

E. S. & B. H. MILLER.
CAN LABELING MACHINE.

APPLICATION FILED JULY 7, 1909.

Patented Sept. 6, 1910.

4 SHEETS—SHEET 1.

969,715.

Fig. 1.

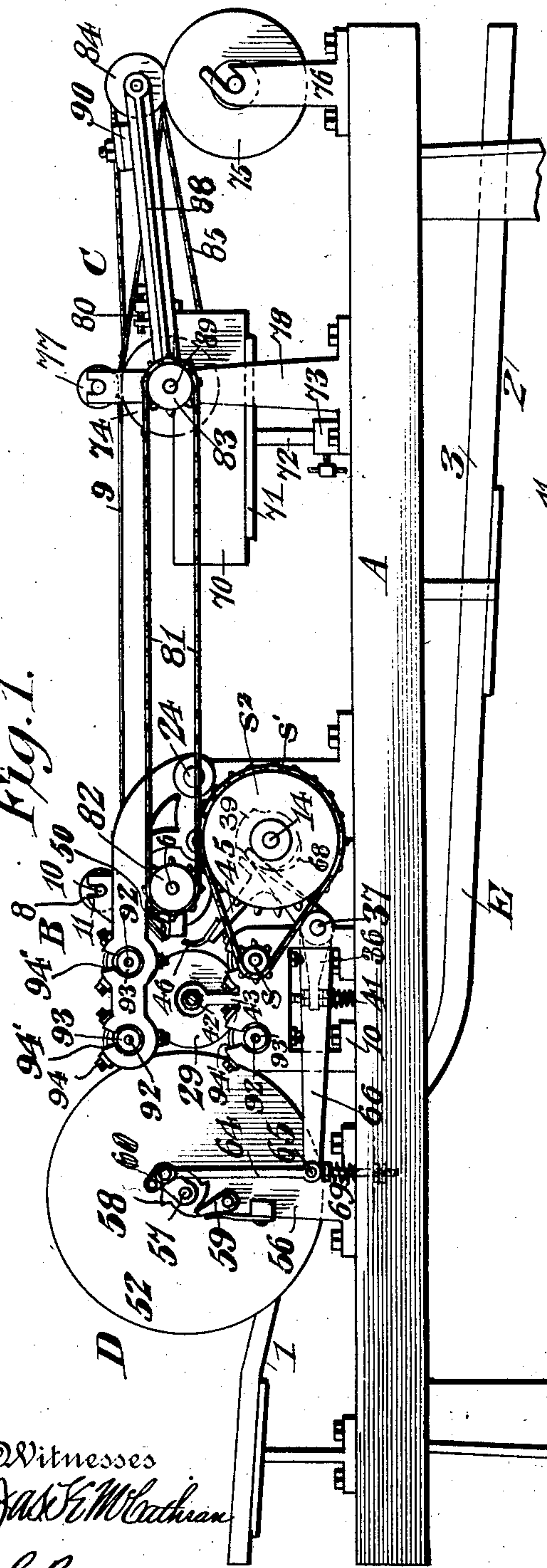
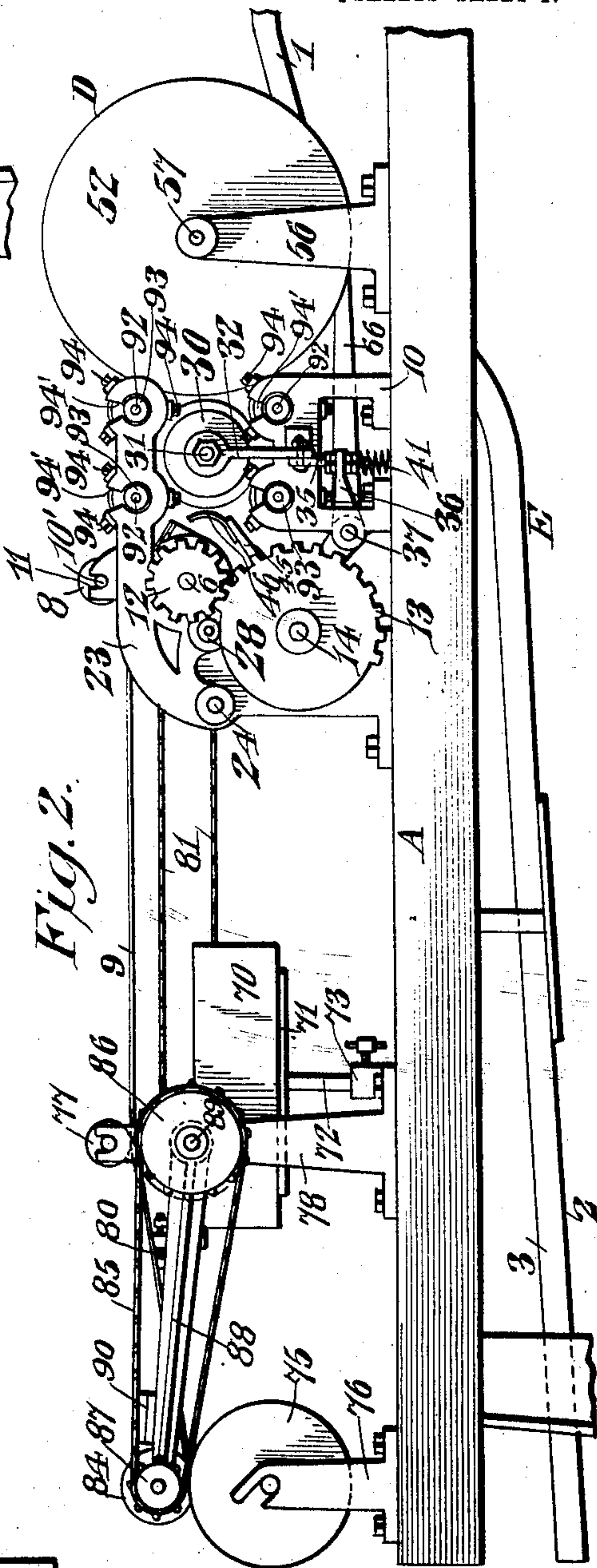


Fig. 2.



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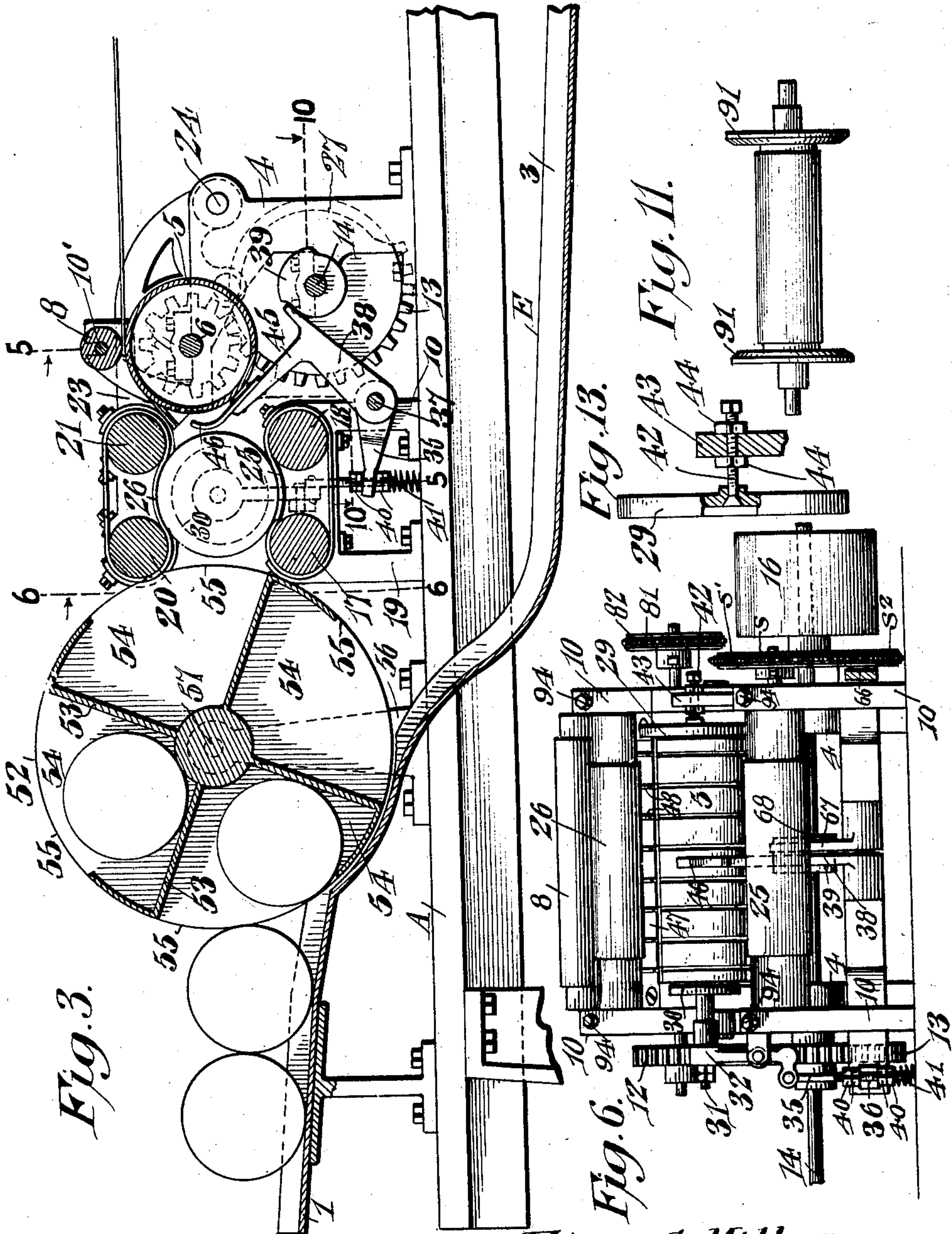
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4 SHEETS—SHEET 2.

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4 SHEETS—SHEET 3.

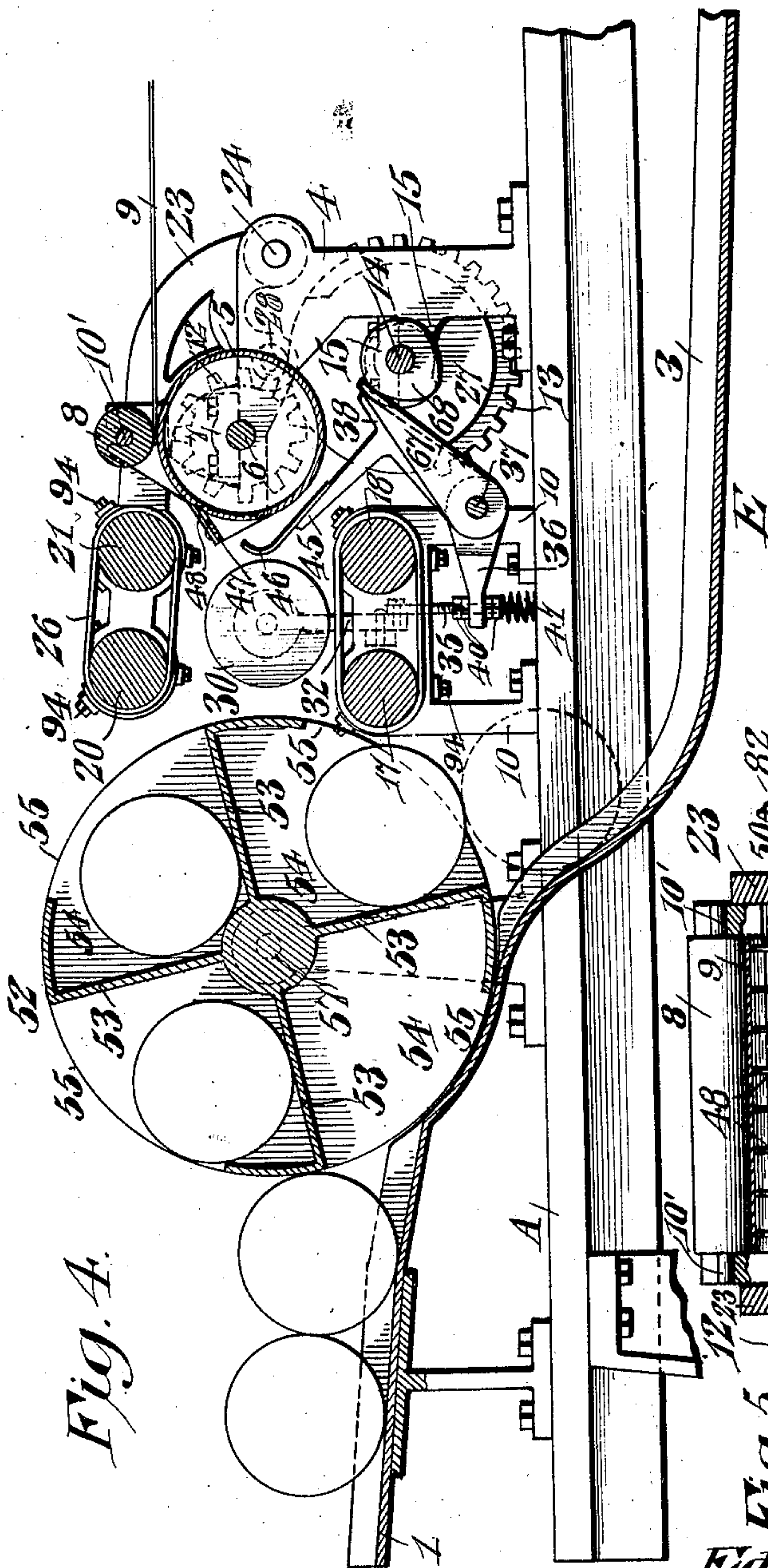


Fig. 4.

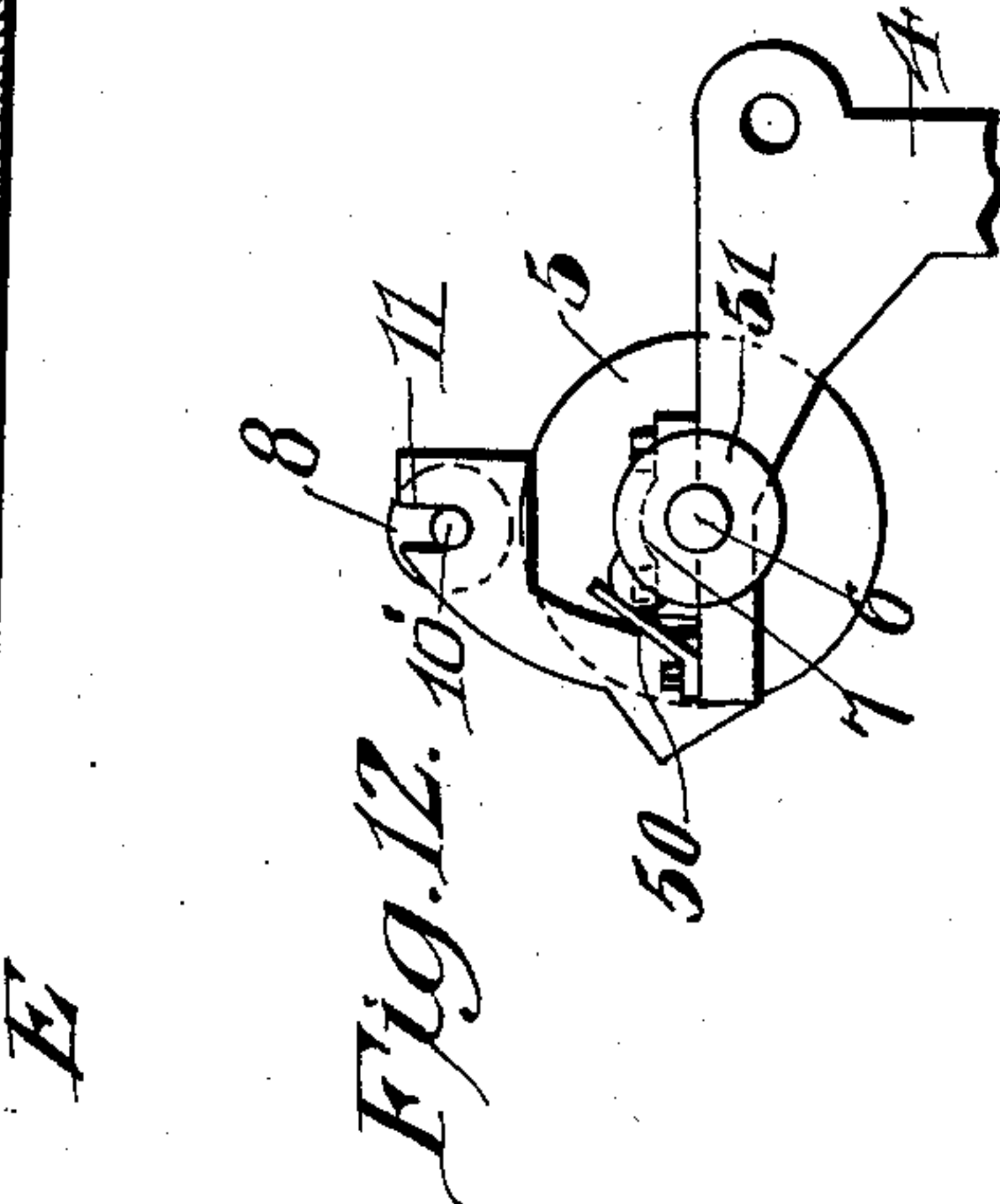


Fig. 12.

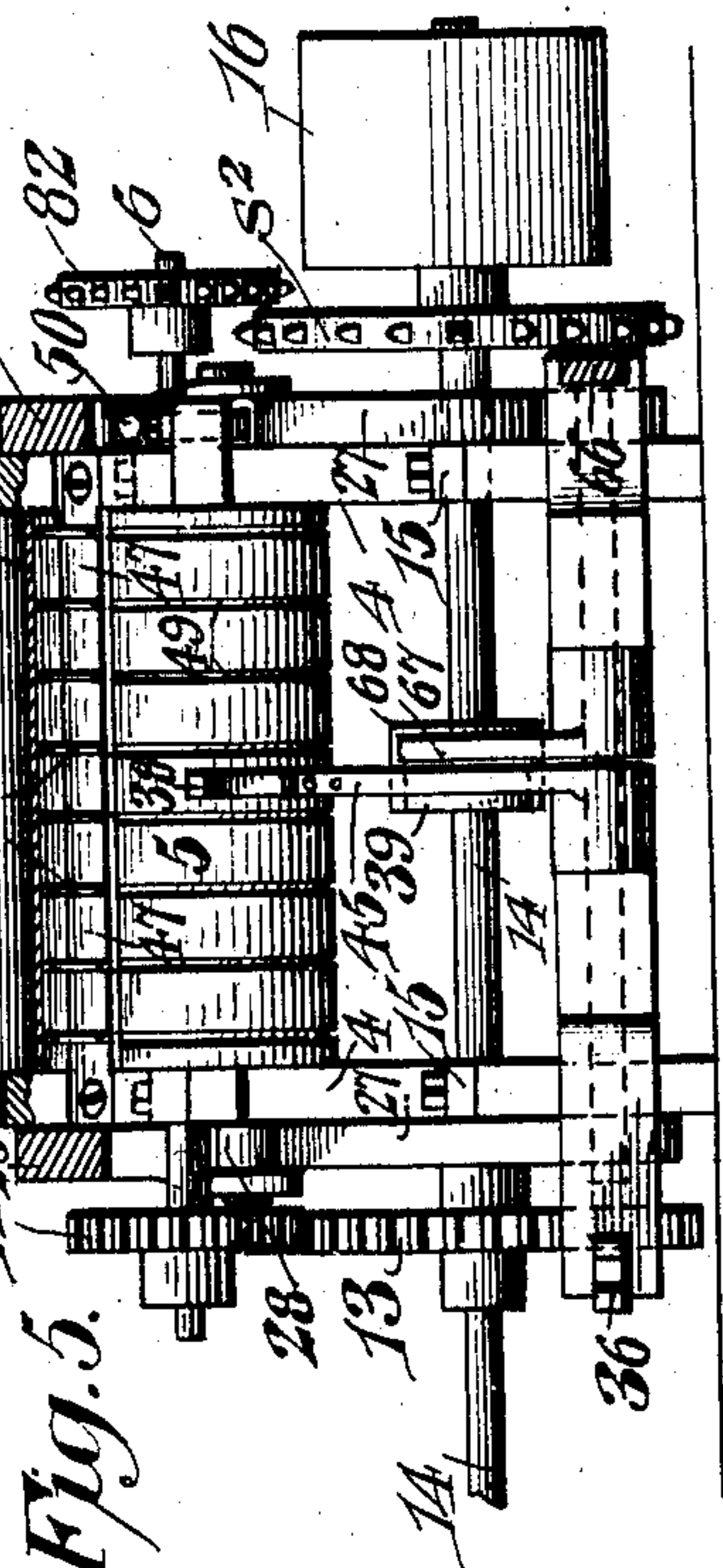


Fig. 5.

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Fig. 8.

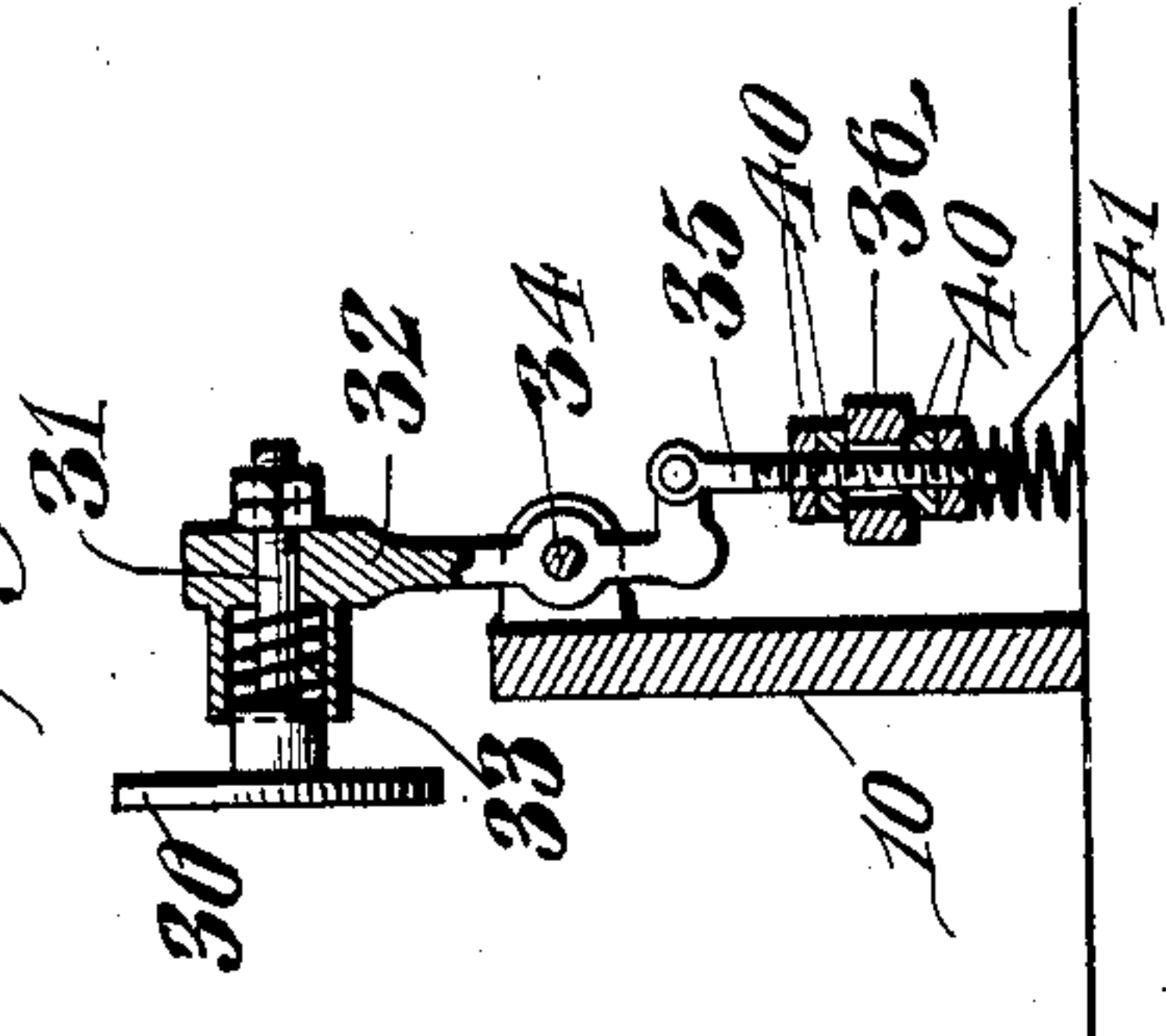


Fig. 9.

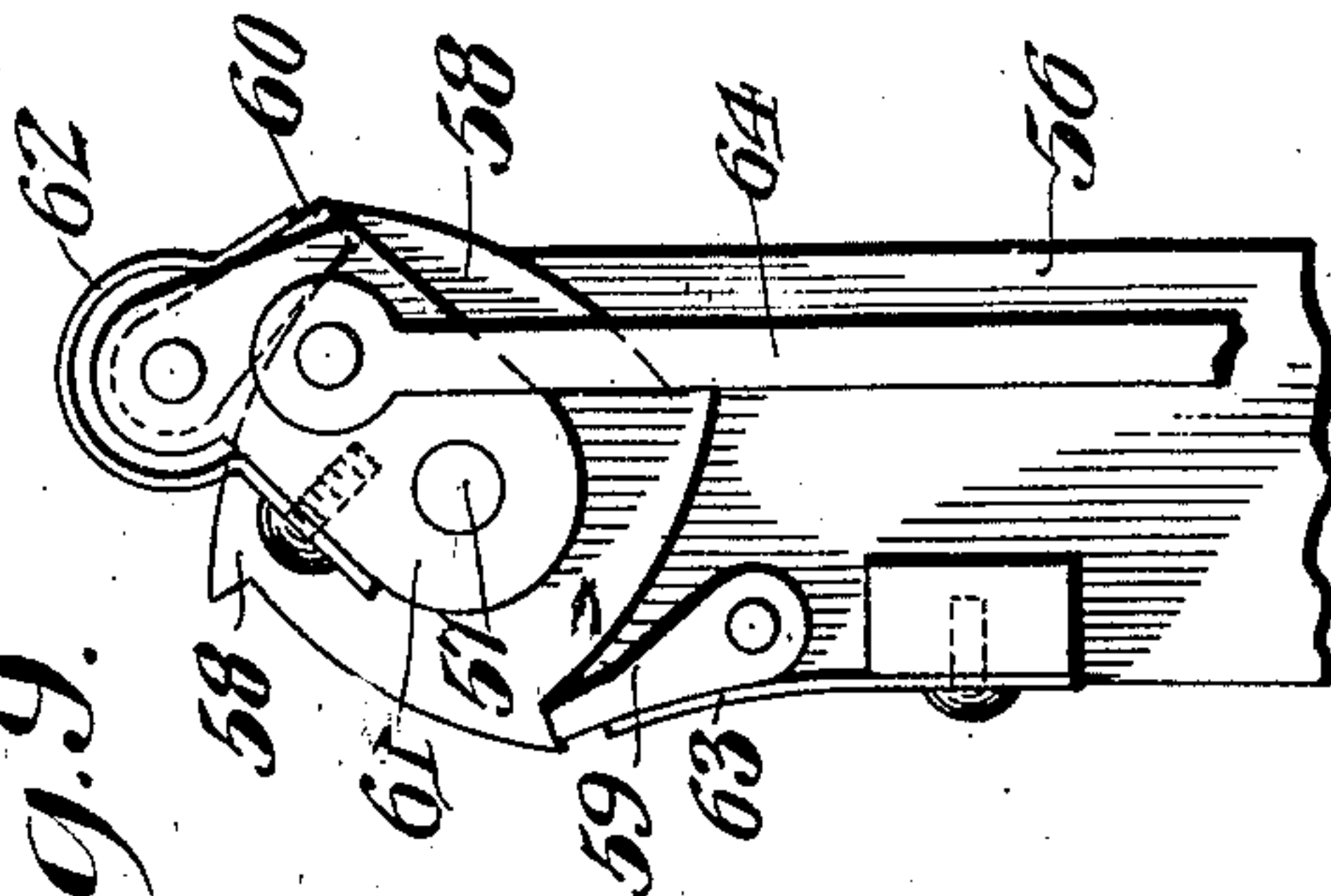


Fig. 14.

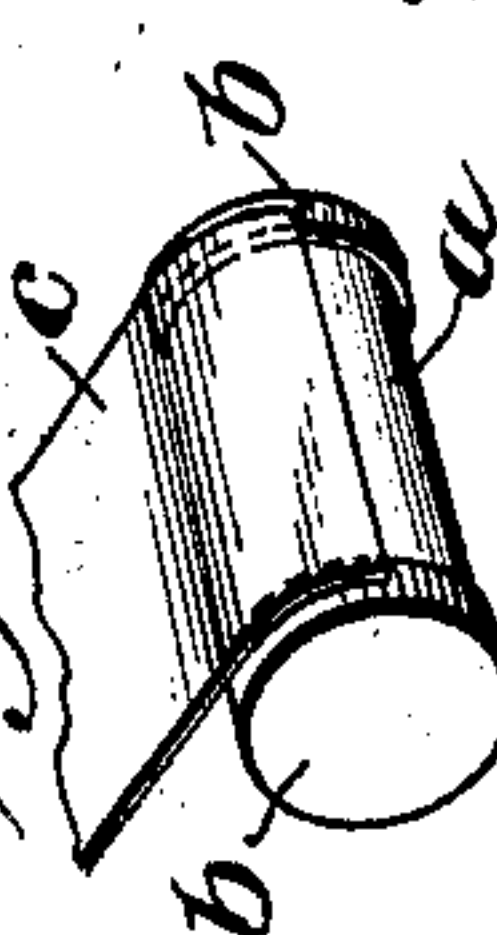


Fig. 15.

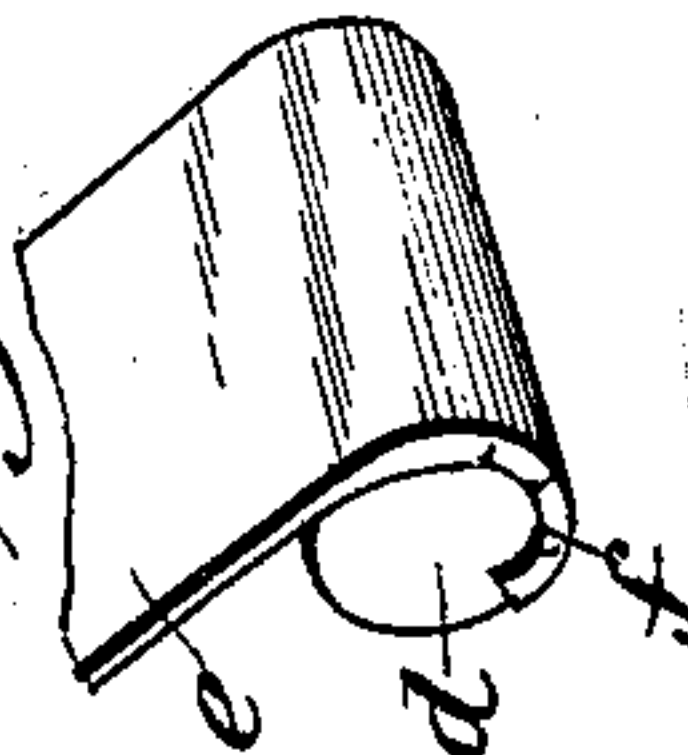


Fig. 7.

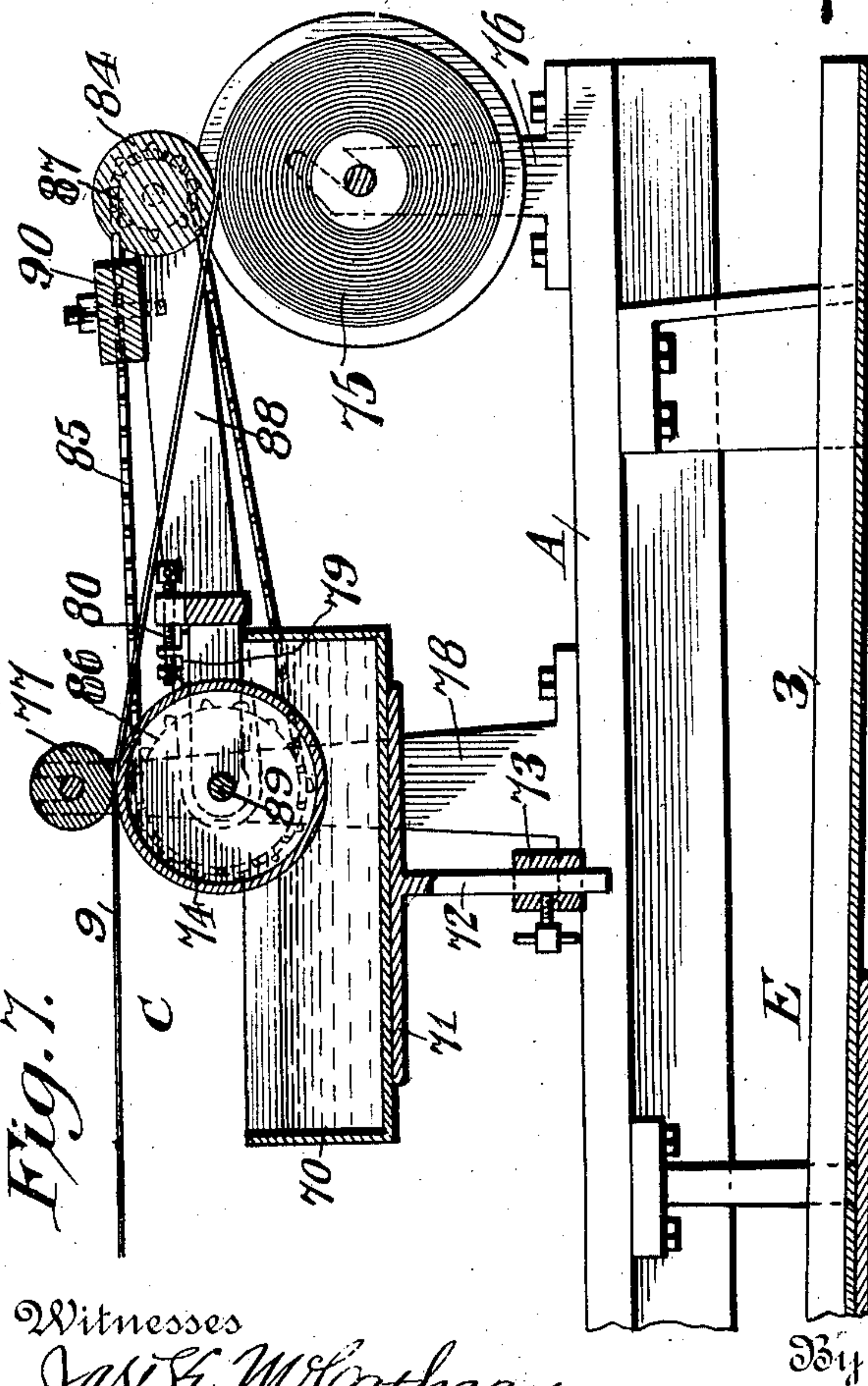
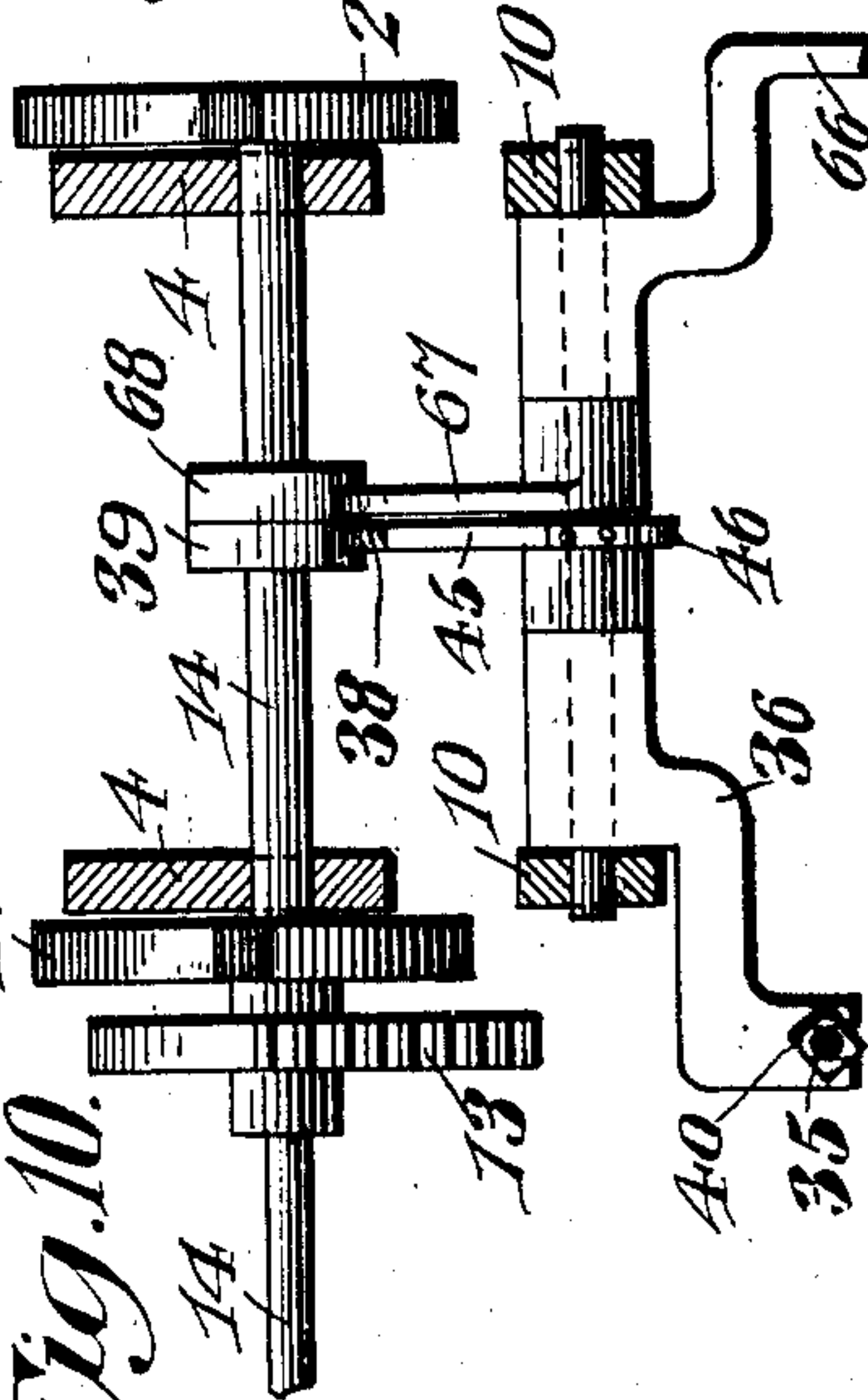


Fig. 10.



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UNITED STATES PATENT OFFICE.

EDGAR STILLMAN MILLER AND BURT H. MILLER, OF ATCHISON, KANSAS, ASSIGNORS
TO INDUSTRIAL ENGINEERING COMPANY, OF ATCHISON, KANSAS, A COPARTNER-
SHIP.

CAN-LABELING MACHINE.

969,715.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed July 7, 1909. Serial No. 506,340.

To all whom it may concern:

Be it known that we, EDGAR S. MILLER and BURT H. MILLER, citizens of the United States, residing at Atchison, in the county of Atchison and State of Kansas, have invented a new and useful Can-Labeling Machine, of which the following is a specification.

This invention relates to a can labeling machine of the type disclosed in application Serial No. 485,081, filed by Edgar S. Miller, March 22, 1909, and the principal objects of the invention are the provision of an improved label-feeding and paste-applying device operating in conjunction with the label-affixing mechanism, and also the provision of an improved means for successively feeding cans to and from the label-affixing mechanism.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a front view of the machine. Fig. 2 is a rear view thereof. Figs. 3 and 4 are enlarged longitudinal sections of the label-applying mechanism and can feeder, showing, respectively, a can in label-receiving position and in discharging position after receiving the label. Figs. 5 and 6 are transverse sectional views on lines 5—5 and 6—6, Fig. 3. Fig. 7 is an enlarged longitudinal section of the label-feeding device and paste-applying means. Fig. 8 is an enlarged detail sectional view of one of the can-head engaging devices for holding the can in label-receiving position. Fig. 9 is the ratchet device for operating the intermittent can-feeding means. Fig. 10 is a horizontal sectional view on line 10—10, Fig. 3, showing the cam-actuated devices operatively connected with the parts shown in Figs. 8 and 9, to engage and disengage the cam wheel and the step by step means. Fig. 11 is a view of a modified form of label-affixing roll. Fig. 12 is a detail sectional view of the brake device for the label feeding drum. Fig. 13 is a detail view of one of the bearings for the label applying rolls. Fig. 14 is a perspective view of a can show-

ing the label partially applied thereto by means of applying rolls shown in Fig. 6. Fig. 15 is a similar view showing a can with the label applied by means of applying rolls such as shown in Fig. 11.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawings, A designates the bed frame of the machine which supports a label-affixing or applying mechanism designated generally by B, a label feeding and pasting mechanism C which feeds the paste-coated labels to the affixing mechanism B, and arranged in coöperative relation with the latter is a can feeding mechanism D which intermittently delivers a can to the mechanism B for receiving a label. Mounted on the frame A is a chute E which has upper and lower sections 1 and 2 slightly inclined so that cans can traverse the chute by gravity, and the chute has upwardly-extending side flanges 3 which engage the ends of the cans or receptacles to be labeled and thereby prevent lateral displacement of the cans or receptacles during transit through the machine. The label-affixing apparatus B comprises means for feeding a label to the can and means for wrapping the label around the can and at the same time pressing the label in place for setting the adhesive.

4 designates the frame of the label affixing apparatus, which is mounted on the table or bed A, and mounted in this frame is a rotary label-feeding drum 5 disposed horizontally and having its shaft 6 mounted in bearings 7 which shaft is disposed vertically below a roll 8 which engages the upper surface of the label 9, while the drum 5 engages the under surface, so that both coöperate to feed the label forwardly, the weight of the roll 8 serving to maintain it in coöperative relation with the drum. The roll has journals 10' at its ends which engage in bearings 11 on the frame 4. On the shaft 6, as shown in Figs. 3 and 5, is a pinion 12 located at the rear side of the frame which meshes with a mutilated gear 13 carried by a driving shaft 14 journaled in bearings 15 on the frame 4 and which shaft is driven in any suitable manner, as for instance, by a belt passing around the live pulley 16, Fig. 5. By reason of the mutilated gear, the drum will be rotated during only a por-

tion of the revolution of the drive shaft, so that the labels will be fed intermittently to provide intervals during which the cans can be fed to and from the label-wrapping and setting device, as will be hereinafter more fully explained.

The label wrapping and setting device comprises a pair of lower horizontal rolls 17 and 18 mounted on a frame 10, and a pair of upper horizontal rolls 20 and 21 which are journaled in a swinging frame or carrier 23 fulcrumed at 24 on the frame 4 so that the upper rolls can be raised and lowered to provide for the admission and ejection of a can between the two sets of rolls. The rolls of each pair are spaced apart horizontally, so that four points of engagement can be obtained on the can to be labeled to thereby produce a superior driving or rotary action on the can. If desired, the rubber or other flexible belts 25 and 26 may be passed around each pair of rolls to serve as elastic label-pressing devices to insure a uniform setting of the label on the can, as the latter is rotated to wrap the label thereon. The swinging carrier 23 is actuated by means of cams 27 mounted on the drive shaft 14 in such position as to engage rollers 28 journaled on the carrier in such position as to rest on the cams at a point above the shaft 14. The carrier will thus be maintained by gravity in position to cause the upper belt 26 to engage the can to be labeled, while the cams 27 operate to raise the carrier for disengaging said belt from the can or, in other words, the combined action of gravity and the cams 27 open and close the label-wrapping device for admitting the unlabeled can and ejecting the can after being labeled.

The cams must be centered in the label-wrapping device so that they can be uniformly labeled, and for this purpose, a rotary disk or wheel 29 is arranged between the two sets of label-wrapping rolls at one end thereof and constitutes an abutment for engaging one head of the can. Opposed to this disk or wheel is a second disk or wheel 30 that forms a centering means which engages the opposite head of the can to hold the latter in central position. The wheel 30, as shown in Fig. 8, is movable laterally so as to receive a can between it and the wheel 29, and after the can thus enters between the wheels, the wheel 30 is moved inwardly into engagement with the can for holding the same against the wheel 29. The wheel 30 is provided with an axle 31 slidably mounted in a lever 32 which is fulcrumed on the frame 10, and a spring 33 serves to press the wheel inwardly to yieldingly engage the latter with one head of the can. The lever 32, which is fulcrumed at 34, has its lower end connected by a link 35 with a lever 36 which is fulcrumed on a horizontal shaft

37 mounted on the frame 10 and is provided with an arm 38 which is engaged by a cam 39 on the main drive shaft 14, Figs. 1, 3, 4 and 10. When this cam engages the lever, the link 35 is pulled downwardly so as to tilt the wheel-carrying lever 32 to move the wheel 30 outwardly to thus disengage the can after the label-wrapping operation is over. The link 35 is in the form of a screw, as shown in Fig. 8, and passes through the lever 36 and is adjustably connected therewith by nuts 40. Under the lever is a spring 41 which yieldingly maintains the wheel 30 in can-engaging position. The other wheel 29 is relatively fixed, although capable of adjustment toward or away from the wheel 30 so as to center cans of different axial dimensions with respect to the label feeding drum. For this purpose, the wheel 29 is mounted on a threaded shaft 42 carried by a standard 43 on the frame 10 and this screw is provided with nuts 44 for clamping it in different positions of adjustment. Both wheels 29 and 30 freely move with the can when gripped between them so as not to retard the rotation thereof. The actuating lever 36 of the can centering device also constitutes an ejector for delivering the can after being labeled. For this purpose, the lever has an upwardly-inclined arm 45, Figs. 3 to 5, inclusive, which is disposed under the label-feeding drum 5 and is equipped with a yielding shoe 46 that is arranged to engage the can, after the wheel 30 of the can-centering means has been released and the carrier 23 of the label-wrapping device raised to force the labeled can horizontally from the lower belt 25 to make way for the next can to be labeled.

The labels 9 are printed in the form of a web or ribbon with perforations between adjacent labels, and before the web or ribbon is conducted to the wrapping device, the under surface of the label is coated with adhesive by the apparatus C. Thereafter, as the label passes over the feed drum 5, it will tend to adhere thereto, and for this purpose, a stripping or peeling comb is employed. This comb consists of a bar 47 mounted on the frame 4, as shown in Figs. 5 and 6, and is equipped with teeth 48 which ride in peripheral grooves 49 in the drum 5, so that the label will be removed from the latter and guided over the upper surfaces of the teeth to the can to be labeled. The label, after passing over the comb, is gripped between the can and upper belt 26, both of which are in motion so that the label will be pulled off the drum 5 and lapped around the can. After a label is paid out in this manner, the drum 5 finally stops rotating when the end of the label is reached, while the can continues its rotation and thus causes a severance of the label at the perforations. The drum 5 is positively prevented from

rotating after the end of the label is reached, by means of a brake device which consists of a spring shoe 50, Figs. 1 and 12, which is adapted to engage a projection on a brake wheel 51 carried by the shaft 6 of the drum 5. It will thus be seen that the drum will be prevented from turning under the tension created by the rotating can during the severance of the partially wrapped label from the ribbon. The can is rotated during the wrapping of the label by frictional contact with a movable part. In the present instance, the lower belt 25 serves as a driver for the can, while the can itself forms a driver for the upper belt. One of the lower rollers, preferably the roller 18, is provided with a sprocket wheel s^1 around which passes a sprocket chain s' which is driven by a large sprocket wheel s^2 arranged on the continuously driven shaft 14 of the label-affixing apparatus.

Arranged at the side of the label-wrapping device opposite from the drum 5 is the can feeder D which consists of a rotary selector 52 in the form of a drum which is divided by radial partitions 53 into pockets 54 for receiving cans successively from the upper section 1 of the can chute for conveying them one at a time to the label-wrapping device. The pockets are provided with openings 55 through which the cans enter and discharge. The drum 52 rotates in a clockwise direction, Figs. 3 and 4, in a step by step manner. On the table A are standards 56 on which the journals 57 of the drum bear and on one of the journals is a ratchet wheel 58 with which coöperates a pair of pawls 59 and 60. The pawl 60 is mounted on an oscillatory arm 61 carried by the journal 57 of the drum, as shown in Figs. 1 and 9, and is pressed by a spring 62 into yielding engagement with the teeth on the ratchet wheel. The pawl 59 serves to prevent reverse movement of the ratchet wheel and is yieldingly held in engagement with the latter by a spring 63. The pawl-carrying arm 61 is connected with a link 64 which extends downwardly therefrom and is connected at 65, Fig. 1, with an operating lever 66 which is fulcrumed on the shaft 37. This lever has an arm 67, Figs. 1, 5 and 10, that is engaged by a cam 68 on the drive shaft 14 so that with each rotation of the shaft, the drum of the can feeder D will be moved one step for supplying a can to the label-wrapping device. A spring 69, Fig. 1, is arranged to return the lever 66 and thus coöperates with the cam 68 to oscillate the lever and thus actuate the ratchet device for the can feeder. In the present instance, a four pocket can feeder is shown and it is arranged in such relation to the chute and label-wrapping device that the cans will be fed continuously to the latter as long as a supply is maintained in the chute 1. When the opening

of each pocket of the drum 52 reaches a point opposite the label-wrapping device and while the carrier 27 is raised and the wheel 30 retracted, a can will feed by gravity out of the adjacent pocket and pass upon the lower belt 25, and immediately thereafter the carrier 23 will drop and the wheel 30 move inwardly to grip the can to begin the label-wrapping operation. After the label has been applied to the can, the latter is ejected from the label-wrapping device into the pocket of the drum from which it was delivered, and as the drum is moved another step, the labeled can will move downwardly and will be finally delivered to the lower section 2 of the can chute to pass through the latter to a suitable receptacle arranged to receive the labeled cans.

Referring now to the paste-applying device C, 70 designates a tank or receptacle for paste which is mounted on a table 71 that has a stem 72 adjustable vertically in a bearing 73 so as to bring the paste into coöperative relation with the paste-applying drum 74 which has its lower portion submerged in the paste. The label ribbon 9 is fed off a roll 75 mounted in bearings 76 at one end of the table A, and coöperating with the drum 74 is a weight in the form of a roll 77 mounted in the standards 78 which support the drum 74. This weight presses the label ribbon against the drum 74 so that the under surface of the ribbon will be coated with paste. To remove excess paste from the drum, a scraper 79 is arranged in coöperative relation thereto and is adjustable by a screw 80 toward and away from the drum, to thereby regulate the amount of paste supplied to the label. The drum 74 is operatively connected with the feeding drum 5 of the label-affixing apparatus and is rotated from the latter by a sprocket chain 81 which passes around sprocket wheels 82 and 83 connected with the said drums, respectively, as shown in Fig. 1. It will thus be seen that no tension is placed on the ribbon at points between the two drums 5 and 74, tending to break the label ribbon at the perforations between adjacent labels.

A device is employed for positively driving the ribbon roll 75 for unwinding the ribbon at the same rate as the feed, so as to thereby prevent a tension on the ribbon at points between the drum 74 and roll which would tend to sever the ribbon at the perforations between the adjacent labels. For this purpose, a driving roller 84 is arranged over the roll 75 and rests thereon to thereby frictionally drive the roll. The roller 84 has the same peripheral speed as the drum 74 and is driven by the latter through a sprocket chain 85 passing over sprocket wheels 86 and 87 on the drum and roller, respectively. This roller is mounted on a swinging frame 88 hinged on the shaft 89

of the paste-applying drum 74, so that the frame and roller and weight 90 on the frame maintain the frictional engagement between the latter and paper roll 75. By this arrangement, the drum 74 and roller 84 are driven with the label-feeding drum 5 and hence have an intermittent movement. As the drum 5 rotates during each step sufficient to feed one label, it is obvious that the roller 84 will produce the same movement, irrespective of the changing diameter of the paper or label roll 75. The stretch of the label ribbon between the roll 75 and label-wrapping device is under practically no tension since it receives a driving impulse at three points, namely, at the drums 5 and 74 and roller 84. In other words, as fast as the ribbon is fed off the roll 75 by the roller 84, it is carried along at the same rate by the coacting drum 74 and roll 77 which, in turn feed the label ribbon forwardly to the coacting drum 5 and roll 8.

In Fig. 14, a can or receptacle is shown with a label partly applied thereto. The can *a* is provided with heads or lids *b* and the label *c* is applied around the circumference of the can and the marginal edges of the label overlap the rims of the lid. Such a can or receptacle can be labeled by means of rollers such as are shown in the various figures of the drawings. When the edges of the label are to be wrapped over the ends of the can, a different set of rollers are employed. Fig. 15 shows a can *d* in which the label *e* has its edges folded over the end of the can, as indicated at *f*. Rolls for accomplishing this purpose are constructed as shown in Fig. 11. In this case, the roll is provided with end flanges 91 which serve to turn the edges of the label laterally over the ends of the can during the process of applying the label thereto. In order to facilitate the removal of the rolls to substitute another set and also for providing adjustment of the rolls, each has its journal 92 mounted in a bearing box 93 that is held in place by adjusting and clamping screws 94, as clearly shown in Figs. 1 and 2. By loosening the screws, the bearing blocks can be removed and the rolls taken out through the slots 94' in the frame 10 and carrier 23 that support the said rolls. In describing the operation of the device, let it be assumed that the can feeding device D has delivered a can to be labeled to the label-affixer B and that the upper set of rolls are lowered to grip the can between the upper and lower belts 26 and 25, and that the wheel or disk 30 of the can-centering device has centered the can with respect to the drum 5.

The parts are now in the position shown in Fig. 3 and the mutilated gear 13 is in the initial stage of meshing with the pinion 12 of the label-feeding drum 5. The drum is thus fed forwardly while at the same time

the can is rotated by the belts. The comb peels the label from the drum 5 and directs it between the upper belt and can, which latter rotates in an anti-clockwise direction. The upper belt compresses the label against the can as the latter revolves. This action continues until the drum 5 has made a complete revolution, which means that the length of one label has been fed by the roll. The mutilated gear disengages the pinion 12 at this point so that the drum will stop while the forward end of the next label is gripped between it and the roll 8; the brake shoe 50, Figs. 1 and 12, coming into play at this time to positively arrest the movement of the drum 5 against its own momentum or the pull which the can exerts through the label. The can continues to rotate while the drum 5 is idle and thereby causes the label, which is partially applied to the can by this time, to be torn from the label ribbon at the line of perforations between it and the adjacent label, and after the can rotates sufficiently to wrap the end of the label thereon, the raised part of the cam 39 will tilt the lever 36 to release the wheel 30 of the can centering device and simultaneously the cams 27 will raise the upper roll carrier 23 to allow the ejecting device 45, when it comes into play, to move the labeled can outwardly from between the upper and lower belt-carrying rolls of the label-affixer. The ejecting device comes into play almost simultaneously with the releasing movement of the wheel 30 and carrier 23. The labeled can is thus forced outwardly into the pocket of the drum 52, from which it was previously discharged, and as the drum revolves through the cam 68, operating the ratchet mechanism for the drum 52, the labeled can is carried to the position shown in Fig. 4 and is allowed to drop into the lower section 2 of the can-conducting chute. The wheel 30 and carrier 23 are maintained in released position as the drum 52 continues to make a quarter turn to bring the next can into position to drop into the label-affixing apparatus and at the same time pick up a can from the upper section of the chute. As soon as the can passes between the belts 25 and 26, the high portions of the cams 27 and 39 will pass out of engagement with the rollers 28 of the carrier 23 and the lever 36, so that the next can will be gripped between the belts and at the same time centered. The feed drum 5 is then again operated by the mutilated gear coming into play and the foregoing operation repeated for labeling the can. During the feeding of the label by the drum 5, the paste-applying apparatus is simultaneously operated, the label being coated with paste by the drum 74 and the reel or label roll 75 being unwound by the roller 84. The drum 5 is of slightly less diameter than the can and the paste-apply-

ing drum so that the drum 5 has a less peripheral speed than the can with the result that it acts to maintain the label under tension between itself and the can so that the label will not wrinkle while being applied to the latter.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while we have described the principle of operation of the invention, together with the apparatus which we now consider to be the best embodiment thereof, we desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is:—

1. In an apparatus of the class described, the combination of an intermittently operated label-feeding device, an article-holding device arranged to receive the label therefrom and apply it to the article to be labeled, an intermittently-operated article-feeding means, and an automatically-actuated ejector separate from the holding device for removing the labeled article from the latter device.

2. In an apparatus of the class described, the combination of an article-holding and label-wrapping device consisting of a pair of approximately horizontal elements spaced apart to receive between them the article to be labeled, an article-feeding device arranged to discharge an article between the elements and to receive the labeled article from the latter, and means disposed at the side of the elements opposite from the article-feeding device for supplying labels to the first-mentioned device.

3. In an apparatus of the class described, the combination of a rotary label-feeding drum, means for intermittently rotating the same, an article-holding and label-wrapping device, means for opening and closing the same for receiving an article while the drum is idle, a mechanism for automatically feeding articles to the device, and ejecting means operated automatically to remove the labeled article from the said device.

4. In an apparatus of the class described, the combination of an article-holding and label-wrapping device consisting of a pair of approximately horizontal elements spaced apart to receive between them the article to be labeled, an article-feeding device arranged to discharge an article between the elements and adapted to remain stationary during the wrapping of the label on the article so as to receive the labeled article from

the elements, means disposed at the side of the elements opposite from the article-feeding device for supplying labels to the first-mentioned device, and means for moving the article-feeding device step by step to successively discharge articles to the first-mentioned device.

5. In an apparatus of the class described, the combination of an intermittently-operated label-feeding mechanism, a device for receiving and wrapping labels on articles successively fed thereto, an article-feeding mechanism arranged in coöperative relation with the device, a common actuating means for the said mechanisms and device, and an automatically-operated ejector mounted and movable independently of said device for removing the labeled article from the latter.

6. In an apparatus of the class described, the combination with a label-feeding mechanism, a label-wrapping device automatically opened and closed for receiving articles to be labeled and consisting of spaced approximately horizontal article-engaging elements, a feed chute, means located at one side of the device for conducting articles successively from the chute to and between the elements of the said device, and means at the side of the device opposite from the article-conducting means for discharging the labeled article from the device at the same side from which the article entered.

7. In an apparatus of the class described, the combination of an intermittently-operated drum for feeding labels successively, a label-wrapping device automatically opened and closed to receive articles to be labeled, a common actuating mechanism for the device and drum, an article-feeding element arranged in coöperative relation with the device and consisting of a rotary article carrier movable step by step and adapted to remain stationary during the wrapping of the label on the article, means operated by the mechanism for moving the element step by step, and means independent of the wrapping device for removing the labeled article from the latter and discharging it into the article-feeding element.

8. In an apparatus of the class described, the combination of an intermittently-operated drum for feeding labels successively, a label-wrapping device automatically opened and closed and including horizontal elements arranged to receive and support articles to be labeled, a common actuating mechanism for the device and drum, an article-feeding element arranged in coöperative relation with the device, means operated by the mechanism for moving the element step by step, and an automatically-operated ejecting device mounted independently of the first-mentioned device for removing the labeled articles from the latter.

9. In an apparatus of the class described,

the combination of a label-wrapping device automatically opened and closed for receiving articles successively and consisting of approximately horizontally disposed article-engaging members spaced apart to receive the article between them, a rotary element having article-carrying pockets and mounted with its axis above the lower member of the said device to permit the articles to move by gravity from the element to a position between the members, a chute for delivering articles to the element, and means for moving the element step by step to bring the pockets successively opposite the wrapping device for delivering the articles thereto.

10. In an apparatus of the class described, the combination of a label-wrapping device automatically opened and closed for receiving articles successively, a rotary element having article-carrying pockets, a chute for delivering articles to the element, means for moving the element step by step to bring the pockets successively opposite the wrapping device for delivering the articles thereto, and an ejector for removing the labeled article from the wrapping device and returning such article to the element to be discharged by gravity therefrom upon reaching a predetermined position.

11. In an apparatus of the class described, the combination of an inclined chute having a feeding and a delivering section, an intermittently-operated article-feeding device disposed between the sections, a label-wrapping mechanism arranged in cooperative relation with the device for receiving an article therefrom to be labeled, and means arranged to return the labeled article from the mechanism to the device for deposit in the delivery section of the chute.

12. In an apparatus of the class described, the combination of a label-wrapping device consisting of elements movable toward and away from each other to receive an article between them, a rotary article-feeding element arranged adjacent the device to permit articles to move by gravity into the latter, means for intermittently moving the element, and means independent of the said device for ejecting the labeled article from the latter when the elements thereof move away from each other.

13. In an apparatus of the class described, the combination of a label-wrapping device arranged to support during the labeling operation the article to be labeled, an element separate from the device for delivering an unlabeled article to and receiving the labeled article from the device, and operating means for the device and element.

14. In an apparatus of the class described, the combination with a label-wrapping device, a rotary article-feeding element arranged to successively feed articles to the

device for labeling the same, means for returning the labeled articles to the element, and a chute arranged under the element to receive the labeled articles therefrom.

15. In an apparatus of the class described, the combination of a label-wrapping device including a pair of horizontally-disposed belts movable with respect to each other for receiving an article horizontally between them, means for delivering unlabeled articles between the belts and receiving the labeled articles therefrom, and a chute for receiving the labeled articles from said means.

16. In an apparatus of the class described, the combination of a label-wrapping device adapted to open and close to receive and eject articles horizontally, an element for feeding articles to the device including a plurality of pockets, and a discharge chute arranged in cooperative relation with the element, the pockets of the element being arranged to discharge articles into the device and chute respectively by gravity.

17. In an apparatus of the class described, the combination of a label-wrapping device adapted to open and close to receive and eject articles horizontally, an element for feeding articles to the device including a plurality of pockets, a discharge chute arranged in cooperative relation with the element, the pockets of the element being arranged to discharge articles into the device and chute respectively by gravity, and means for positively ejecting the labeled articles from the device to the element.

18. In an apparatus of the class described, the combination of a plurality of article-engaging belts relatively movable toward and away from each other for wrapping a label on the article, a device for centering the article with respect to the belts and including rotary members arranged between the belts and relatively movable toward or away from each other transversely of the belts to grip or release the article, and separate means for operating the members and belts in timed relation to grip the article to be labeled.

19. In an apparatus of the class described, the combination of a label-wrapping device automatically opened and closed to receive an article and including separate article engaging belts, members located between the belts adjacent the edges thereof for engaging the ends of the article to be labeled relatively movable toward or away from each other, and means for simultaneously engaging the article by the members and closing the said wrapping device.

20. In an apparatus of the class described, the combination of spaced belts arranged to receive an article between them, means for feeding a label to the article, an adjustable

element serving as an abutment for one end of the article, a movable element arranged to grip the other end of the article, and means for automatically releasing the second element when the article is to be removed.

21. In an apparatus of the class described, the combination of a label-wrapping device consisting of spaced members adapted to be moved apart to receive an article to be labeled, oppositely-disposed rotary elements arranged between the spaced members to engage the ends of the article, and means for yieldingly urging one of the elements against the end of the article and the article against the other element.

22. In an apparatus of the class described, the combination of a label-applying device consisting of spaced members adapted to be moved apart to receive an article to be labeled, an adjustable abutment arranged between the members to engage one end of the article, a movably mounted abutment arranged between the members to engage the other end of the article, and means for yieldingly urging one of the abutments toward the article.

23. In an apparatus of the class described, the combination of a label-applying device arranged to successively receive articles to be labeled, means for centering the article in the device, said means including oppositely-disposed elements for engaging the ends of the article, a lever forming the sole supporting means for one of the elements for engaging the same with or disengaging it from the article, and means for automatically operating the lever.

24. In an apparatus of the class described, the combination of horizontally disposed sets of upper and lower rolls, belts passing around the rolls for applying a label to an article held between the belts, means for engaging the belts with or disengaging them from the article, and rotary disks disposed between the belts to engage the ends of the article and prevent movement thereof longitudinally of the belts.

25. In an apparatus of the class described, the combination of a label-applying device, means for opening and closing the same to receive articles to be labeled, and a device operated separately from the first device for ejecting a labeled article from the latter after the latter is opened.

26. In an apparatus of the class described, the combination of a label-applying device, means for opening and closing the same to receive articles to be labeled, a device separate from the first device for ejecting a labeled article from the latter after the latter is opened, and an article feeding element from which articles deliver to the device by gravity.

27. In an apparatus of the class described,

the combination of a label-feeding drum, means for intermittently rotating the same, a label-applying device, means for opening and closing the device when the drum is idle to receive an article, means for centering the article in the device and operating in timed relation with the latter, and means independent of and operated in timed relation to the said device for ejecting the labeled article from the latter when the latter opens.

28. In an apparatus of the class described, the combination of an intermittently-operated label-feeding drum, a drive shaft geared to said drum, a label-wrapping device operated from the drive shaft, means for opening and closing the label-wrapping device to receive an article to be labeled while the drum is idle, and a centering device operated by the shaft for positioning the article in the device.

29. In an apparatus of the class described, the combination of an intermittently-operated drum, a drive shaft connected therewith, a label-wrapping device operated from the shaft, means for opening and closing the device to receive an article to be labeled while the drum is idle, a centering device operated by the shaft for positioning the article in the device, and means operated by the shaft for ejecting the labeled articles from the wrapping device.

30. In an apparatus of the class described, the combination of a rotary label-feeding drum, a drive shaft, a mutilated gearing between the shaft and drum for moving the latter intermittently, a label-wrapping device disposed in cooperative relation with the drum, means for successively feeding articles to the device, operating connections between the means and shaft, and operating means between the shaft and device for opening and closing the latter to receive an article while the drum is idle.

31. In an apparatus of the class described, the combination of a rotary label-feeding drum, a drive shaft, a mutilated gearing between the shaft and drum for moving the latter intermittently, a label-wrapping device disposed in cooperative relation with the drum, means for successively feeding articles to the device, operating connections between the means and shaft, operating means between the shaft and device for opening and closing the latter to receive an article while the drum is idle, and automatically operated means for centering an article in the device.

32. In an apparatus of the class described, the combination of a rotary label-feeding drum, a drive shaft, a mutilated gearing between the shaft and drum for moving the latter intermittently, a label-wrapping device disposed in cooperative relation with the drum, means for successively feeding

articles to the device, operating connections between the means and shaft, operating means between the shaft and device for opening and closing the latter to receive an article while the drum is idle, automatically operated means for centering an article in the device, and automatically operated means for ejecting the labeled article from the device.

33. In an apparatus of the class described, the combination of a label-wrapping device, means for centering an article therein, means separate from and operated independently of the device for ejecting the labeled article from the latter, and a common actuating mechanism for the said means.

34. In an apparatus of the class described, the combination of a label-wrapping device, means for centering an article therein, means for ejecting the labeled article from the device, a movable element for operating both means simultaneously, and a cam intermittently actuating the element.

35. In an apparatus of the class described, the combination of a pair of approximately horizontal belts spaced apart to engage at opposite points and rotate the article to be labeled, means disposed at one side of the belts for supplying the unlabeled article to and receiving the labeled articles from the belts, means at the opposite side of the belts for feeding labels between the article and one of the belts, and means disposed at the same side of the belts as the label-feeding means for ejecting the labeled articles from the belts.

36. In an apparatus of the class described, the combination of a pair of article-engaging belts movable toward and away from each other for receiving between them the article to be labeled and coaxing to rotate the article, a rotary article-feeding device including a pocket from which the article moves by gravity to the belts, a chute for successively delivering articles to the said pocket, a chute for receiving the labeled articles from the pocket, means for rotating the article-feeding device step by step and holding the same stationary during the wrapping of the label on the article by the belts, and means for returning the labeled article to the said pocket to discharge into the second chute as the article-feeding device rotates.

37. In an apparatus of the class described, the combination of a pair of coaxing belts for rotating the article and applying thereto a label, a label ribbon feeding drum rotating at a less speed than the article to produce sufficient tension from the label to prevent wrinkling thereof on the article, and means for arresting movement of the drum while the belts continue to rotate the article for producing a sufficiently greater tension on

the label to sever the partially-applied label from the label ribbon.

38. In an apparatus of the class described, the combination of a label-wrapping device including means for rotating the article to be labeled while applying the label thereto, a feeding drum, a second drum cooperating with the first for conducting a label ribbon to the device and for applying paste to the ribbon, the feeding drum being located between the wrapping device and second drum, means for rotating the first drum at a less speed than the article for producing a tension on the label during the wrapping thereof, and means acting on the drum for increasing the tension on the ribbon for severing the partially wrapped label from the latter after the feed drum has finished feeding a label.

39. In an apparatus of the class described, the combination of a label-wrapping device including means for rotating the article to be labeled while applying the label thereto, a feeding drum, a second drum cooperating with the first for conducting a label ribbon to the device, means for rotating the first drum at a less speed than the article for producing a tension on the label during the wrapping thereof, and a brake for arresting the rotation of the first drum prior to the completion of the wrapping operation to cause the partially wrapped label to be automatically severed from the ribbon.

40. In an apparatus of the class described, the combination with a label-wrapping device, a pair of spaced drums, a paste-applying means associated with one of the drums, means for intermittently driving the drums, means cooperating with the drums for feeding a label ribbon to the device, and a brake for stopping the drums to cause the end label to be severed from the ribbon by the tension of the said device.

41. In an apparatus of the class described, the combination of a label-wrapping device, a label ribbon roll, a ribbon feeding drum disposed between the roll and device and adjacent the latter, a paste-applying drum disposed between the feeding drum and roll, means for rotating the drums, an element pivoted on an axis coincident with the axis of the paste-applying drum, and an actuating device on the element and held in engagement with the roll by the weight of the element and attached parts for rotating the roll.

42. In an apparatus of the class described, the combination of a label-wrapping device, a label ribbon roll, a feeding drum having an intermittent movement and disposed between the roll and said device, a paste-applying drum driven from the feeding drum and located between the latter and roll, a device driven from the paste-applying drum for

rotating the roll, and a brake arranged to interrupt the rotation of the feeding drum before a label is completely wrapped by the first-mentioned device on an article for severing the label from the ribbon and for arresting the motion of the paste-applying drum and roll-actuating device.

In testimony, that we claim the foregoing

as our own, we have hereto affixed our signatures in the presence of two witnesses.

EDGAR STILLMAN MILLER.
BURT H. MILLER.

Witnesses:

JOSEPH LOUFER,
F. M. TAYLOR.