

No. 720,213.

PATENTED FEB. 10, 1903.

L. A. AGNEW.

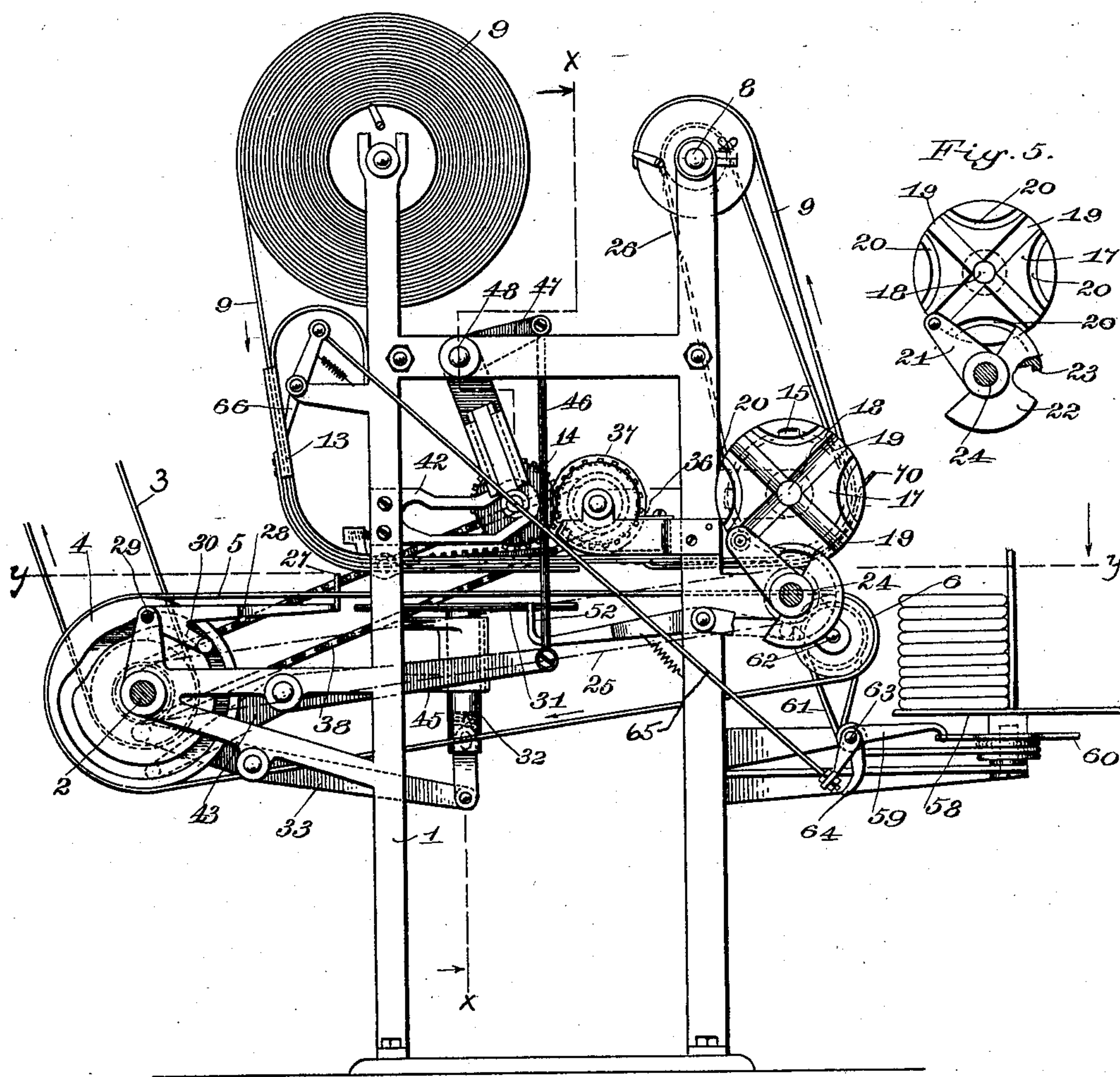
ADDRESSING AND ASSORTING MACHINE.

APPLICATION FILED JULY 10, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

Wm. H. Varnum.

A. G. Kimball.

Inventor:

Lee A. Agnew

Henry J. Miller
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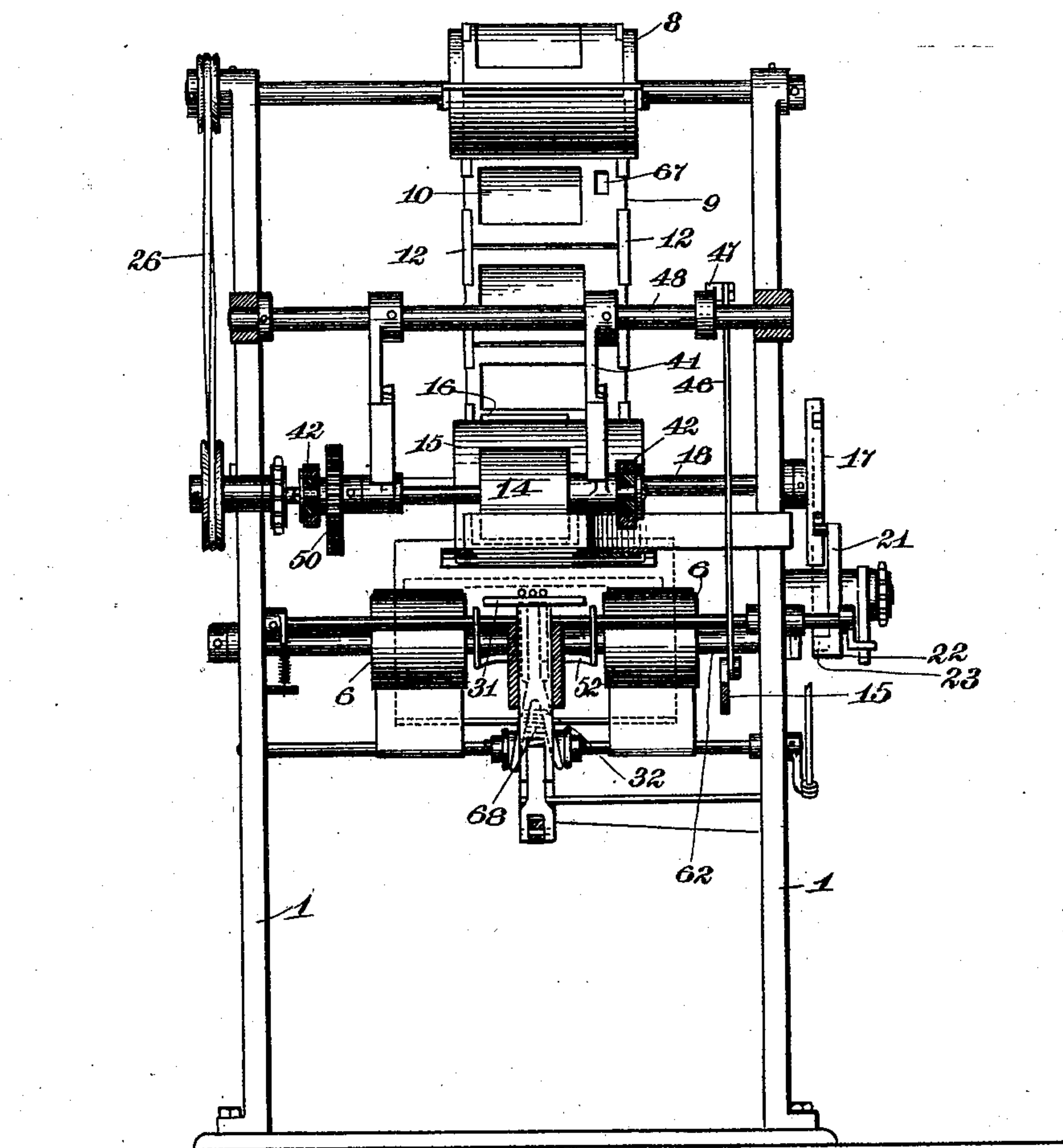
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4 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

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4 SHEETS—SHEET 3.

Fig. 3.

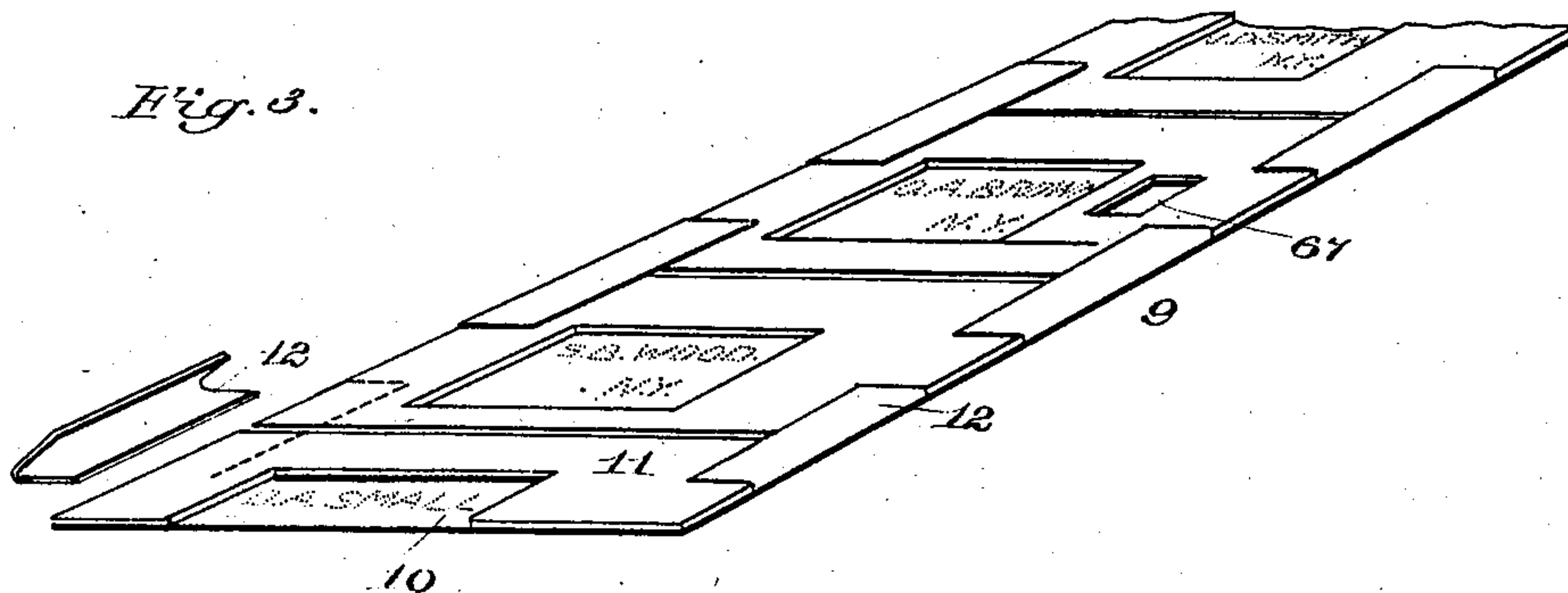
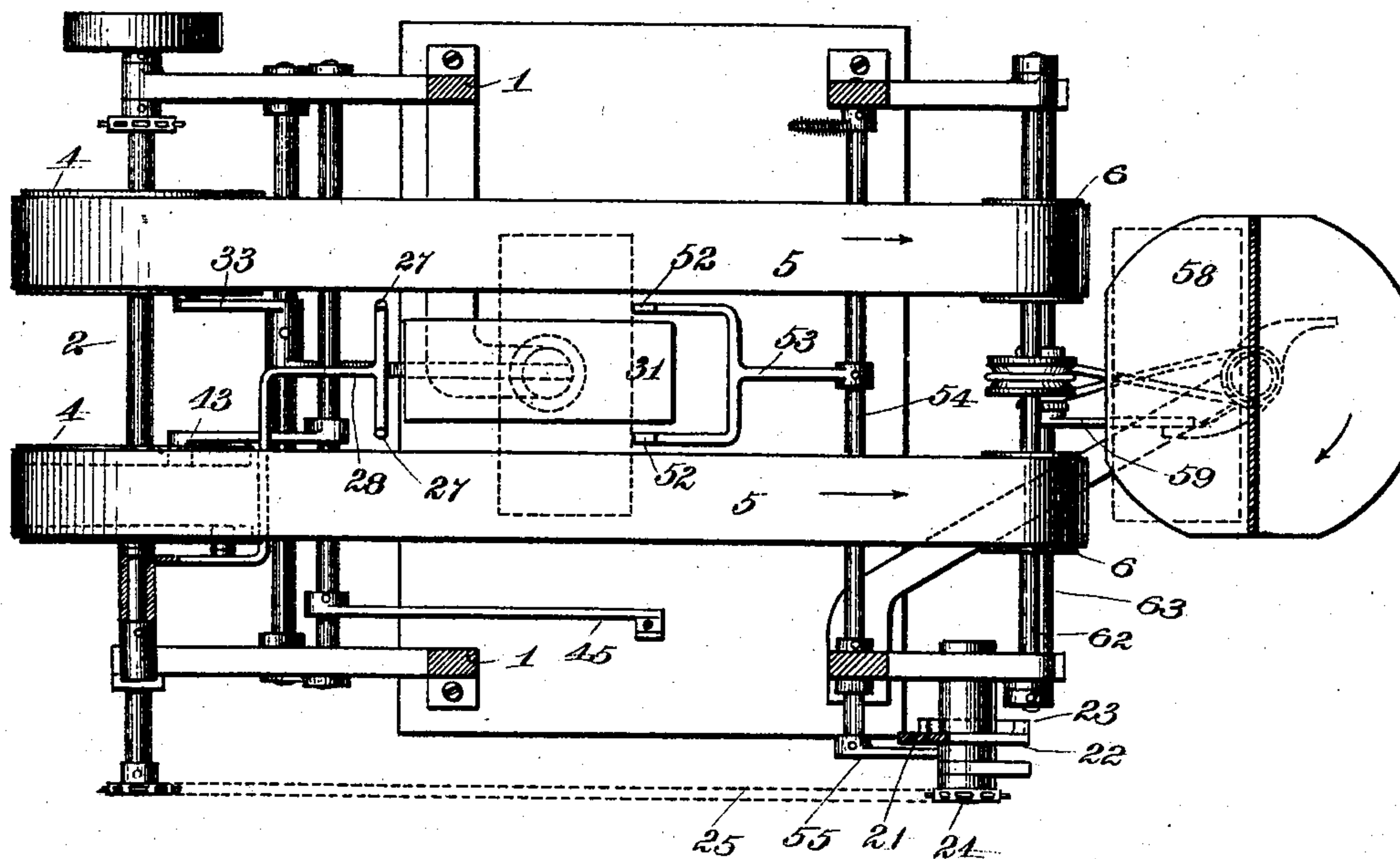


Fig. 4.



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4 SHEETS—SHEET 4.

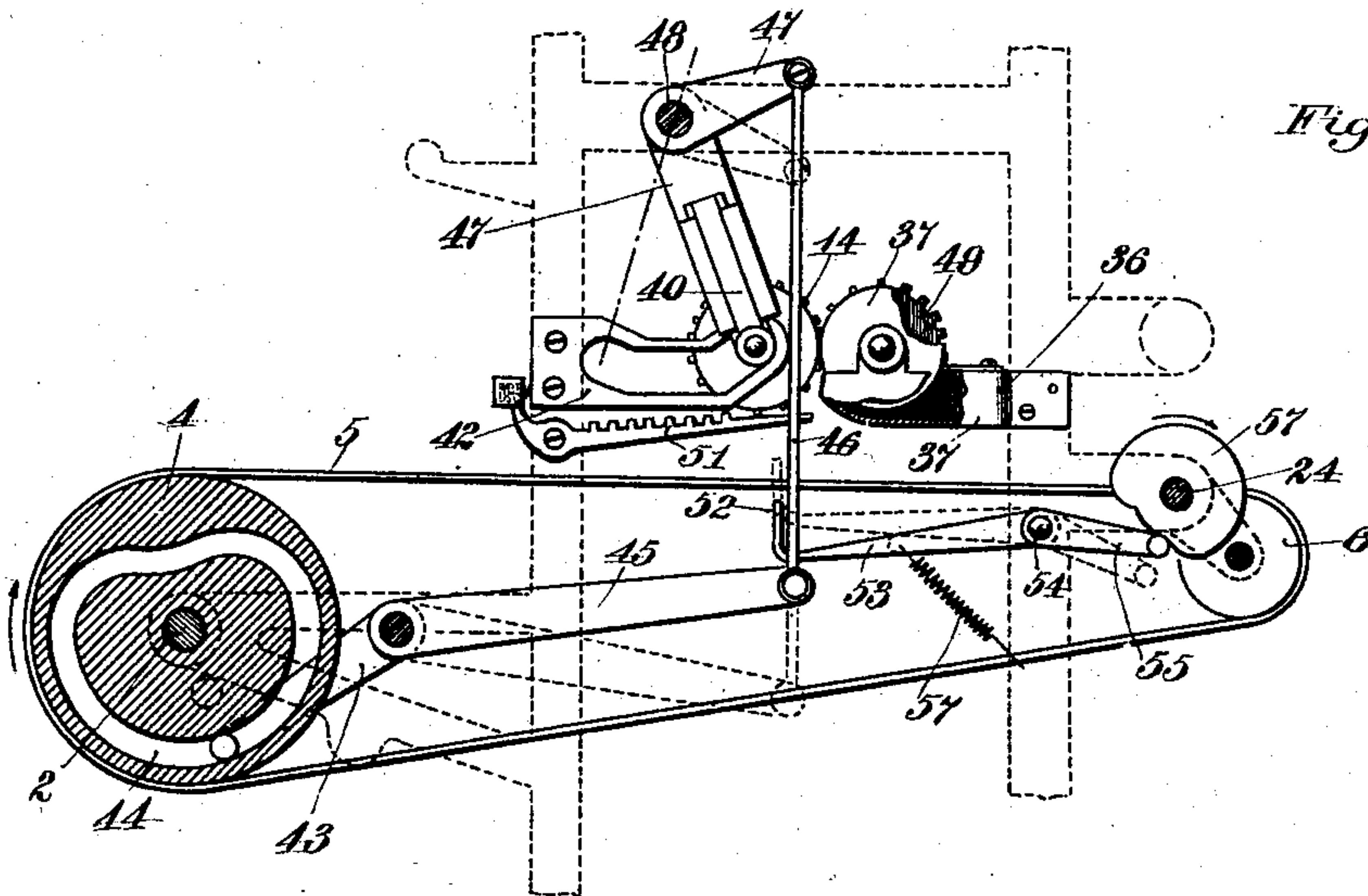


Fig. 6.

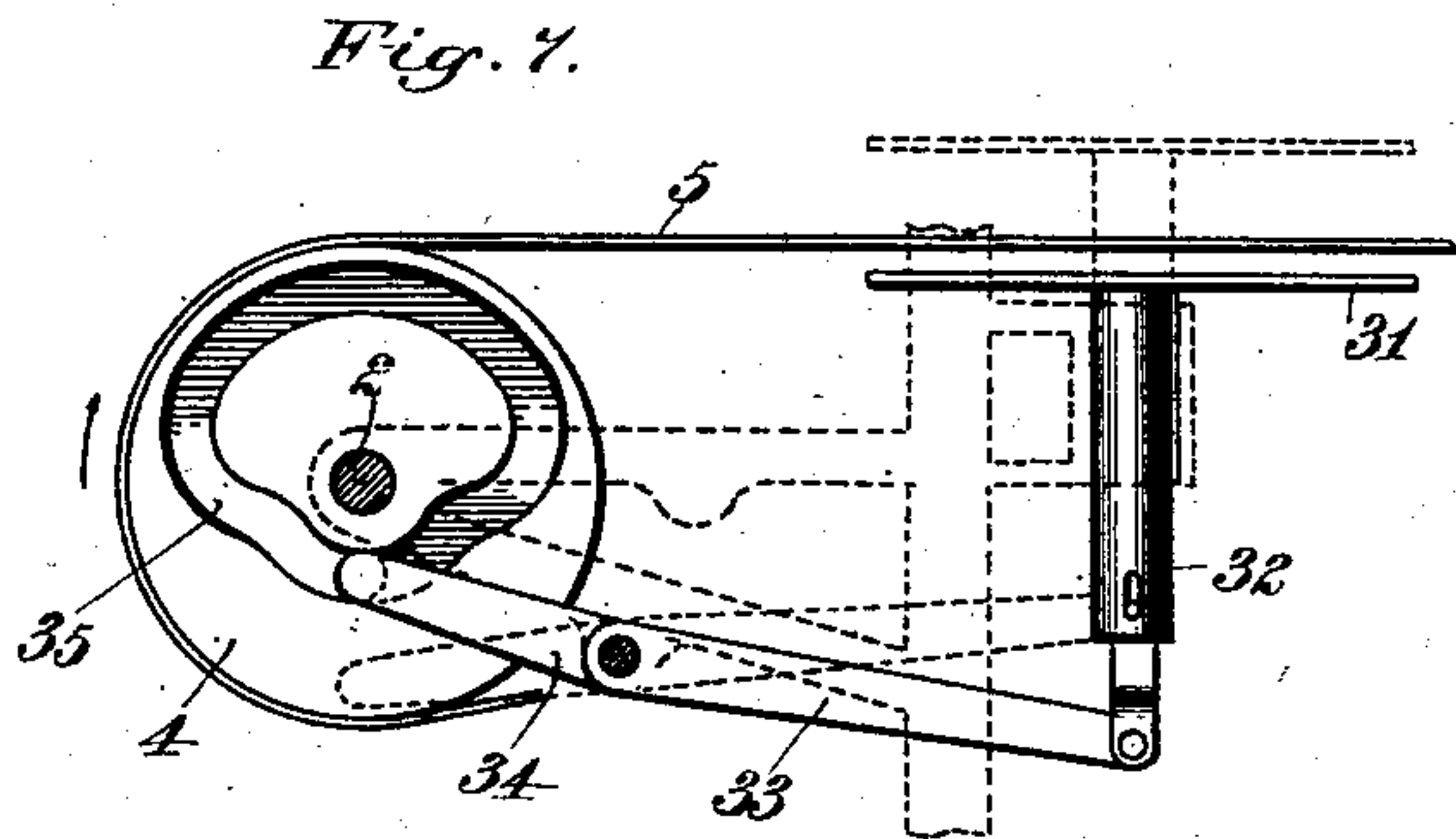


Fig. 7.

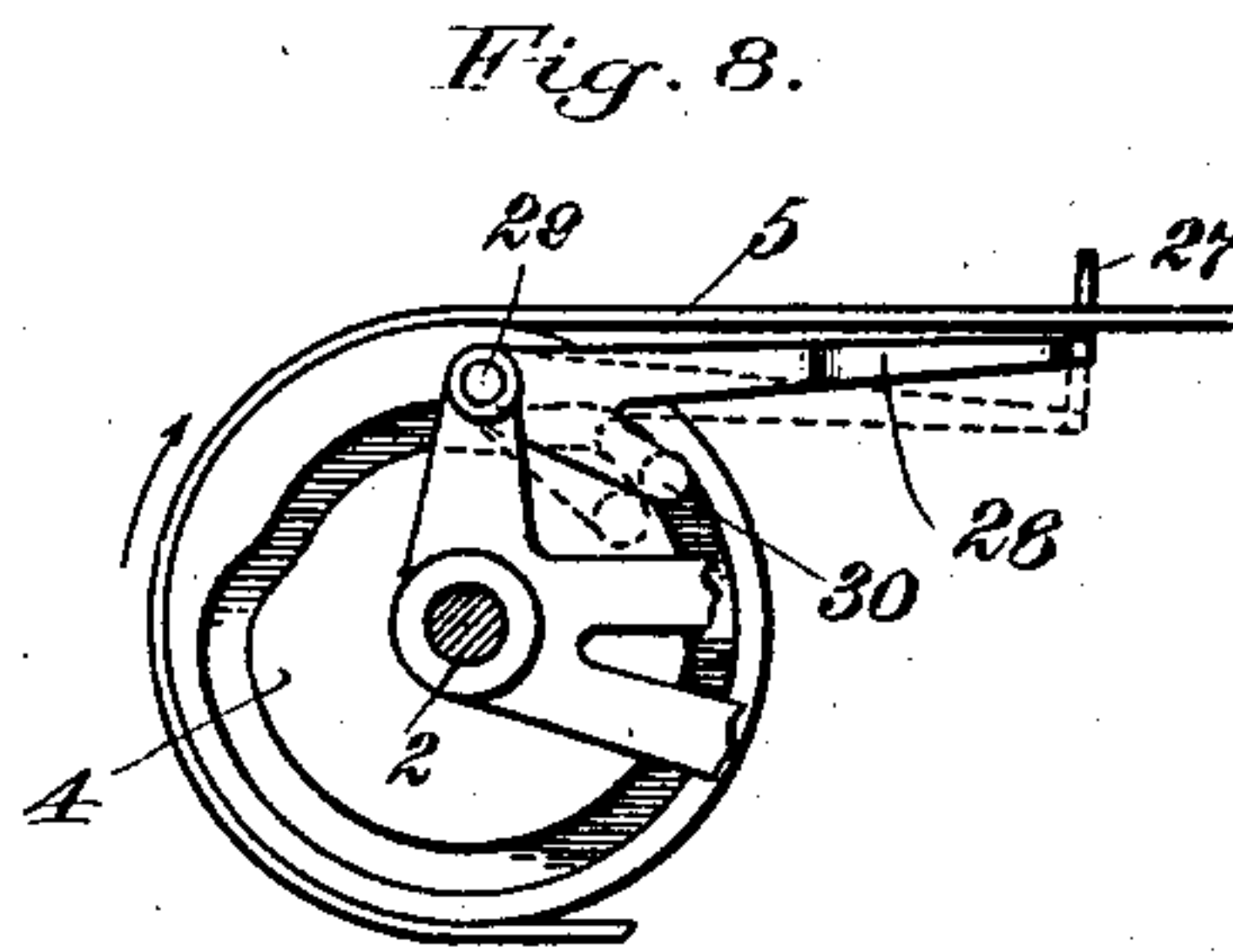


Fig. 8.

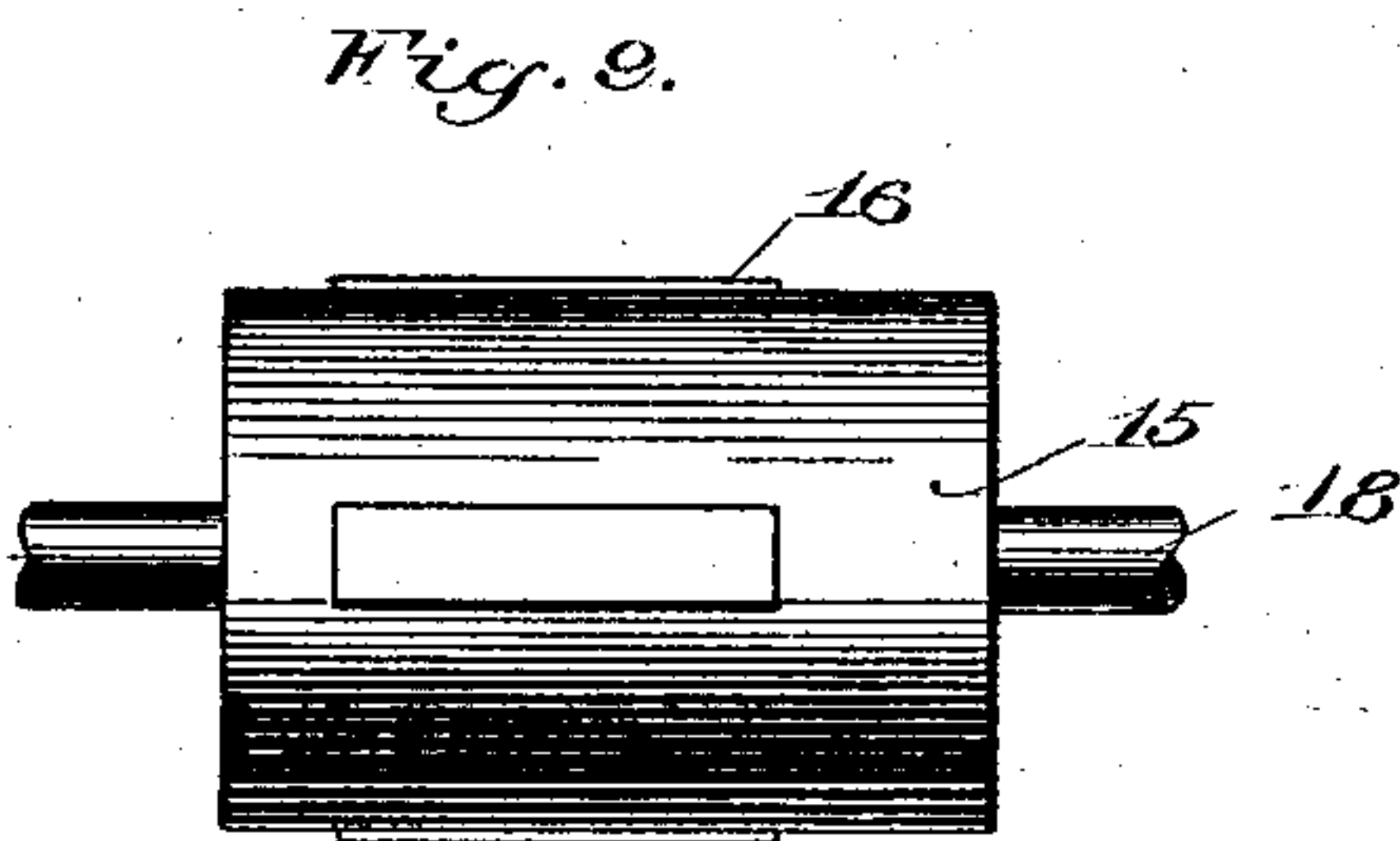


Fig. 9.

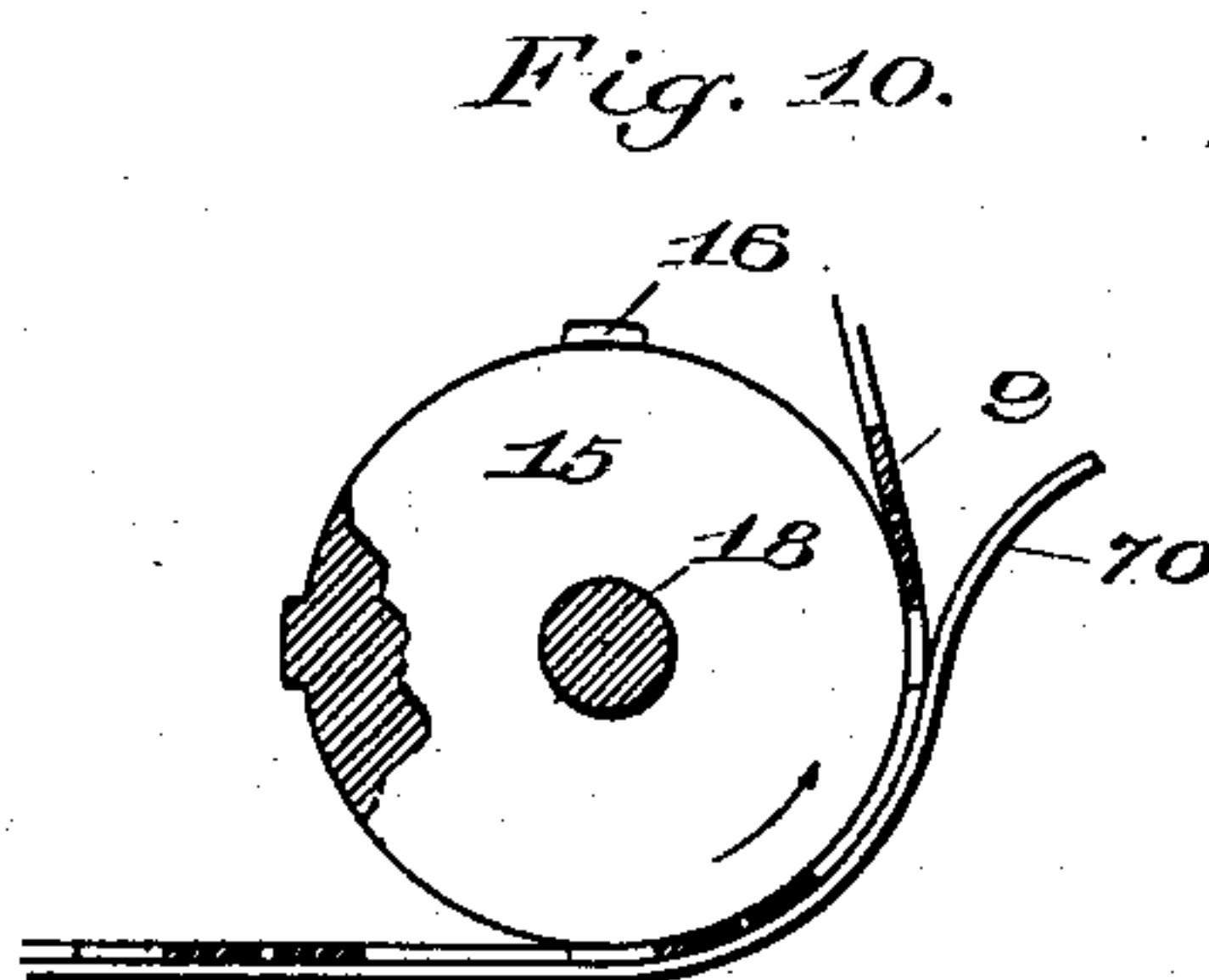


Fig. 10.

Witnesses:

Wm. H. Varnum.

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Inventor:

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UNITED STATES PATENT OFFICE.

LEE A. AGNEW, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE L. RICHARDS,
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ADDRESSING AND ASSORTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 720,213, dated February 10, 1903.

Application filed July 10, 1902. Serial No. 115,042. (No model.)

To all whom it may concern:

Be it known that I, LEE A. AGNEW, a citizen of the United States, residing at No. 150 Nassau street, New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Addressing and Assorting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to addressing and assorting machines intended for addressing newspapers, magazines, and the like and for assorting the same into lots, according to destination or the like, and relates more particularly to addressing-machines which print addresses upon articles to be addressed by means of previously-prepared stencils.

My invention consists in the novel construction of the machine, in the novel means employed for printing from said stencils upon the articles to be addressed, in the novel means employed for alining such articles and for regulating the feeding thereof to the printing mechanism, in the novel means employed for assorting the articles into lots, and generally in the novel combination, construction, and arrangement of the parts of the machine.

The objects of my invention are to simplify and improve machines and apparatus for addressing and assorting newspapers, magazines, and the like, to render the same more reliable and efficient in operation, to simplify the feeding of successive stencils to the printing mechanism, to prevent inking of the printing sides of the several stencils, to regulate in a simple and effective manner the feeding of the articles to be addressed to the addressing mechanism, and to aline such articles properly and to assort the articles addressed automatically by simple mechanism. These objects are attained in the machine and apparatus herein described and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is a side elevation of the machine with the cam for operating the arresting-fingers removed and its follower-lever broken away. Fig. 2 is a transverse section of the

machine on the line xx of Fig. 1 looking in the direction of the arrows. Fig. 3 is a detail perspective view of a portion of the address-strip, showing a plurality of stencil-cards connected together and one of the adhesive fasteners for so connecting the cards. Fig. 4 is a horizontal section of the machine on the line YY of Fig. 1 looking in the direction of the arrow, showing particularly the feed-belts and the general arrangement of the lower portions of the mechanism of the machine. Fig. 5 is a detail view of the intermittent drive mechanism employed for driving the roll which feeds the address-strip. Fig. 6 is a detail elevation of the printing mechanism. Fig. 7 is a detail elevation of the mechanism for raising and lowering the printing-table. Fig. 8 is a detail elevation of the cam mechanism employed for operating the alining-fingers. Fig. 9 is a detail side elevation of the roll which feeds the address-strip, and Fig. 10 is a detail end view of said roll and of the spring-guide which holds the address-strip against the same.

In this machine I employ for addressing newspapers or other articles a series of stencil-cards, each consisting of a small sheet of stencil-paper or other suitable material having the letters or characters which constitute the address outlined thereon by fine perforations, such as may be produced by needles arranged in the form of the letters of the alphabet, each sheet of stencil-paper being mounted upon a cardboard frame and secured to the frame in any suitable manner, as by pasting the corners of the stencil-sheet to the frame. The open space of the frame includes the entire address. The cards are secured together so as to form a strip in any suitable manner, as by means of adhesive strips of paper, cloth, or other suitable material, the nature of the fastening material being such that any card in the strip may be removed therefrom readily, as by tearing apart the connecting-strips or by tearing them off from the stencil-cards, after which the parts of the strip may be joined together as before, or one or more stencils may be added to the strip at any point therein in a similar manner. The address-strip so formed is wound upon a supply-reel and by suitable feeding mechanism, herein-

after described, is drawn from such reel intermittently, and the several stencil sections or cards thereof are successively inked and pressed against the articles to be addressed, 5 after which the strip is wound upon a receiving-reel, which another time may become a supply-reel. The cardboard frames of the several stencil-cards prevent contact of the inked side of one stencil with the printing side 10 of an overlying or underlying stencil, and so prevent smudging of the articles addressed. The cardboard frames also serve as convenient means by which the feeding-roll may grasp the several sections of the address-strip 15 and feed the same along, and orifices in certain of the frames determine the action of the assorting mechanism. The articles to be addressed, delivered from any convenient source in any convenient manner, are received 20 by carrying-belts, are successively alined thereon and arrested until the proper time for feeding of them to the printing mechanism, and are then permitted to move onward, and when in registry in the printing mechanism 25 are arrested again over a printing-table, which then rises and supports the same while an inking or printing roll applies ink to a stencil and presses the same against such article on such table. The table then descends, 30 restoring the article so addressed to the carrying-belts, which then feed the same along and deposit it upon a revolving table, normally held stationary. At intervals a releasing-finger encounters an orifice in one of the 35 stencil-cards and enters the same temporarily, releasing the said revolving table in so doing and permitting the same to turn quickly and bring a new section of the table opposite the carrying-belts.

40 Referring now to the drawings, numeral 1 indicates the frame of the machine, and 2 a driving and cam shaft mounted in bearings in said frame and arranged to be driven by suitable means, as by a belt 3. Numerals 4 45 indicate band-wheels on said shaft, about which pass carrying-belts 5. At the opposite end of the machine are other belt-pulleys 6. 7 indicates a supply-reel, and 8 a receiving-reel, both supported in bearings in the frame 50 1 in such manner as to be readily removable therefrom, and 9 indicates an address-strip. Said strip consists of a series of stencil-cards, each consisting of a sheet 10 of thin stencil-paper or other suitable material, having characters outlined thereon by perforations 55 mounted upon a frame 11, of cardboard or other suitable material, the several cards being detachably secured together by convenient means—as, for instance, by strips 12 of adhesive paper or fabric. The address-strip 60 when drawn from the supply-reel 7 passes through a support and guide 13, formed of two similarly-shaped strips of sheet metal spaced slightly apart, and under an inking or printing roll 14 and around a feeding-roll 15, 65 after which it is wound upon the receiving-reel 8. Said feeding-roll has a series of pro-

jections 16, Figs. 9 and 10, adapted to engage the inner edge of the frame of each stencil-card, and thereby to feed the strip along with- 70 outscratching, piercing, or otherwise marring the several cards. The feeding-roll is driven by an intermittently-operating driving mechanism (shown particularly in Fig. 5) consisting of a wheel 17, secured to the same 75 shaft 18 to which the feeding-roll 15 is secured and having in its face radial grooves 19 and circular grooves 20, an arm 21, carrying a pin adapted to work in the grooves 19, and a locking-sector 22, having a circular lip 80 23, adapted to work in the grooves 20 of the wheel 17. Arm 21 and locking-sector 22 are secured to the same shaft 24, which is driven by a sprocket-chain 25 (indicated in dotted lines in Figs. 1 and 4) or other suitable driv- 85 ing device from the main driving-shaft 2. In the operation of this intermittently-operating driving mechanism as the pin on arm 21 enters one of the grooves 19 the locking-lip 23 is disengaged from the wheel 17, and the 90 said wheel is then turned through a quarter-turn, after which the arm 21 is disengaged from the wheel, and simultaneously the lip 23 enters one of the grooves 20 and locks the wheel 17, preventing further movement there- 95 of until the arm 21 completes a revolution. Each revolution of the shaft 24 therefore causes a quarter-turn only of the feeding-roll 15, and the parts are so arranged that this movement of the roll 15 occurs just after an 100 impression has been made by means of one of the stencil-cards.

The receiving-reel 8 is driven from shaft 18 by means of a belt 26 or other suitable driving device, as shown in Fig. 2. The belt is 105 arranged to slip somewhat as the diameter of the receiving-reel increases to compensate for such increase in diameter.

Feeding of the articles to be addressed to the printing mechanism and their alinement 110 is controlled by alining-fingers 27, operated by the cam mechanism shown in Fig. 8. These alining-fingers form a forked extension of an arm 28, pivoted at 29, Figs. 1 and 8, to the frame of the machine and provided with a 115 follower 30, working in a cam-groove in one face of one of the belt-pulleys 4. These alining-fingers square, with reference to the belts and the printing mechanism, the papers which are carried by the belts 5 and permit the pa- 120 pers to move forward singly and at the proper time to bring them over the printing-table 31 just before the latter rises. Table 31 is raised and lowered by the cam mechanism shown in Fig. 7. Said table lies between the belts 5, 125 as shown in Figs. 2 and 4, but is of such width that when it rises it lifts a paper or other article to be addressed which may be over it away from the belts 5 and holds the same while an address is being printed thereon. 130 The table is mounted upon a plunger 32, supported and guided by the frame of the machine in such manner as to be vertically movable and to which is connected an arm 33,

pivotally mounted and having an extension 34, engaging a cam-groove 35 in one of the belt-pulleys 4. As said pulley rotates the table 31 is alternately raised and lowered.

5 The printing mechanism is shown particularly in Fig. 6. 36 designates an ink-well, and 37 an ink-distributing roll driven by means of a chain 38, Fig. 1, from the shaft 2. The inking or printing roll 14 is supported in
10 sliding bearings 40, carried by radial arms 41, the radial position of the roll being determined by slotted cam-guides 42. The radial arms are rocked by means of a follower-lever 43, engaging a cam-groove 44 in a face
15 of one of the belt-pulleys 4 and having an extension-arm 45, connected by a link 46 to an arm 47 upon a rock-shaft 48, to which both radial arms are secured. Normally distributing-roll 37 and inking-roll 14 are in con-
20 tact, and said rolls are provided with corresponding spur-gears 49 and 50, which in this position of the rolls intermesh, so that roll 14 is driven from roll 37 and receives ink therefrom; but at intervals the cam-groove 44
25 causes the roll 14 to move to the left of Figs. 1 and 6, and the gear 50 of said roll then engages a rack-bar 51, so that as it moves it rotates. The rack is pivotally mounted and spring-pressed and its front is unprovided
30 with teeth, so that when rolls 14 and 37 are together the rack-bar does not interfere with the rotation of roll 14; but as soon as the roll 14 moves to the left the teeth of wheel 50 engage the teeth of the rack, the latter yielding
35 if necessary to permit such engagement, and in its further movement the inking-roll is rotated.

The articles to be addressed are arrested when they arrive over the printing-table 31
40 by arresting-fingers 52, carried by a pivoted arm 53, secured to a rock-shaft 54, to which a follower-lever 55, coacting with a cam 56 on shaft 24, is also secured. A spring 57 holds the follower-lever in contact with the cam.

45 The articles addressed are delivered by the belts 5 upon a table 58, revolvably mounted, but normally held stationary, by means of a locking-lever 59, engaging a cam 60, mounted on the central fixture of said table. Said
50 table is driven by means of a belt 61 from the shaft 62 of the belt-pulleys 6 or by other suitable means; but this belt slips when the table is so held by the locking-lever 59. Said lever 59 is mounted upon a rock-shaft 63, provided
55 with an arm 64 and a finger, this finger being connected by a rod 65 with a pivoted and spring-pressed trigger 66, adapted to enter any one of a series of orifices 67, Fig. 3, which may
60 be in certain of the stencil-cards. Normally the table is held stationary, as above stated; but when the trigger 66 enters one of said orifices the locking-lever 59 is raised sufficiently to release the table and permit the same to
65 turn sufficiently to bring a new section of its surface opposite the belts 5, in which position it is again held by the lever 59, the stencil-strip having in the meantime moved onward,

so as to move the trigger 66 outward. By this means the articles addressed are assorted, according to destination or otherwise, as may
70 be desired.

The operation of the machine is as follows: The machine being in operation and papers or other articles to be addressed being delivered to the belts 5 in any suitable manner,
75 each paper so delivered is detained by the alining-fingers 27 until the moment comes for feeding it into the printing mechanism and by being so detained is alined. The arm 21 in its rotation enters one of the grooves 19, and
80 thereby moves the wheel 17 and the feeding-drum 15 around a quarter-turn, thereby feeding forward a new section of the address-strip to the printing-point and winding up the portion of the address-strip which has passed the
85 printing-point. At the same time the alining-fingers 27 drop, permitting the article to be addressed to be fed forward by the belts 5 until the arresting-fingers 52 are encountered. The printing-table 31 then rises, lifting the
90 article to be addressed and holding it stationary for an instant above the belts 5. The printing or inking roll 14 then moves to the left, being caused to revolve as it does so by the rack 51, and as it moves the cams 42 de-
95 press it, so as press the stencil-card which is then at the printing-point down upon the article to be addressed. The ink upon the printing-roll is there applied through the perforations which outline the characters of the ad-
100 dress upon the stencil-card to the article to be addressed. The printing-table 31 is supported by a spring 68, (indicated in dotted lines in Fig. 1,) and therefore yields sufficiently
105 to compensate for variation in thickness of the articles to be addressed. The printing-roll moves to the left and then back into contact with the ink-distributing roll, and the printing-table then descends, restoring the
110 addressed article to the belts 5, which then carry the same onward and deposit it upon the table 58, the arresting-fingers 52 descending temporarily to permit the passage of the article.

In order to assort the articles addressed into
115 lots, certain of the stencil-cards are provided with orifices 67 opposite the trigger 66. When said trigger enters one of said orifices, the table 58 rotates, as above described, bringing a new portion of its surface into position to
120 receive the addressed articles.

Any stencil-card may be removed from the address-strip at any time by simply tearing or otherwise removing the connecting-strips which attach it to the adjacent stencils, and
125 the sections of the strip may then be joined as before, and in a similar manner new stencils may be added wherever desired.

The cardboard frames of the stencil-cards not only serve to protect the stencils against
130 excessive wear, but afford convenient means for operating the assorting-trigger and for feeding the strip and, what is more important still, render it possible to roll the strip tightly

without the transfer of ink to the printing side of any stencil.

The stencil-strip is held in contact with the feeding-roll 15 during its passage around the same by a spring 70.

I do not limit myself to the particular construction and arrangement of the parts herein illustrated and described.

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

1. In an addressing-machine, the combination, with a stencil-strip, and means for feeding the same, of a printing-table, feeding-belts adapted to deposit the articles to be addressed upon said table, alining-fingers, arresting-fingers for arresting such articles when over said table, elevating mechanism for lifting said table with an article to be addressed thereon, and means for inking the stencils and applying the same to the articles to be addressed.

2. In an addressing-machine, the combination, with a stencil-strip, and means for feeding the same, of a printing-table, feeding-belts adapted to deposit the articles to be addressed upon said table, alining and arresting fingers, cam mechanism for operating them, elevating mechanism for lifting said table with an article to be addressed thereon, and means for inking the stencils and applying the same to the articles to be addressed.

3. In an addressing-machine, the combination, with a stencil-strip, and means for feeding the same, of a printing-roll, an inking device therefor, means for moving said roll over the stencils, a gear-wheel for rotating said printing-roll, and a spring-pressed rack-bar

adapted to engage such gear-wheel during the motion of the roll over the stencils, thereby causing said roll to rotate.

4. In an addressing and assorting machine, the combination, with means for conveying the articles to be addressed through the machine, a movable receiving device adapted to receive the addressed articles from such conveying means, and provided with means for driving it, and means for holding such receiving device stationary at times, of a stencil-strip provided with a series of perforations, feeding and printing devices therefor, and a releasing-trigger located opposite said strip and adapted to enter one of said series of perforations, and arranged when it enters such perforations to release the movable receiving device.

5. An addressing and assorting machine comprising means for conveying the articles to be addressed through the machine, a movable receiving means adapted to receive the addressed articles from such conveying means and provided with driving mechanism, a controlling-trigger for the movable receiving means, a stencil-strip, and feeding and printing devices therefor, said stencil-strip being constructed to normally hold the trigger in position to lock the movable receiving device and, at times, to permit the movement of the trigger to release said receiving device.

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

LEE A. AGNEW.

Witnesses:

HAROLD KYLE,
FRANK Z. DEMAREST.