

No. 712,400.

Patented Oct. 28, 1902.

W. R. MOYERS.
FEEDING MECHANISM FOR PRESSES.

(Application filed June 22, 1901.)

(No Model.)

5 Sheets—Sheet 1.

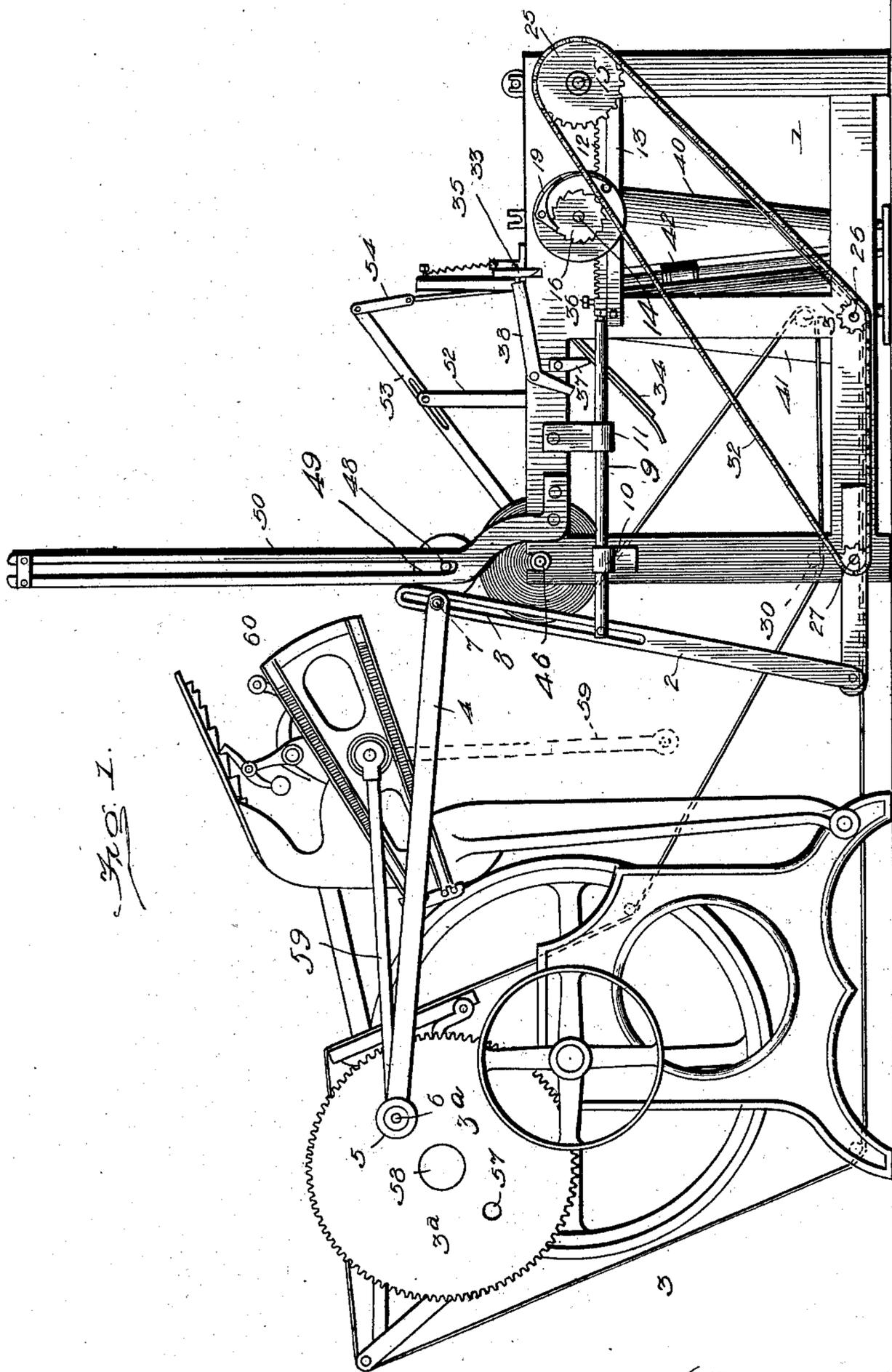


Fig. 1.

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Fig. 5.

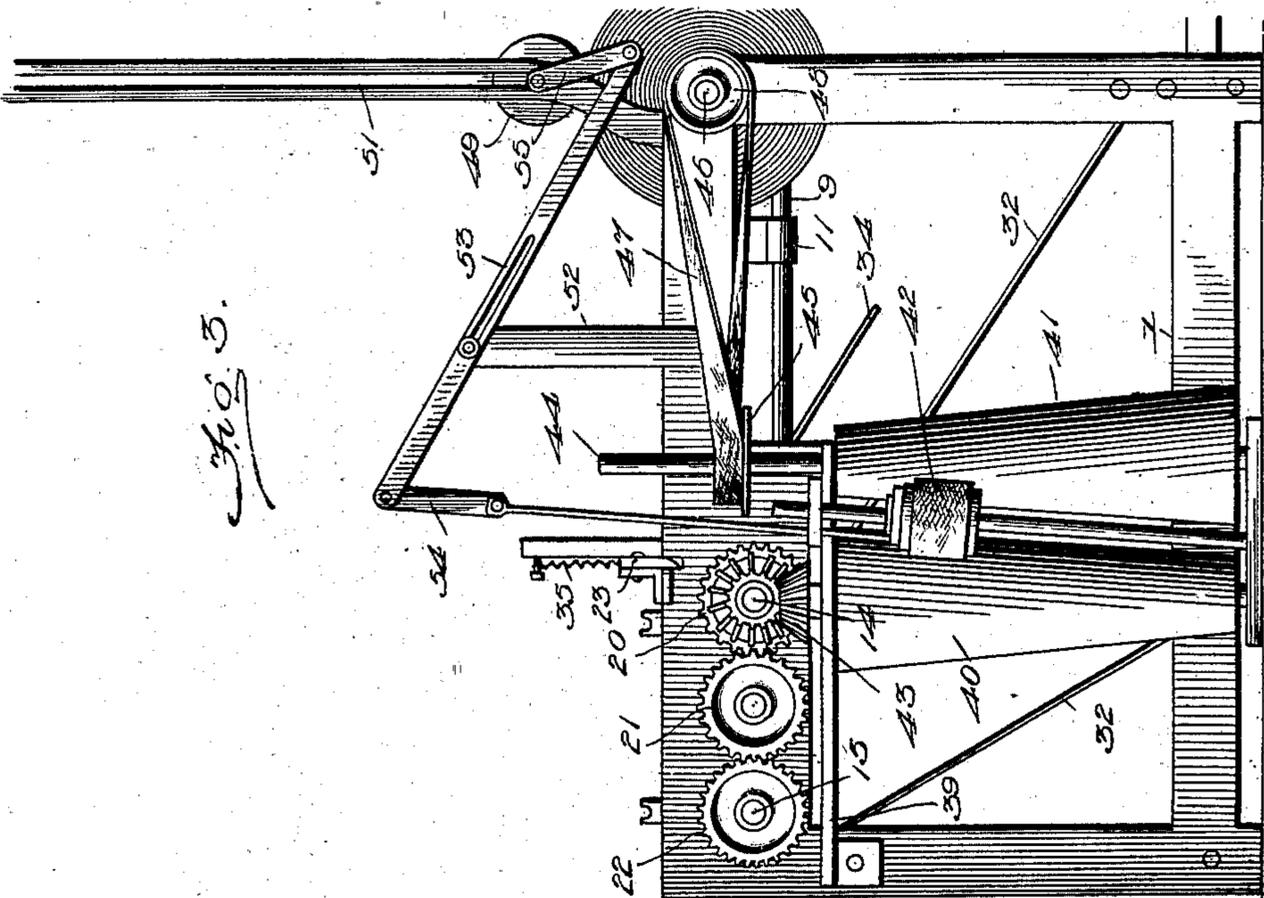
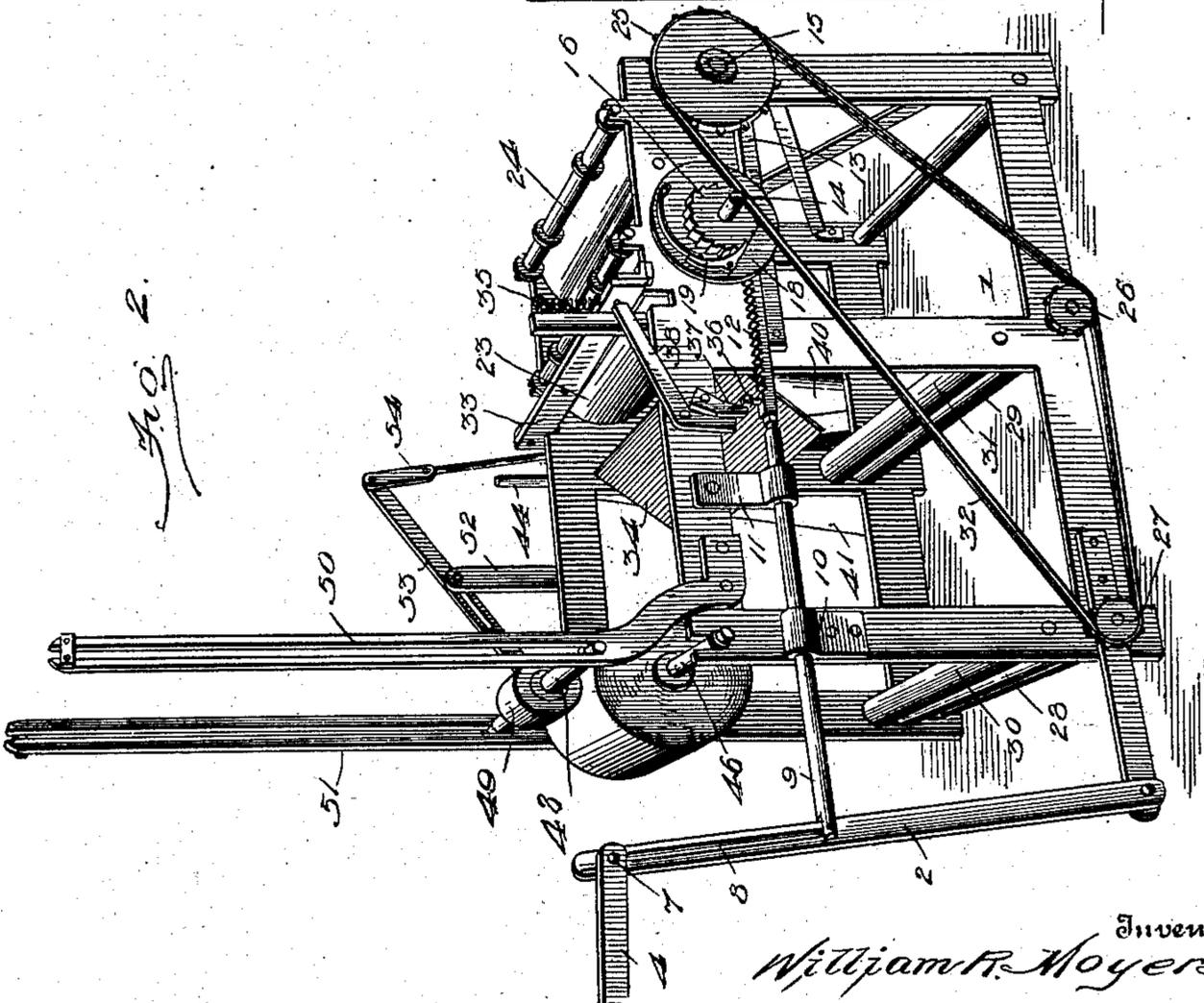


Fig. 2.



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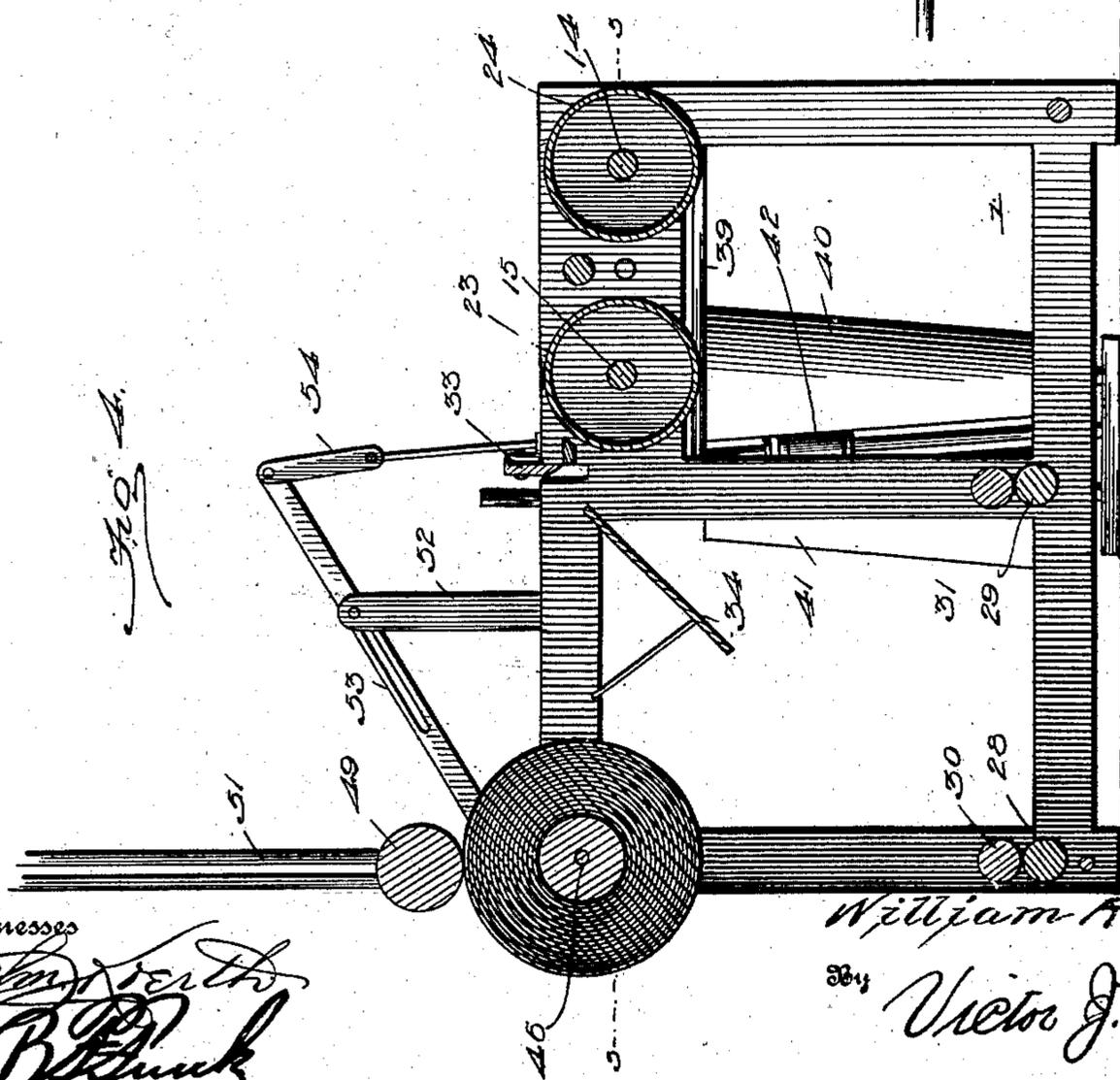
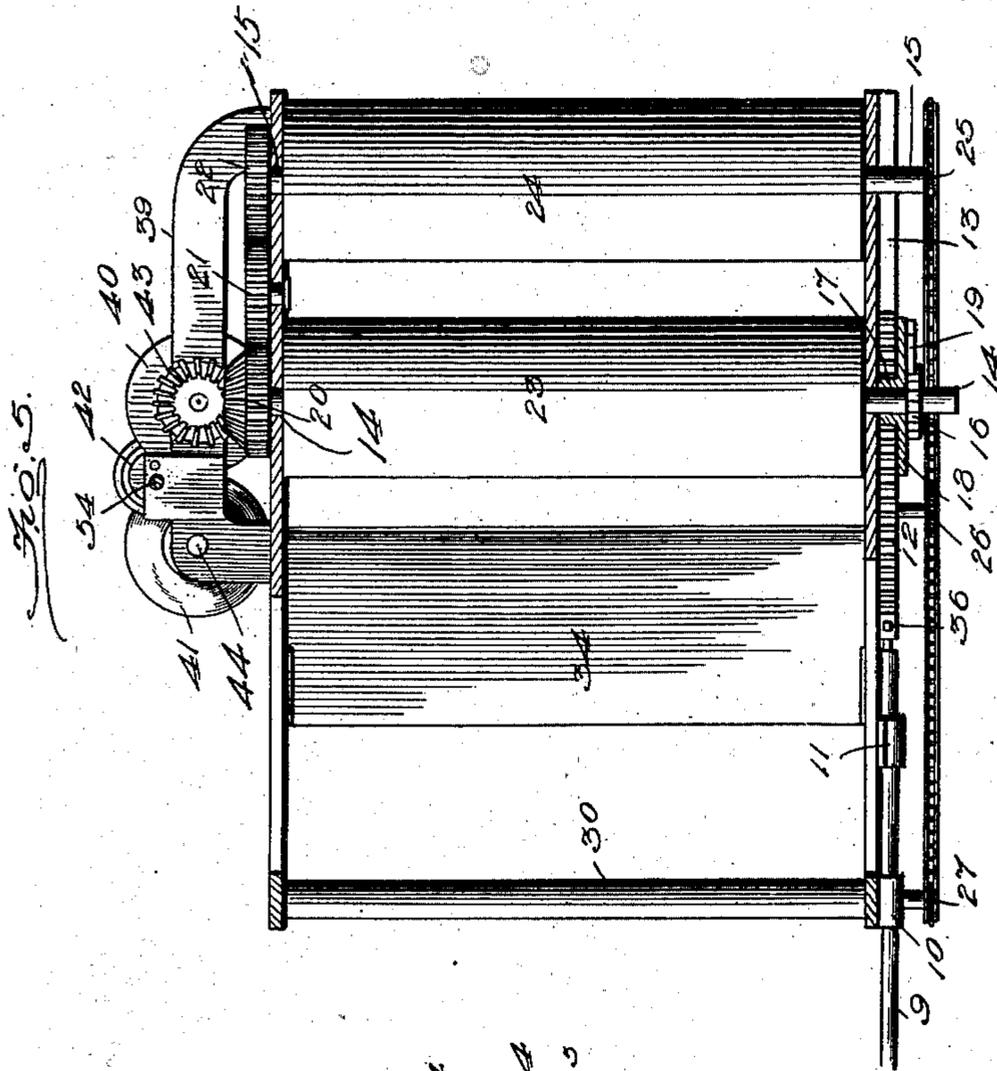
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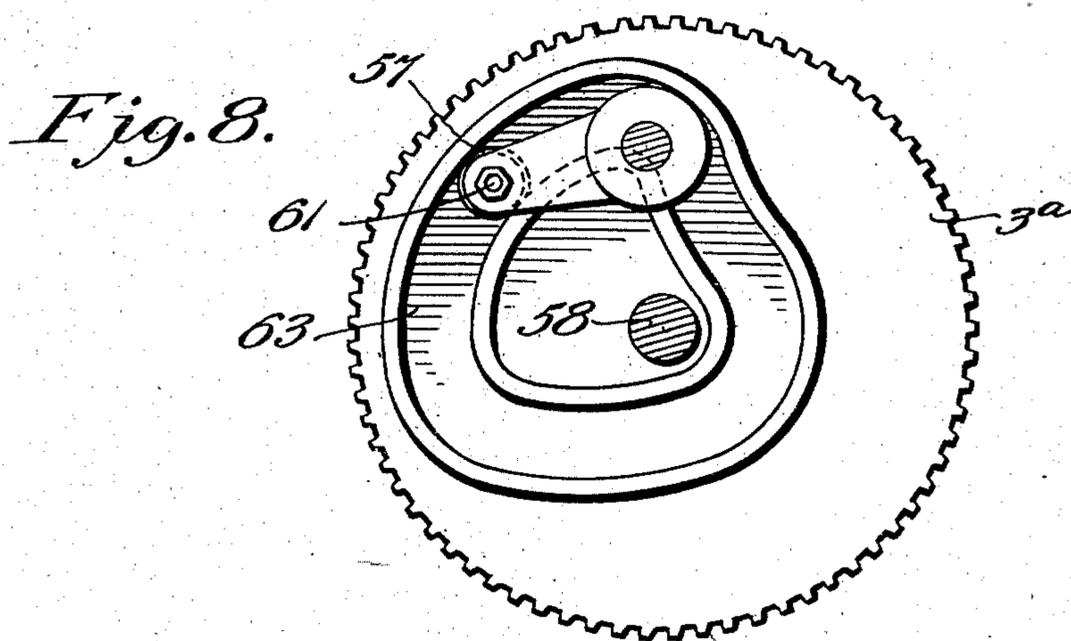
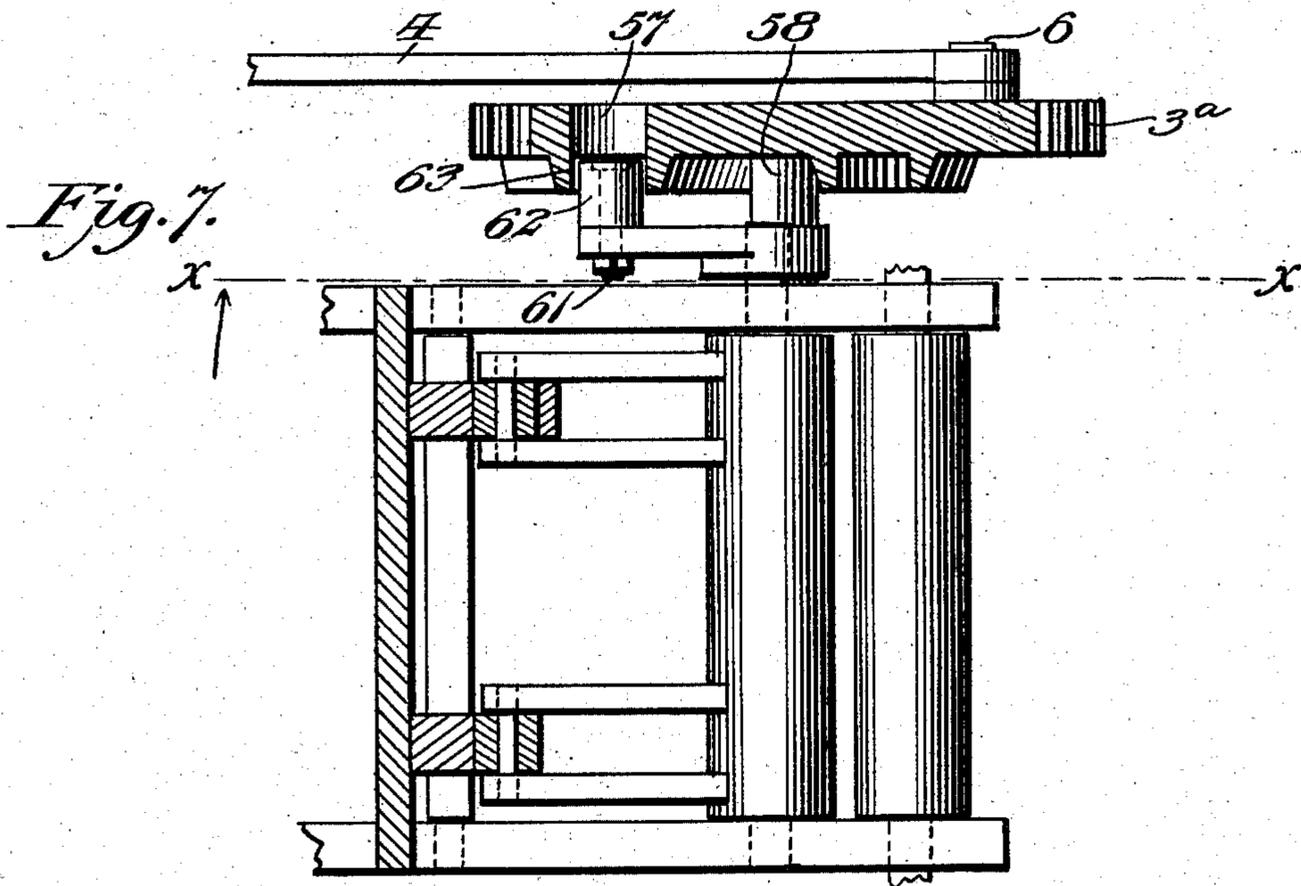
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5 Sheets—Sheet 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM R. MOYERS, OF CHATTANOOGA, TENNESSEE, ASSIGNOR OF ONE-HALF TO MELANCTHON CARY, OF CHATTANOOGA, TENNESSEE.

FEEDING MECHANISM FOR PRESSES.

SPECIFICATION forming part of Letters Patent No. 712,400, dated October 28, 1902.

Application filed June 22, 1901. Serial No. 65,665. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MOYERS, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented new and useful Improvements in Feeding Mechanism for Presses, of which the following is a specification.

This invention relates to the general class of printing, but more particularly to a feeding mechanism for presses.

The particular style of press for which my invention is designed is the Gordon job-press, although it is also applicable to all styles of platen and cylinder-presses.

The primary object of the device is to provide a cheap, durable, and efficient means for feeding paper from a roll to a platen or cylinder press and either cut the same or convey it to a second roll, as found convenient or desirable.

A further object is to arrange this device so as to feed paper to one or more Gordon presses at a time, either for a single impression or for multicolor-printing.

Other objects, as well as the peculiar manner of operating the device and the preferred form thereof, will be clearly described hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a Gordon press supplied with a feeding attachment constructed in accordance with my invention. Fig. 2 is a perspective view of the feeding attachment. Fig. 3 is a side elevation showing the variable gear. Fig. 4 is a vertical longitudinal section through the feeding attachment. Fig. 5 is a transverse section on the line 5 5 of Fig. 4, and Fig. 6 is a side elevation of a pair of Gordon presses to which is attached the feeding attachment in a manner to be used for multicolor-printing. Fig. 7 is a section through a Gordon press, showing the cam, roller, and stud, hereinafter referred to; and Fig. 8 is a section on line $x x$, Fig. 7.

Referring now to the drawings by numerals of reference, 1 designates a rectangular frame suitably constructed and braced.

The reference-numeral 2 designates a bar or lever connected to the gear-wheel 3^a of a

Gordon press 3 in any suitable manner. However, I prefer to make the connection through the medium of a pitman 4, which is provided with a collar 5 at one end, which is sleeved on a wrist-pin 6, carried by the gear-wheel 3^a of the press. The other end of the pitman 4 is provided with a right-angularly-projecting pin 7, which works in an elongated slot 8 in the lever 2. A reciprocating rod 9 works in suitable bearings 10 and 11, secured to the side of the frame 1, and carries at one end a rack-bar 12, which rests on a guideway 13. The rod and rack are driven by the lever 2 as it is actuated by the pitman 4.

Journalled in the upper rear portion of the frame 1 are two shafts 14 and 15, parallel with each other and on the same lateral plane. A ratchet-wheel 16 is keyed to the shaft 14, and intermediate the ratchet and the sides of the frame is loosely mounted a pinion 17, which is in mesh with the rack 12. On the peripheral flange 18 of this pinion is mounted a spring-pressed dog or pawl 19, which is designed to engage the ratchet intermittently—that is to say, as the rack moves toward the rear of the machine. When, however, the rack is projected forward, the pawl will play idly over the teeth of the ratchet and the shaft 14 will not be rotated. On the opposite end of the shaft 14 is keyed a crown-gear 20, having a bevel face and peripheral teeth. The peripheral teeth mesh with an idle intermediate gear 21, which in turn meshes with a gear 22 on the shaft 15, whereby said shaft is rotated.

The sprocket-wheel 25 is carried by the opposite end of the shaft 15 to which the gear 22 is mounted. This sprocket is of the same diameter as the drum 24, and the sprockets 26 and 27 on the ends of the rolls 28 and 29 are the same sizes as said rolls. It will be noticed that these rolls are positioned at or adjacent the bottom of the frame of the feeding-machine, and the purpose of these rolls, in conjunction with the parallel rolls 30 and 31, is to guide and feed the paper strip on its way to the press. Inasmuch as the sprockets 25, 26, and 27 are of equal diameter with their respective rolls or cylinders and the same are all driven by the sprocket-chain 32, the paper will be fed into the press at the same rate by

the rolls 28 and 29 as it will be drawn out by the cylinders 23 and 24.

33 designates a pivoted knife or cutter, which is positioned at a point adjacent to the cylinder 23, so as to cut the paper just previous to its entrance upon the inclined table 34. This cutter 33 is normally held retracted or raised through the medium of a tension-spring 35. However, as the rack-bar 12 reciprocates a lug or projection 36, carried at one end thereof, will strike against the pivoted trip 37, secured to the frame 1, causing said trip to actuate the bell-crank lever 38, also pivoted to the frame 1 and engaging the knife 33. As the lever 38 is actuated a quick sharp cut is made and the knife is retracted immediately, so as to not interfere with the operation of the machine. Attention is directed to the fact that this cutting is done when the shaft 14 is not in motion, or, in other words, the cutting operation alternates with the actual feeding of the machine. Thus neither operation will interfere with the other, as each is accomplished on different strokes of the rod 9 and the rack 12.

Secured to the frame 1 and opposite to the side on which the rack is secured is a bracket 39, in which are journaled two oppositely-disposed truncated cones 40 and 41, interposed between which is a sliding frictional gear 42 to form a variable gear for the feeding of the paper roll, to be referred to hereinafter.

The bevel face of the crown-wheel 20 meshes with a bevel-gear 43 on the shaft carrying the cone 40, so as to rotate said cone. Through the medium of the gear 42 motion is imparted to the cone 41. The shaft 44, on which the cone 41 is carried, also carries a pulley 45, which drives a shaft 46 through the medium of a belt 47 and a pulley 48 on said shaft. The paper to be printed is wound on this shaft, while a similar shaft or roll 49 is arranged in slotted bearings 50 and 51 immediately above the first-named roll. This roll or shaft 49 bears at all times upon the paper-roll. As the paper is unwound the diameter of the roll becomes gradually smaller. In order to relieve the paper from all strain, it is necessary that it be unwound at the same speed all the time. This even speed can only be secured by increasing the speed of the roll in proportion to the decrease in the diameter thereof. By mounting roll 49 on the paper-roll it will move downward as the diameter lessens, thereby moving a slotted lever 53, to which it is connected at one end by means of a link 55. The lever is fulcrumed upon a standard 52, and its remaining end is connected to the gear 42 by means of a pitman 54. This gear is moved longitudinally upon the cones, and the speed of cone 41 and the paper-roll is increased gradually as the diameter of said roll decreases.

Of course it will be understood that the cutter will not be employed when both rolls are in use.

In the arrangement illustrated in Fig. 6

two Gordon presses are illustrated as being in tandem and driven one by the other through a belt or chain 56. Two or more of these presses may be so arranged in multicolor-printing according to the number of colors employed. For instance, if two colors are to be used two presses will be utilized; if three colors, three presses, &c. In such instances the route followed by the paper would have to be varied according to the number of presses used. However, the operation of the feeding mechanism would remain practically the same.

In Fig. 6 the slotted lever 2 is dispensed with, and in lieu thereof I have shown the pitman 4 as in direct connection with the rod 9. This gearing up of the feeder and presses may be done to suit the wishes of the purchasers.

My improved attachment is especially adapted for use with presses employing movable platens, as that shown and described in the patent to G. P. Gordon, dated June 16, 1874, No. 151,966. When a Gordon press is used with my feeding mechanism, it is necessary that the platen remain stationary. In order to accomplish this result, I bore a hole 57 in the gear-wheel 3^a, said hole being opposite a stud 61, upon which is mounted a roller 62, which rides in a cam 63, formed in the inner face of the wheel 3^a. The stud extends from a crank-shaft 64, which is so connected to the platen as to impart a rocking movement thereto when wheel 3^a and its cam are revolved. The stud and roller are removed through the hole 57, and the platen is then deprived of means for moving the same. The rocking bed 60 of the press is connected to the wheel 3^a by means of an arm 59. This arm can, if desired, be detached from the wrist-pin 6, as shown in dotted lines, Fig. 1.

While I have specifically described the exact details of construction embodied in the preferred form of my invention, I would have it understood that I do not limit myself to the precise arrangement of press or construction shown and described, but reserve the right to make such changes and alterations as would properly come within the scope of my invention and without departing from the spirit thereof.

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

1. In a device of the character described, the combination with a frame; of a paper-roll-carrying shaft, a reciprocating rack, means for imparting rotary motion to the paper-roll-carrying shaft from the rack, a reciprocating knife adjacent to said shaft, a bell-crank lever pivoted to the frame and engaging the knife, a trip pivoted to the frame and adapted, when moved in one direction, to operate the lever and knife, and a lug upon the rack for operating the trip.

2. In a device of the character described, the combination with a frame; of a paper-roll-

supporting shaft journaled thereon, a second shaft journaled in the frame, means for imparting intermittent rotary motion thereto, in one direction, a truncated cone driven by
 5 said shaft, a second, oppositely-arranged, similar cone, a longitudinally-movable gear contacting with said cones and adapted to transmit motion from one to the other, means for transmitting motion from said second cone to
 10 the paper-roll-supporting shaft, a vertically-movable roll above said shaft, and a pivoted lever connected, at opposite ends to said roll and the gear, respectively.

3. In a device of the character described,
 15 the combination with a frame; of an oscillating lever connected thereto, a sliding rack operated by said lever, a shaft, a ratchet secured thereto, a gear engaged by the rack and loosely mounted on the shaft, a pawl secured
 20 to the gear and normally engaging the ratchet whereby an intermittent rotary motion is imparted to said shaft in one direction, feed-rolls, means for imparting motion thereto, from the shaft, a paper-roll-supporting shaft,
 25 a changeable gear interposed between the two shafts, a vertically-movable roll mounted

above the paper-roll-supporting shaft and adapted to bear upon a roll of paper, and means actuated by the movable roll for automatically varying the speed of the changeable
 30 gear.

4. The combination with a press of the character described, having a platen, an eccentric-shaft, and an oscillating bed, of a frame,
 35 a sliding rack mounted thereon, a pivoted lever connected to the rack and to the gear of the press, whereby a reciprocating motion may be imparted to the rack, feed-rolls, a paper-roll-supporting shaft, means for imparting an intermittent rotary motion to said
 40 rolls and shaft from the rack, a changeable gear intermediate the rack and shaft, and means regulated by the diameter of a paper roll on the shaft, for automatically varying
 45 the speed of the changeable gear.

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

WILLIAM R. MOYERS.

Witnesses:

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 C. H. MILLS.