

No. 756,279.

PATENTED APR. 5, 1904.

W. PIPPERT.
PAPER BAG FEEDING APPARATUS.

APPLICATION FILED SEPT. 30, 1903.

NO MODEL.

5 SHEETS—SHEET 1.

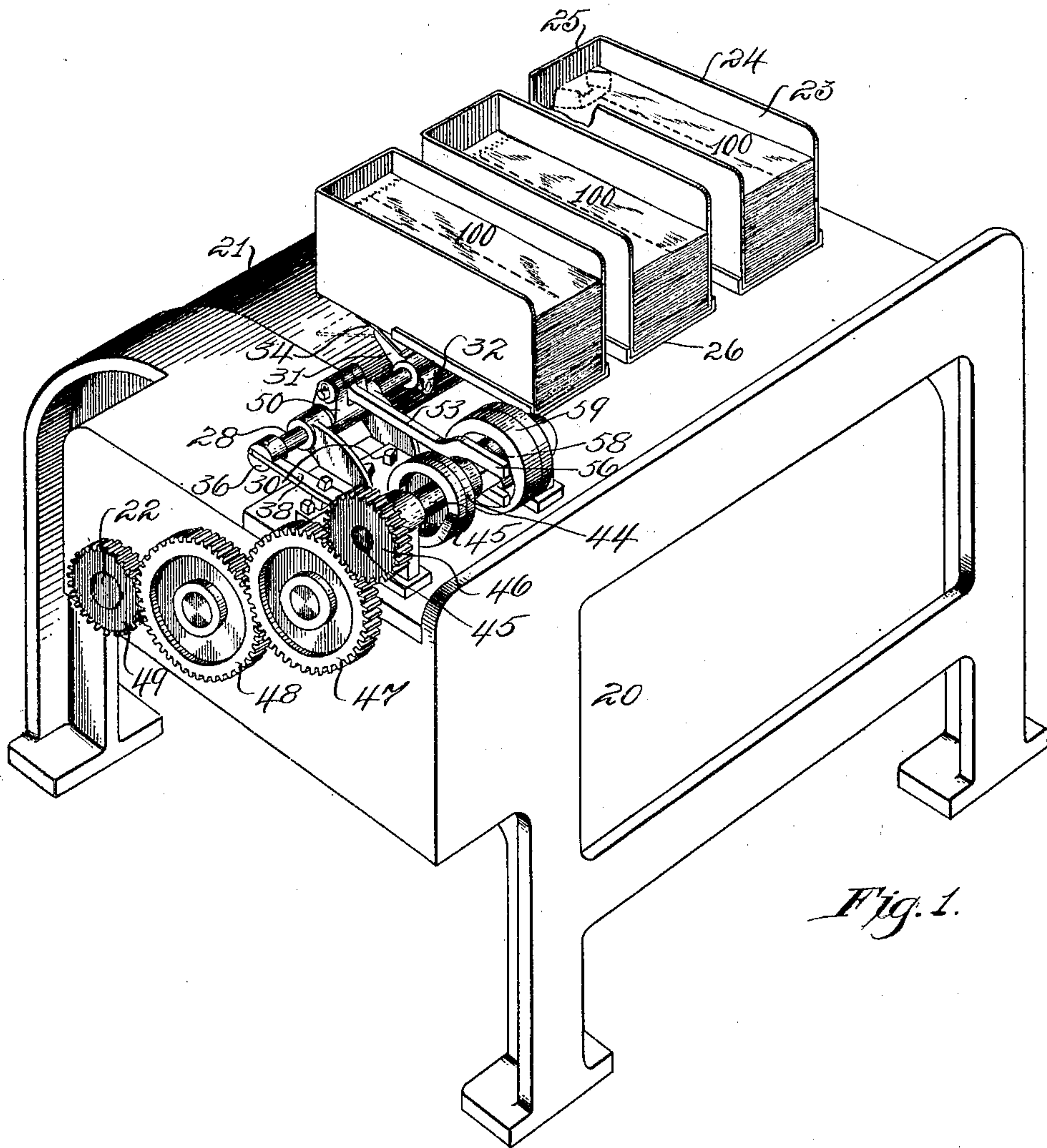


Fig. 1.

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Inventor:

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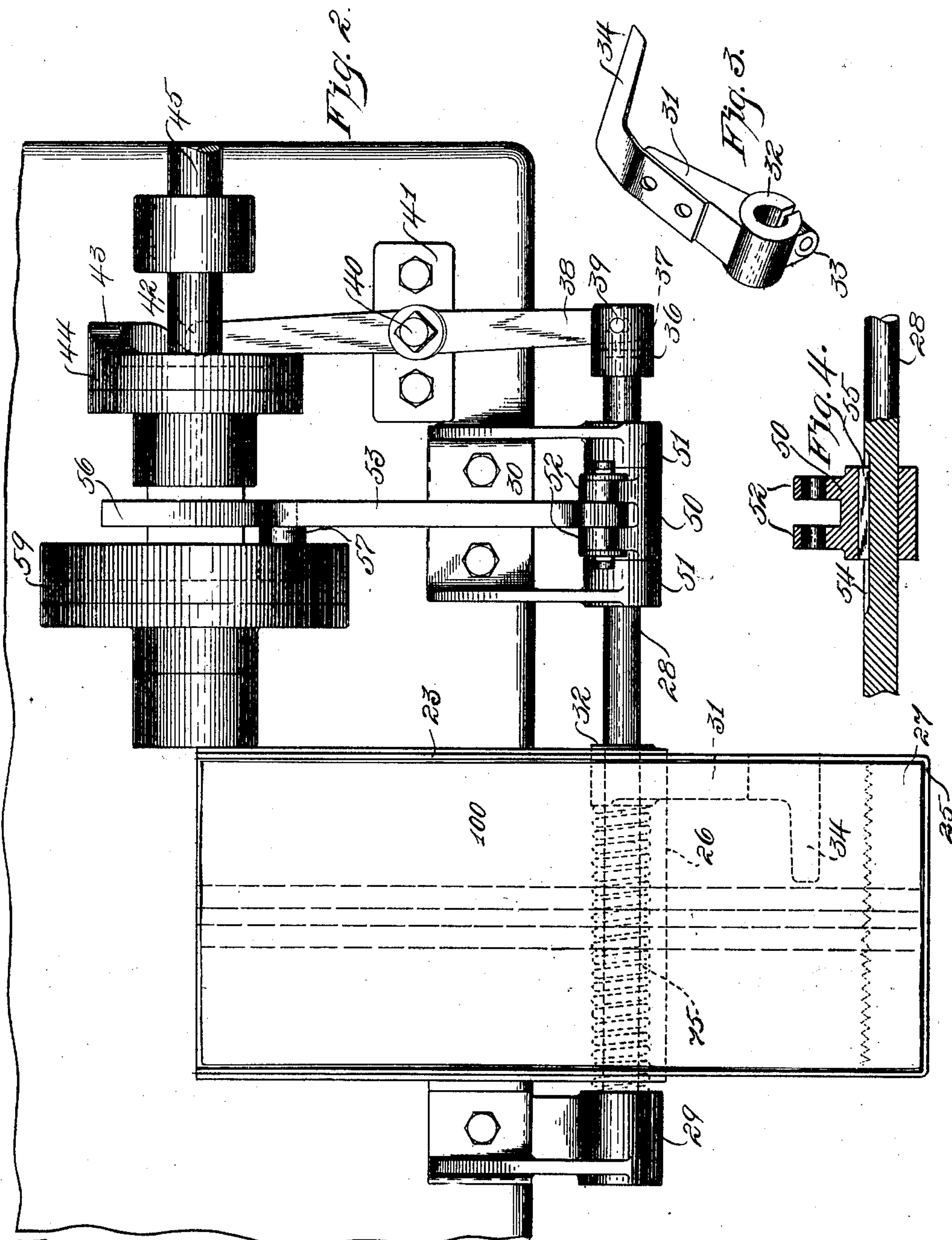
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5 SHEETS—SHEET 2.



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5 SHEETS—SHEET 3.

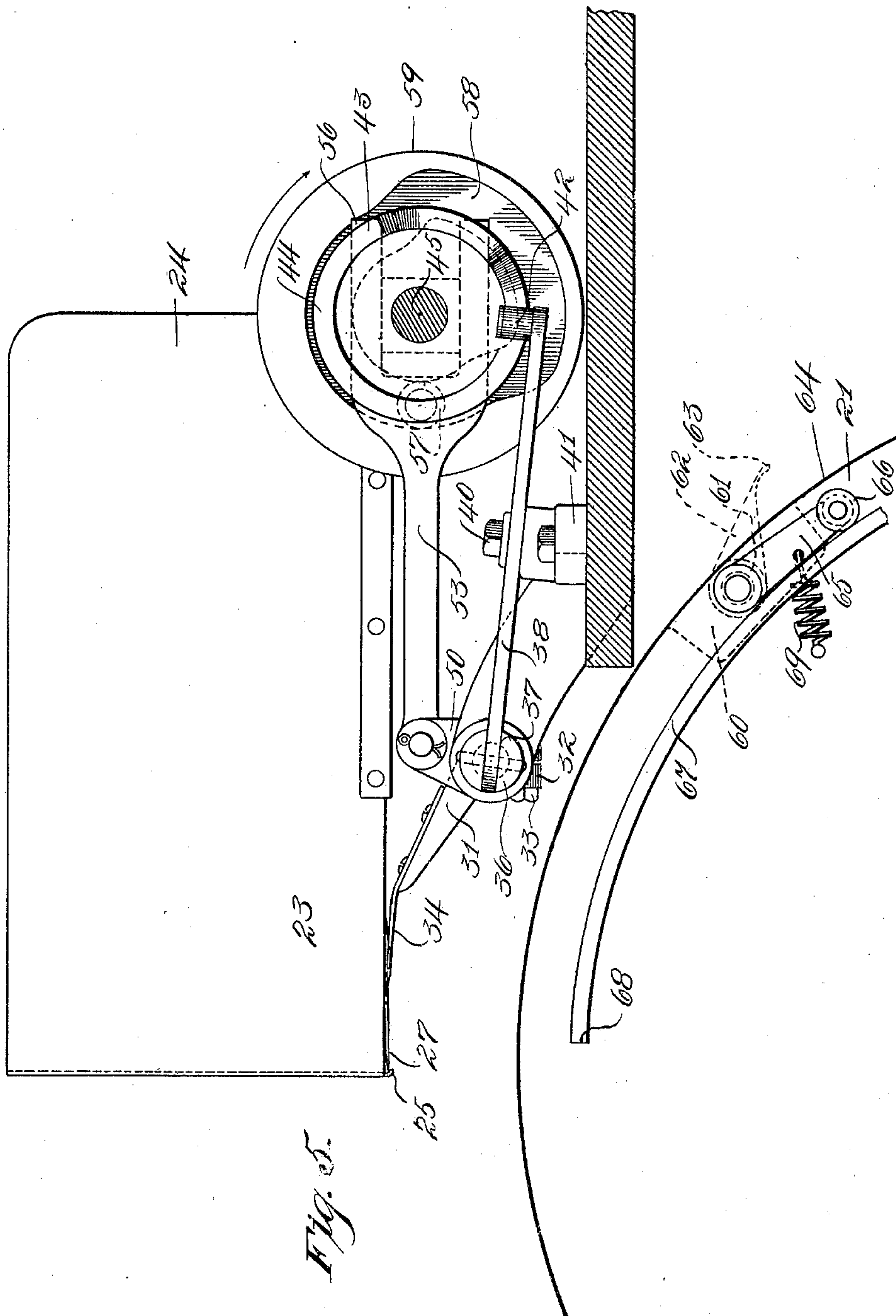


Fig. 5.

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5 SHEETS—SHEET 4.

Fig. 6.

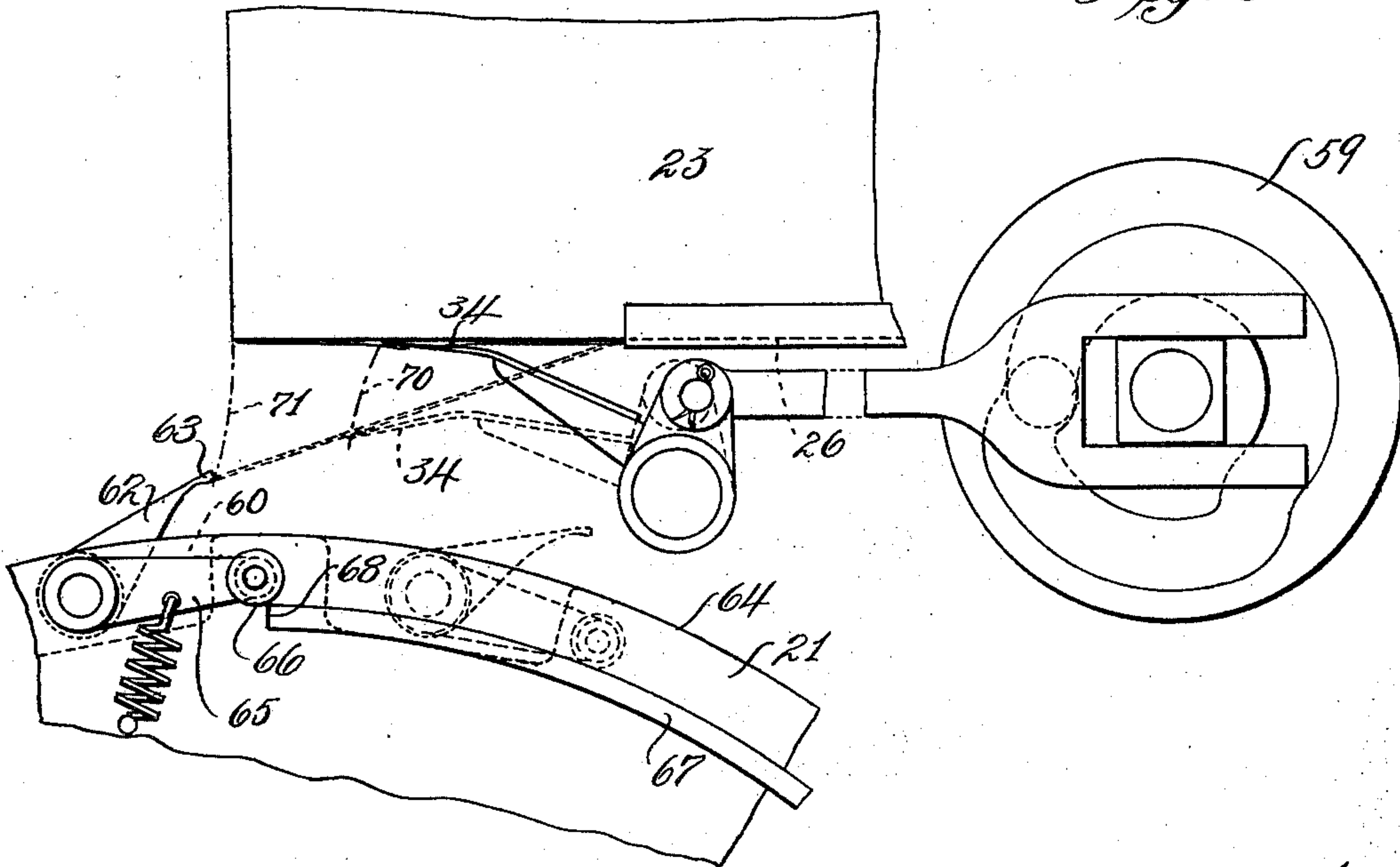
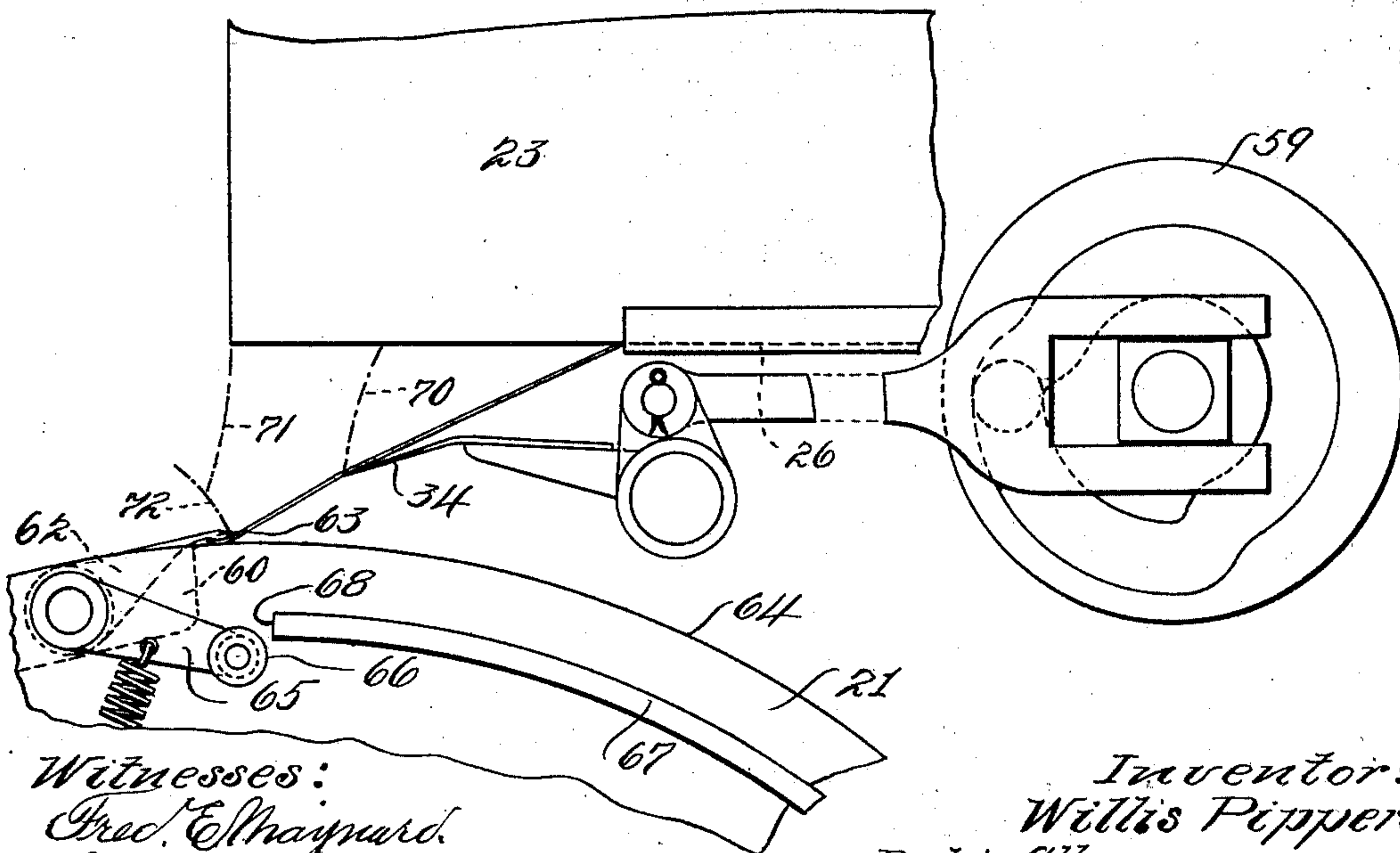


Fig. 7.



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5 SHEETS—SHEET 6.

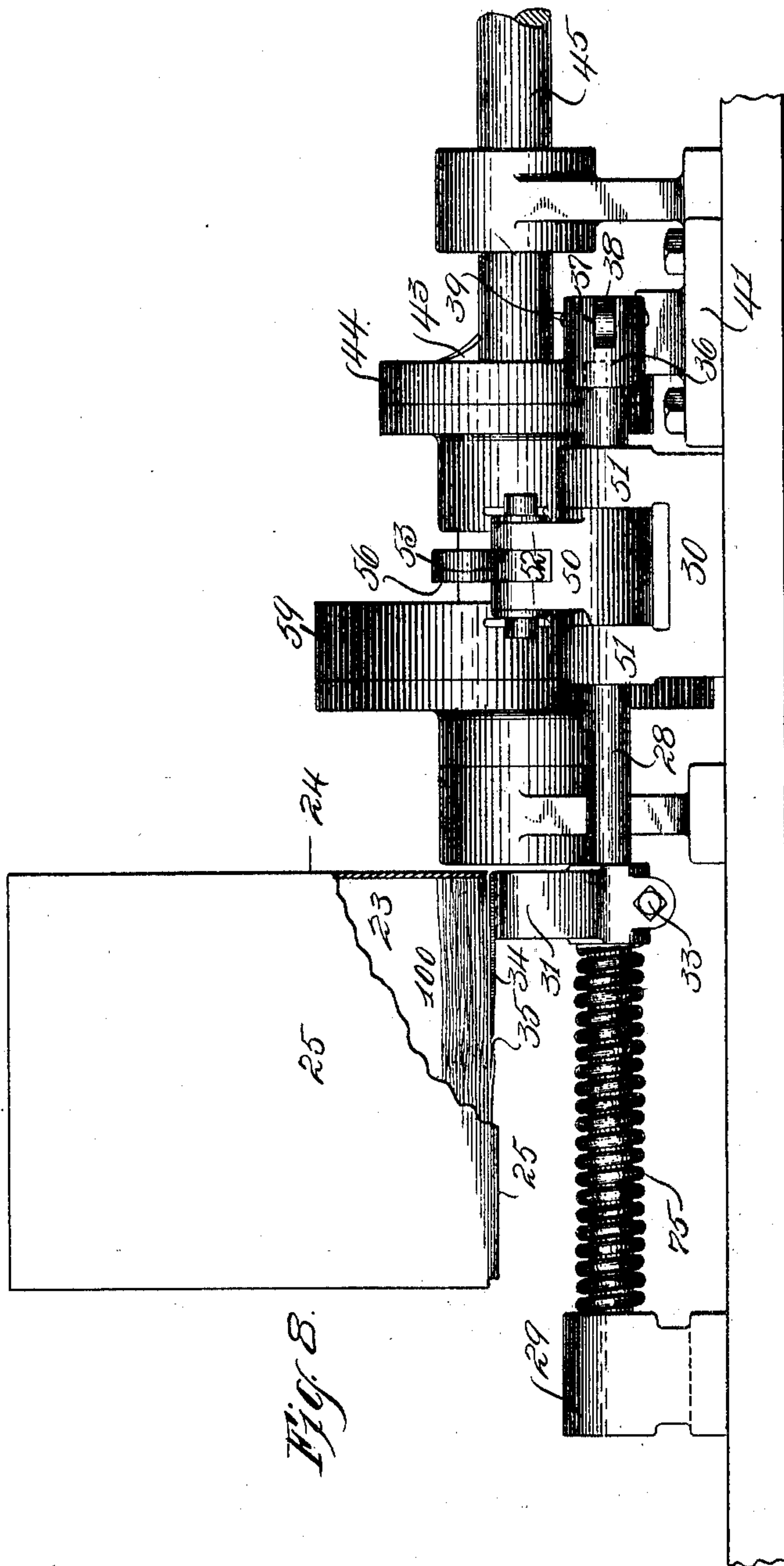


Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIS PIPPERT, OF RUMFORD FALLS, MAINE, ASSIGNOR TO CONTINENTAL PAPER BAG COMPANY, OF RUMFORD FALLS, MAINE, A CORPORATION OF MAINE.

PAPER-BAG-FEEDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 756,279, dated April 5, 1904.

Application filed September 30, 1903. Serial No. 175,130. (No model.)

To all whom it may concern:

Be it known that I, WILLIS PIPPERT, a citizen of the United States, residing in Rumford Falls, in the county of Oxford and State of Maine, have invented certain new and useful Improvements in Paper-Bag-Feeding Apparatus, of which the following is a specification.

This invention relates to and has for an object to provide means to feed paper bags, which may be in a pile, one at a time to a position to be taken up by or controlled from mechanism which is to or will perform some operation under the same.

It may be desired to print some maker's or seller's name, the designation of goods, or a legend upon paper bags which have been made into finished form. It has been a problem to deliver the bags to a printing-press at a speed demanded by the press and at the exact time to enable the press to place the same in position to receive an impression and to place the bags so that there will be uniformity of the location of the printing. By my present invention the same is rendered possible and commercially feasible by a simple mechanical organization. The bags to be printed upon may be passed to the press one at a time from a pile or one from each of several piles at each feed, according to the capacity of the press being fed.

In the drawings accompanying and forming a part of this specification a form of my invention is illustrated wherein Figure 1 is a rear view in perspective of a portion of a cylinder-press equipped with my improvement. Fig. 2 is a plan view of a portion thereof, showing, however, but one tray for holding the bags, whereas Fig. 1 shows a plurality of such trays. Fig. 3 is a perspective of a form of finger for engaging and feeding the bags. Fig. 4 is a detail of a portion of a reciprocatory rock-shaft and its rocker-arm. Fig. 5 is a detail end view of part of the actuating mechanism, showing the finger for feeding the bags in its initial position of engagement with a bag. Figs. 6 and 7 are like views of a lesser part of the device, showing the manner the bag is fed to the cylinder and en-

gaged by the gripping device thereof; and Fig. 8 is a front view of the device as shown in Fig. 2.

The various parts are shown as mounted in and carried upon a frame designated in a general way by 20 and which is shown as carrying a cylinder 21, mounted upon a shaft 22, representing the cylinder of a printing-press, shown herein for the purpose of illustration, as it will be apparent that the invention may be used in connection with other mechanism requiring to be fed with separated bags or like articles.

A number of boxes or trays 23 are shown as supported by the frame of the machine. Each tray is shown as having sides 24 and an end 25, the opposite end of the box being shown as open. In the present instance each box or tray is provided with a floor 26, which comes short of one end of the box, in the present instance short of the end 26, which end overhangs the cylinder 21, and the portion which is not provided with a bottom is adjacent to such cylinder, whereby the pile of bags which will be in the tray will be unsupported at that end. Such piles of bags are designated in a general way by 100.

The bags which this improvement is designed to feed to a press are such as are folded up and in their manufacture have a seam down one side, which seam is not closed up entirely to its edge—that is, the seam in being made up will be gummed nearly to its edge and then overlapped, whereby there will be an opening or pocket down one side of the bag. Two well-known styles of bags may be used, known commercially as “flat” bags and as “satchel-bottom” bags, and when folded up have a lengthwise seam at about the center of one of the flat sides. By arranging the bags in the trays so that the closed ends, which are designated in Fig. 2 by 27, are laid so they overhang the floor where it falls short of meeting the end 25 and lie with the seam portion downward it will be possible to engage such seam in the interval or opening left by the floor to manipulate the bag so that it may be presented to the cylinder of the press.

A reciprocatory rock-shaft 28 is herein illustrated as supported by a pair of brackets 29 and 30, carried by the machine-frame, and which rock-shaft carries an arm 31, which is provided with a split hub 32, having a set-screw 33, whereby it may be adjusted upon the arm and made practically rigid therewith after it has been so adjusted. The arm 31 carries a finger 34, the engaging portion of which in the present instance is shown as disposed transversely to the arm 31 and parallel with the rock-shaft 28. In Figs. 2 and 8 one tray and one finger are shown; but when more trays are used each tray will have its finger or gripping device, as will be apparent. When the parts are assembled and adjusted, the finger 34 will be in a position to engage one of the seams 35 of the bags, in the present instance the bag which is at the bottom of the pile. To enable the finger to engage the bag, the rock-shaft is made reciprocatory within its bearings. A spring 75 is shown to hold it at normal position, and it carries at one end a head or cap 36, swiveled thereon and having a slit end 37, in which a lever 38 is held by a pin 39, the lever being fulcrumed at 40 to a standard 41, supported by the machine-frame and carrying at its opposite end a roll 42, which runs upon the cam-face 43 of a driver 44, fast upon a counter-shaft 45, which has upon it a pinion 46 in mesh with an idle wheel 47, which is in mesh with another idle wheel 48, in turn meshing with a pinion 49, fast upon shaft 22, whereby such counter-shaft is rotated in unison with the cylinder and causes the rock-shaft 28 to reciprocate at each rotation thereof, so that at each rotation of the cylinder the finger 34 will be moved into and out of contact or engagement with the seam of the bag. The rock-shaft carries an actuator or rock-arm 50, which is supported between the hubs 51 of the bracket 30 and has a pair of lugs 52 for engagement with the link 53. The shaft is provided with a groove 54, in which a key 55 of the actuator may slide as the same is reciprocated. After the finger has been reciprocated into position to engage the seam of the bag the shaft will be rocked, whereby the end of the bag engaged will be bent downward and away from the pile to place it in position to be taken into control by the press or other mechanism which is intended to act upon it or perform some work therewith. The link 53 is provided with a forked end 56, straddling the shaft 45 and carrying a roll 57, running in a cam-groove 58 of a driver 59, fast upon the counter-shaft 45, whereby the rocking of the shaft is also controlled from the shaft of the cylinder and caused to rock the shaft and move the finger 34 in unison with the shaft of the cylinder or at a predetermined stage in its revolution. In the present instance the cylinder is shown as having a cut-away portion or chamber 60, in which the hub 61 of a grasping finger or

gripper 62 is mounted. The grasping-finger in the present instance is shown as curved and having an end 63 organized to rest upon the periphery 64 of the cylinder just adjacent to the chamber 60. An arm 65 is shown as fast to the hub 61 and carrying a roll 66 to run upon a track 67, supported on the frame or the machine and ending abruptly at 68, so that upon the roll 66 reaching such end the gripper will act responsive to a spring 69 and engage the edge of the bag which has been separated from the pile. The parts are so organized that after the bag has been engaged by the finger 34 the gripper 62 will be permitted to pass under the bag, as represented in the dotted-line position of such gripper in Fig. 3, to the full-line position of such figure, when the end of the bag engaged by the finger will be quickly brought to the dotted-line position of such bag in said figure, the dotted line 70 indicating the path of movement of the finger 34 and the dotted line 71 indicating the movement of the end of the bag being removed from the tray, after which the roll 66 will run down off the end 68 of the track and the gripper will act quickly to seize the bag, as seen in Fig. 7, the gripper traveling in the path indicated by the dotted line 72, which line is seen to intersect the line 71 and press the bag against the perimeter of the cylinder. The return excursion of reciprocation of the finger will release it from the bag, whereupon further rotation of the cylinder will draw the bag from the pile, the front end 25 of the tray retaining the other bags from movement with the bag drawn from the pile. After the withdrawal of the bag the finger 34 will be lifted again into its normal position, where upon again being started on an excursion of reciprocation it will engage the next bag, which will then be on the bottom of the pile.

The press may be equipped with one or more trays, according as its capacity will require. In the present instance there are shown three trays in Fig. 1, two trays represented as containing flat bags, and one tray as containing satchel-bottom bags. The bag-actuating means may be controlled in any manner desired; but in practice it will be found expedient in many instances to drive the mechanism from a train of gears or other connecting medium from the cylinder of a press or from some driving mechanism which controls the same.

Although the invention is shown as employed in connection with a printing-press, it will be obvious that any other mechanism which will require to have fed to it paper bags may be used in connection with this invention, the invention being merely to select a bag from a series of bags and remove or partially remove the same and place it in a position to come into the control of mechanism, which it is desired to further act upon the bag, and although bags are specifically re-

ferred to yet it will be apparent that any material possessing the characteristics essential to a working of this device may be fed thereby.

Having described my invention, I claim—

5 1. In an apparatus for feeding paper bags which when folded present a lengthwise seam on one side, the combination of a tray to hold the bags and having a floor coming short of one end; an arm; means to reciprocate the
10 arm transversely of the line of such seam and to oscillate the arm upon a plane parallel with the line of such seam, and a finger on said arm adapted upon its excursion of reciprocation to engage said seam of one of the bags
15 adjacent to its bottom when such bag is in the tray with its bottom overhanging the floor thereof, upon the excursion of oscillation to separate the engaged end of such bag from the pile, upon the return excursion of reciprocation to release the bag, and upon the
20 return excursion of oscillation to assume its normal position.

2. In apparatus for feeding paper bags one at a time from a pile of such bags, the combination with means to support the pile except
25 at one end, of a finger to engage the lowermost bag adjacent to its unsupported end; a reciprocatory rock-shaft; an arm fast thereon to carry the finger; means to reciprocate the
30 shaft to engage the finger with the bag, and means to rock the shaft to bend the engaged end of the bag from the pile.

3. In apparatus for feeding paper bags one at a time from a pile of such bags to a printing-press, the combination with means to support the pile except at one end, of a finger to
35 engage the lowermost bag adjacent to its unsupported end; a reciprocatory rock-shaft; an arm fast thereon to carry the finger; means
40 controlled by the press to reciprocate the shaft to engage the finger with the bag, and means controlled by the press to rock the shaft to bend the engaged end of the bag from the pile.

4. In apparatus for feeding paper bags one at a time from a pile of such bags to a printing-press having capacity to receive a bag at certain
45 intervals, the combination with means to support the pile except at one end, of means to grasp the seam of the lowermost bag at its unsupported end; a reciprocatory rock-shaft; an
50 arm fast thereon to carry the grasping means; means controlled by the press to reciprocate the shaft to cause said means to grasp the bag; and means controlled by the press to rock the
55 shaft at intervals timed by its capacity for feed to bend the grasped bag from the pile of bags.

5. In apparatus for feeding paper bags one of such bags from each of several piles of bags
60 at each feed to a printing-press having capacity to receive such a series of bags at certain intervals, the combination with means to support a number of piles of bags and to expose and leave unsupported the end of the lowermost
65 bag in each pile, of means to grasp the seam

of the lowermost bag of each pile at its unsupported end; a reciprocatory rock-shaft; arms fast thereon to carry the grasping means; means controlled by the press to reciprocate the shaft to cause said means to grasp the bags, 70 and means controlled by the press to rock the shaft at intervals timed by its capacity for feed to bend the grasped bags from the piles of bags.

6. In apparatus for feeding paper bags one 75 of such bags from each of several piles of bags at each feed to a printing-press having capacity to receive such a series of bags at certain intervals, the combination with means to support a number of piles of bags and to expose 80 and leave unsupported the end of the lowermost bag in each pile, of fingers to engage the seams of the lowermost bags adjacent to the unsupported ends, a reciprocatory rock-shaft by which such fingers are carried to move said 85 fingers to engage such seams, means to reciprocate the shaft, and means to rock the shaft and fingers and bend the engaged bags whereby such ends are moved from their positions in the piles, and the other portions of the 90 engaged bags retain their original positions therein.

7. In apparatus for feeding paper bags one at a time from a pile of such bags, the combination with means to support the pile except at 95 one end, of a finger to engage the seam of the lowermost bag adjacent to its unsupported end; a reciprocatory rock-shaft; an arm fast thereon to carry the finger; means to reciprocate the shaft to engage the finger with the 100 seam of such bag, and means to rock the shaft to shift the finger and bend the end of the bag engaged by its seam from the pile.

8. In apparatus for feeding paper-bags one at a time from a pile of such bags to a printing-press, the combination with means to support the pile except at one end, of a finger to
105 engage the lowermost bag adjacent to its unsupported end; a reciprocatory rock-shaft; an arm fast thereon to carry the finger; means
110 controlled by the press to reciprocate the shaft to engage the finger with the bag, and means controlled by the press to rock the shaft to bend the engaged end of the bag from the pile and shift the same forwardly. 115

9. In apparatus for feeding paper-bags one at a time from a pile of such bags to a printing-press having a gripper to receive a bag at certain intervals, the combination with means
120 to support the pile except at one end, of means to grasp the seam of the lowermost bag at its unsupported end; a reciprocatory rock-shaft; an arm fast thereon to carry the grasping means; means controlled by the press to reciprocate the shaft to cause said means to grasp 125 the bag; and means controlled by the press to rock the shaft at intervals timed by its capacity for feed to bend the grasped bag from the pile of bags and shift the same forwardly into the grasp of the gripper. 130

10. In an apparatus to feed from a pile of paper-bags, which when folded, present a seam open at one side, the combination of a support for a pile of the bags, a finger to engage the seam of the bag overhanging the support, a rock-shaft to carry the finger, means to reciprocate the shaft to cause the finger to engage the seams, means to rock the shaft to cause the fingers to bend the overhanging portion of the bag away from the other bags in the pile and into position to be grasped by mechanism to be fed thereby, and to permit the supported portion of the engaged bag to remain substantially unmoved.

11. In apparatus to feed paper-bags to a printing-press having means to seize the same at predetermined intervals, the combination with a support for a pile of bags, of an engaging finger, means to shift the said finger transversely of the bag resting upon and overhanging the support to cause the same to engage the seam of such bags, and means controlled in timing with the seizing means to

transversely shift said finger to shift the engaged portion of the bag into position to be seized by the seizing means.

12. In apparatus to feed paper-bags to a printing-press having means to seize the fed bags at predetermined intervals, the combination of means to hold a number of bags, and a reciprocatory and oscillatory finger controlled by the printing-press to seize the lowermost bag adjacent to one of its ends and bend the engaged bag, whereby such end will move from its position in the holder, the rest of the bag retain its original position therein and the engaged end shift into the reach of the seizing means; means to reciprocate the finger and to cause it to seize the bag, and means to subsequently oscillate the finger to cause it to bend the bag.

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