for successively cooperating with said beds.

11. A printing press having a pivotal bed holder adapted to receive a plurality of beds of type, means for raising said bed holder and permitting it to descend by gravity, means for simultaneously inking the beds on said bed holder, and a platen for successively cooperating with said beds.

12. A printing press having a platen, break joint mechanism for operating said platen each time it passes its center, a plurality of beds of impression matter, and means for moving a new bed of impression matter into position opposite said platen each time said break-joint mechanism passes its center.

13. A printing press having an impression member, a break joint mechanism for operating said member, said mechanism being adapted to produce an impression of the impression member each time it passes its center, a plurality of beds of type and means for moving a new bed of type into position opposite said impression member each time said break joint mechanism passes its center.

14. A printing press having a platen, a break joint mechanism for operating the same, said mechanism causing an impression of the platen each time it passes its center, a plurality of movable beds of impression matter and means for successively presenting new beds of impression matter to the platen.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALLEN M. CLARK.

Witnesses:

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ANDREW N. HILDEBRAND.