

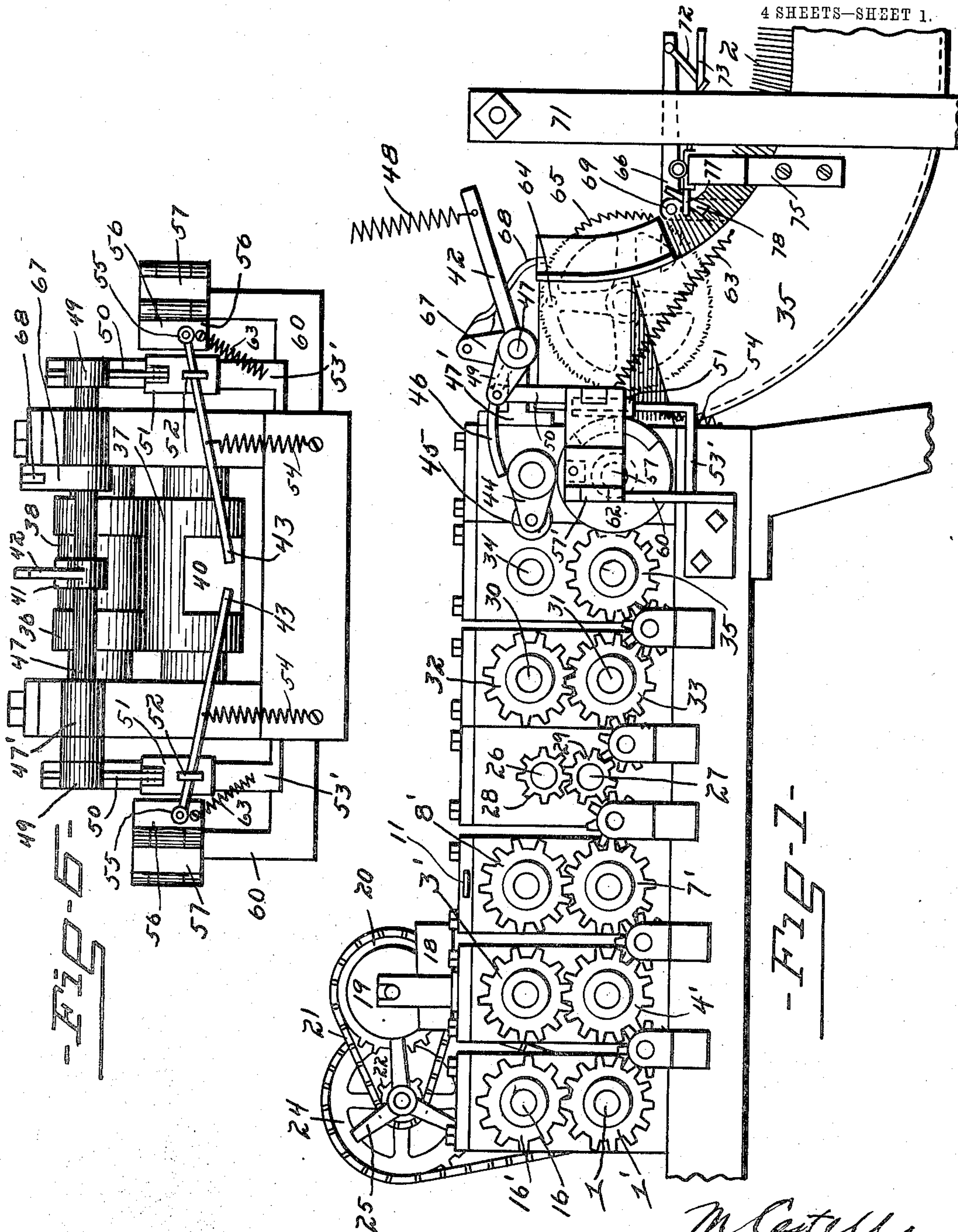
No. 850,467.

PATENTED APR. 16, 1907.

M. COSTELLO.
BOTTLE WRAPPER MACHINE.

APPLICATION FILED JUNE 8, 1906.

4 SHEETS—SHEET 1.



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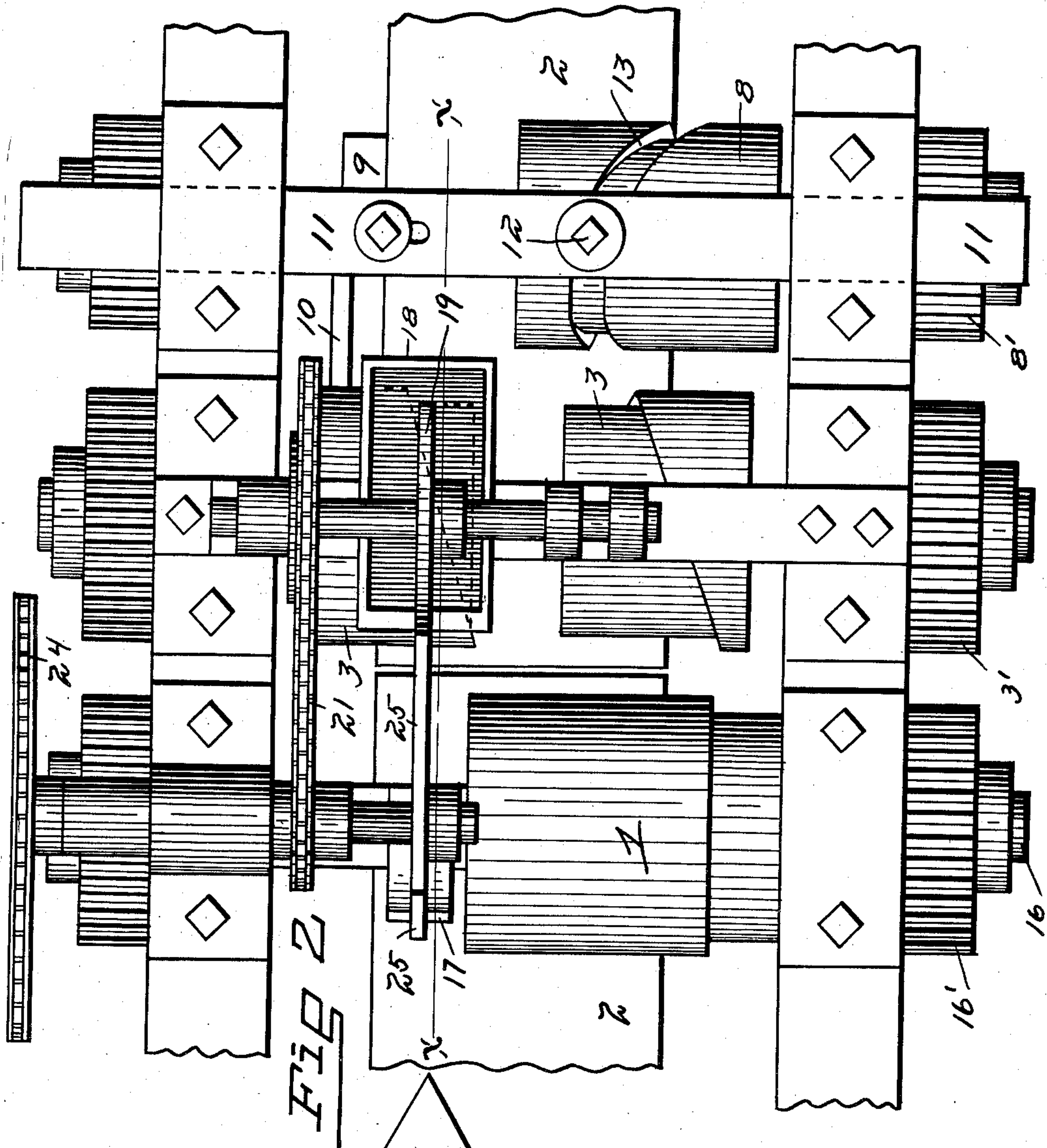


FIG 2

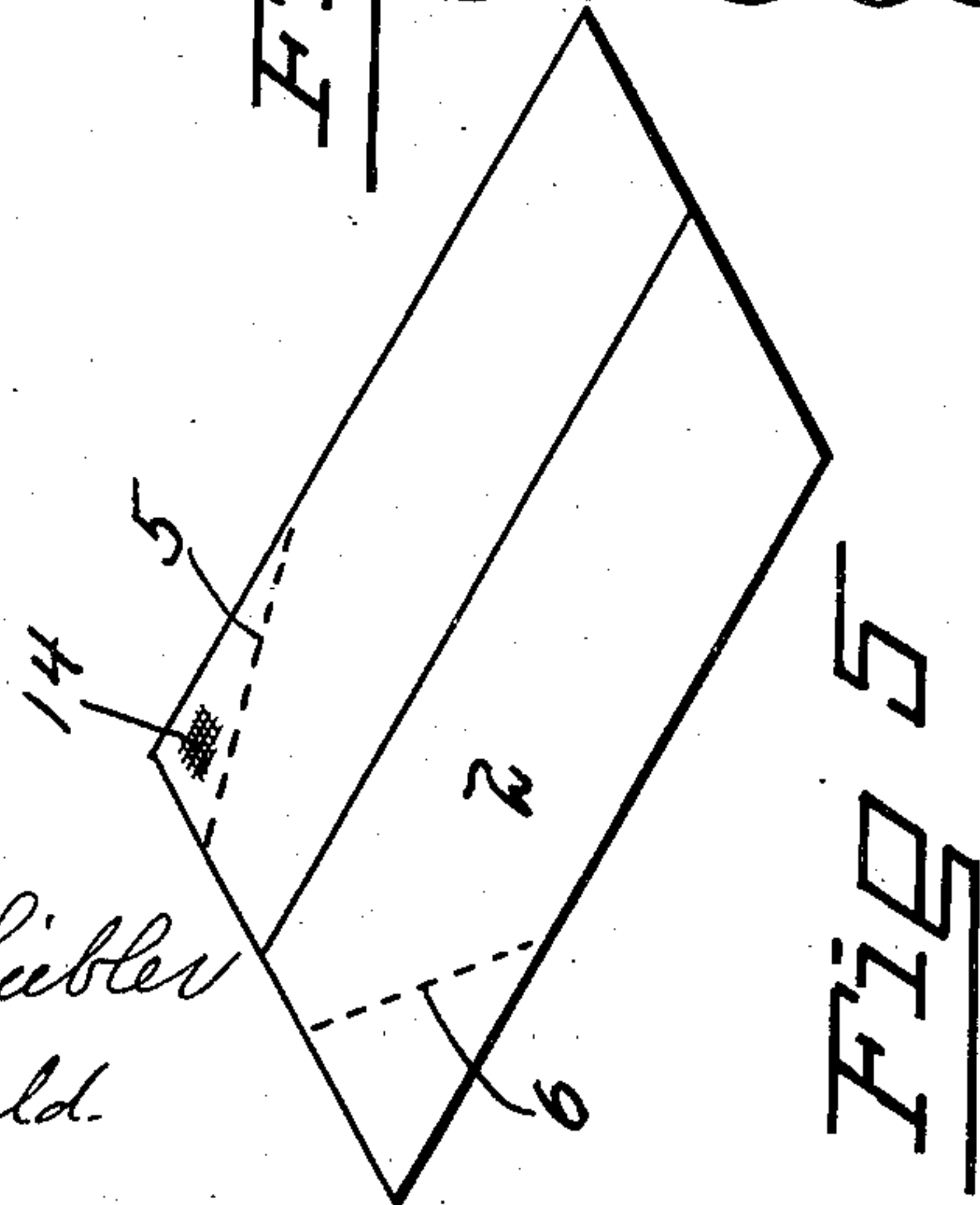


FIG 5

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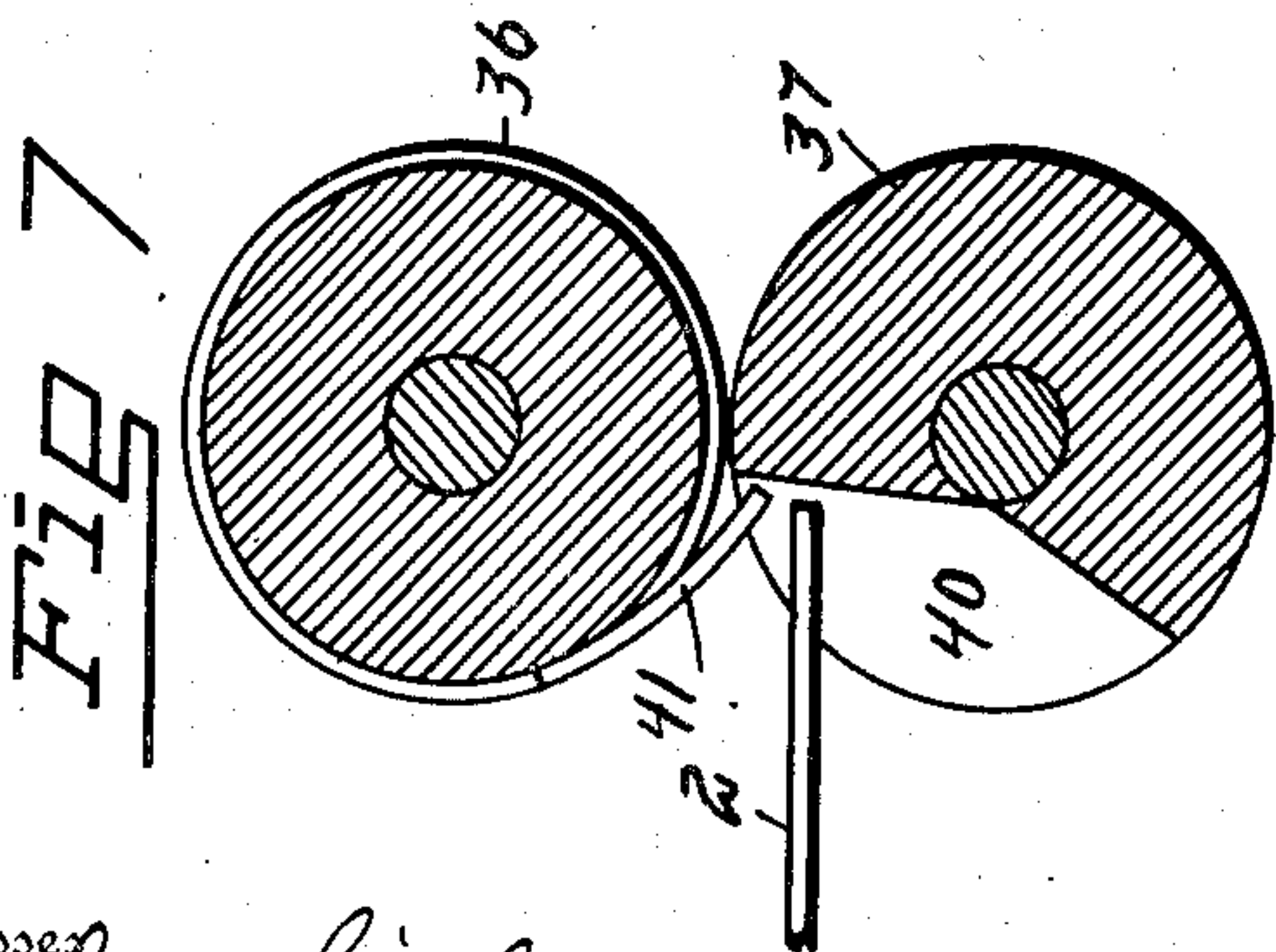
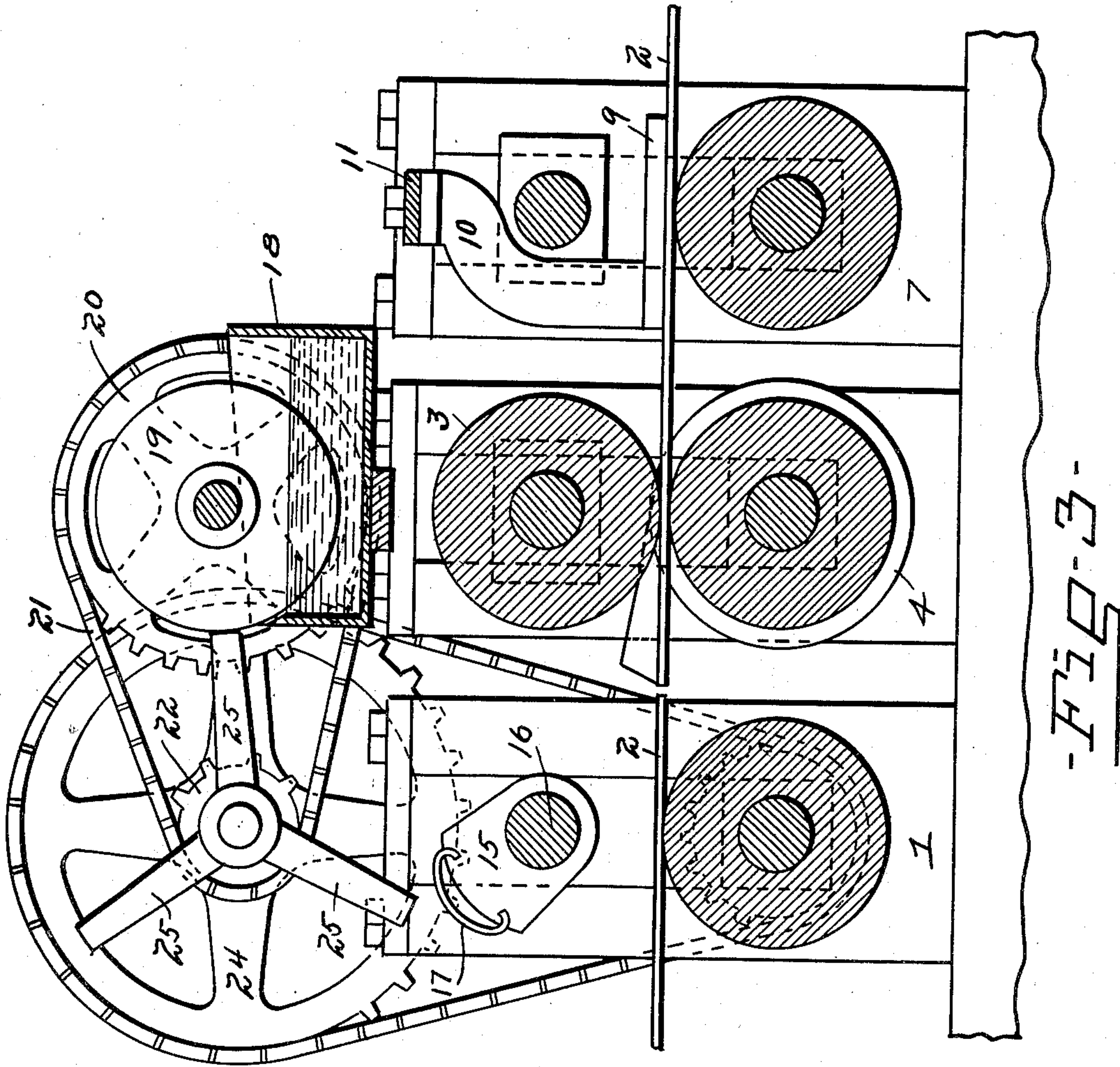
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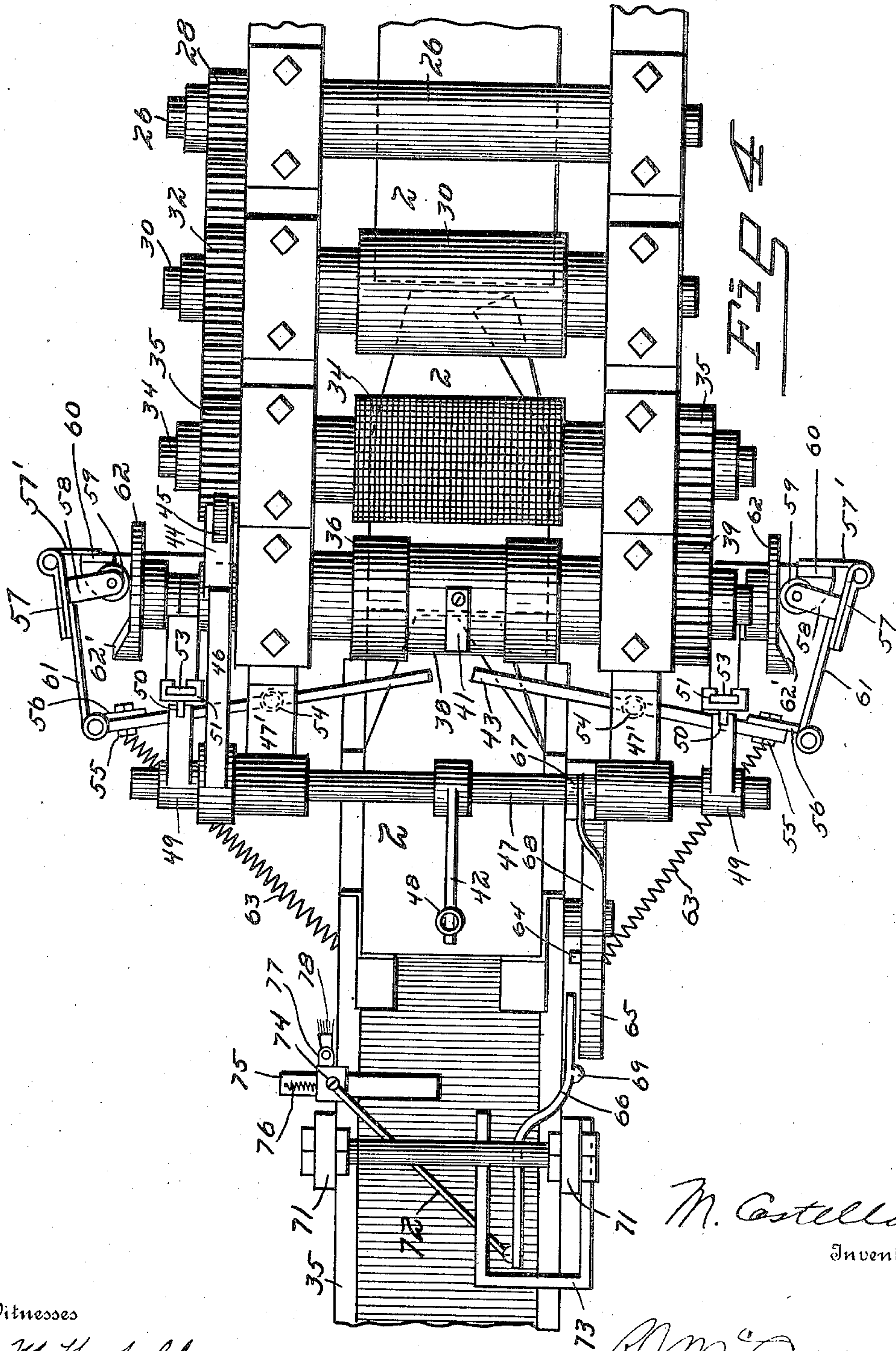
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

MAURICE COSTELLO, OF DAYTON, OHIO.

BOTTLE-WRAPPER MACHINE.

No. 850,467.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed June 8, 1906. Serial No. 320,819.

To all whom it may concern:

Be it known that I, MAURICE COSTELLO, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Bottle-Wrapper Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in bottle-wrapper machines of the type shown and described in United States Letters Patent No. 585,748, granted to H. S. Gordon July 6, 1897.

The improvements relate to means for applying adhesive substance to the wrapper on the upper side and adjacent to one corner, to means for creasing said corner after the application of the glue or adhesive substance, to means for folding said corner upon the crease-line and adhering it to the wrapper, to means for discharging the finished wrapper into a receptacle, and to means for counting the wrappers discharged into the receptacle. The latter means comprises devices for marking one of the wrappers after a given number have been deposited into the receptacle—say a hundred lot—so that the wrappers may be removed from the receptacle and packed for shipment without the necessity of counting them in removing them from the receptacle.

In the drawings annexed hereto, Figure 1 is a side elevation of my improved bottle-wrapper machine. Fig. 2 is a top plan view of the front of the machine. Fig. 3 is a sectional view on the line *x x* of Fig. 2. Fig. 4 is a top plan view of the rearward end of the machine. Fig. 5 is a view of the wrapper after the same has been creased and glued and before the operation of bending the corner. Fig. 6 is an end view of the delivery end with the receptacle and counting device removed. Fig. 7 is a detail sectional view through the delivery-rollers.

In a detail description of the invention similar reference characters indicate corresponding parts.

1 designates the initial supporting-roller, upon which the wrappers 2 are placed in

feeding them into the receiving end of the machine.

3 and 4 are male and female rollers, which are connected by gears 3' and 4'. These rollers score or crease the opposite corners of the wrappers on the diagonal lines 5 and 6, as shown in Fig. 5, and upon which lines said corners are bent in opposite directions after being glued so as to secure them to the body of the wrappers. The corner of the wrapper bent upon the score-lines 6 lies upon the under side of the wrapper as it passes through the machine, and this corner is scored, glued, and bent over against the under side of the wrapper in the same manner as shown and described in the patent hereinbefore referred to.

The present improvements relate more especially to the gluing and bending of the corner of the wrapper on the score-line 5 against the upper side of the wrapper.

7 is a lower bending-roller, which is geared to an upper cam-roller 8 through gears 7' and 8'. This roller 7 coöperates with a pressure-plate 9 in bending the upper corner of the wrapper upon the score-line 5 after said corner has been glued in a manner hereinafter described. The pressure-plate 9 is rigidly supported upon a depending arm 10, connected to a transverse bar 11, which is slidably mounted parallel with the cam-roller 8 and is given horizontal reciprocating movement by means of a pin 12, which projects into a peripheral cam-groove 13 in said roller 8.

Glue is applied at the point 14, as shown in Fig. 5, before the wrapper is given its crease or score-line 5.

15 designates a wiper on shaft 16 above the initial supporting-roller 1 and geared to said supporting-roller through spur-wheels 1' and 16'. This wiper carries a paster 17, which is of a resilient nature and when in its lower position touches the corner of the wrapper and applies the necessary quantity of glue thereto. The glue is obtained from a receptacle 18, mounted above the scoring-rollers 3 and 4 and in which rotates a disk 19, said disk being submerged at the bottom in the glue. On the same shaft with the disk 19 is a sprocket-wheel 20, rotating on the outer side of the glue-receptacle 18 and connects with a small intermediate driving-sprocket 22 by a chain 21. Upon the shaft 23 of the sprocket 22 there is a main driving-wheel 24, which is connected with a sprocket on the shaft of the initial supporting-roller 1. The

necessary power for operating the machine is introduced at the shaft of roller 1. Upon the shaft 23, in alinement with the gluing-disk 19, is a series of wiper-arms 25, uniformly spaced and united to a common hub. These wiper-arms rotate in contact with the gluing-disk 19 and with the paster 17, and thus transfer the glue from the disk 19 to the paster 17 at the proper time.

It will thus far be seen that the first operation is to apply the glue at the point 14 on the wrapper, after which said wrapper advances to the scoring-rollers 3 and 4 and thence to the bending-roller 7 and plate 9 to adhere the corner of the wrapper so pasted and scored to the upper side of the wrapper. The wrapper is advanced rearwardly from the bending devices between rollers 26 and 27, which are connected by gears 28 and 29, and thence through rollers 30 and 31, which are connected by gears 32 and 33. The corrugating-rollers 34 then take the wrapper and corrugate the entire surface thereof. These corrugating-rollers 34 are connected by gears 35, only one of which is shown in Fig. 1 of the drawings. These corrugating-rollers, it will be observed, are located near the delivery end of the machine, and from these rollers it is necessary to conduct the wrappers in a downward course into the receiver 35. Immediately in the rear of said corrugating-rollers are two advancing-rollers 36 and 37, between which the wrapper is passed. The upper one of these rollers has a substantial peripheral groove 38 in order that pressure will not be applied to the body of the wrapper as it passes through these rollers. Such pressure would tend, obviously, to remove the corrugations from the wrapper previously applied by the corrugating-rollers. The lower roller 37 and the upper roller 36 are connected by gears 39, and said lower roller 37 has a peripheral recess 40, into which the advancing end of the wrapper is pressed at the proper time by a resilient arm 41, secured to the upper roller 36 within the peripheral groove 38. The wrapper is thus given its initial downward plane of movement, from which position it is directed into the receiver 35 by the following devices: Upon an end of the shaft of the upper roller 36 there is a wiper-arm 44 rigidly connected and carrying a roller 45. In the rotating movements of said arm 44 the roller 45 engages an arm 46, made fast to rock-shaft 47, the point of said engagement being on the lower side of the arm 46. The shaft 47 is mounted in bearings 47' on each side of the frame and is controlled by an arm 42 and spring 48 to hold the arm 46 in the path of the wiper-roller 45. Arms 43 have an inwardly, downwardly, and outwardly sweeping movement to direct the ends of the wrappers farther down into the receiver 35 after the arm 41 has initially turned down the end of the wrapper into the

recess 40 in the lower roller 37. The said arms 43 are loosely supported in staples 52, attached to the outer face of slides 51. The slides 51 are mounted upon guides 53', which are a part of stationary brackets 53, secured to opposite sides of the framework. On each end of the rock-shaft 47 there is a crank-arm 49, the outer end of which is bifurcated to straddle the link 50, to which it has a pivotal connection. Said link 50 is connected to the slide 51 on each side of the machine. The middle portions of the arms 43 are connected with springs 54, which exert a downward pull upon these arms, and the outer ends of said arms are pivoted at 55 to plates 56. The plates 56 are connected to one side 57 of a hinge, which supports an arm 58, carrying at its inner end a roller 59. The other end—to wit, 57'—of the hinge is rigidly attached to a supporting-arm 60.

As thus far described it will be seen that the rock-shaft 47 imparts, through the sliding members 51, an up-and-down movement to the arms 43, which movement is enabled by the pivots 55, which connect said arms with plates 56. These plates 56 extend from the plates 61, which, as before stated, are connected to the hinges 57 and 57'. The outward and inward movement of the arms 43 takes place simultaneously with the movements imparted from the rock-shafts 47, as follows: 62 designate cams, which are fast upon the journals of the lower roller 37. These cams are engaged at their outer faces constantly by the rollers 59 through the influence of springs 63, which are attached to the outer ends of the arms 43 and to suitable points of the receiver 35. As the cams 62 are shown in Fig. 4 the arms 43 occupy their innermost positions in front of the lower roller 37. When the highest point 62' of said cams engage the rollers 59, they are caused to move the arms 43 outward, the hinged members 57 opening and carrying with them the plates 56 and the arms 43. Thus the downwardly, outwardly, upwardly, and inwardly sweeping movement is imparted to the arms 43 to press down the ends of the wrappers lying rearwardly into the receiver 35.

I will next describe the means for counting the wrappers as they enter the receiver 35 in the manner hereinbefore indicated.

On one side of the receiver there is a ratchet-wheel 65 mounted, said ratchet-wheel having a number of teeth corresponding to the number of wrappers it is desired to count and mark. In the present instance the said wheel has sixty-five ratchet-teeth, and on one side thereof there is a pin 64, which travels around with the wheel and trips a lever 66, the inner end of which lies in the path of the pin. The wheel 65 is actuated step by step from the rock-shaft 47 through a crank-arm 67, projected from said rock-shaft, and a pawl 68, carried upon said

crank 67, said pawl dropping normally into the teeth of the ratchet-wheel. The lever 66 is fulcrumed at 69 and projects under the transverse bar 70, which connects the two standards 71, between which the receiver 35 is located. Extending from the outer end of the lever 66 is a flexible connection 72, which extends across the receiver 35. This flexible connection 72 and the lever 66 are maintained in position by a yoke or frame 73, which is attached to one of the side standards 71 and extends over the receiver to a desirable extent. The flexible connection 72 is connected to a carriage 74, which is slidingly mounted upon a bar 75 and is maintained in a normal position by a spring 76, which is attached to said carriage and to the bar 75. The carriage 74 carries a brush-holder 77, which carries a brush 78, adapted to be moved along the bar 75 to make contact with the side of the wrapper and to apply ink at the desired time, or upon the entrance of each hundredth wrapper as fed into the machine. As before stated, the ratchet-wheel 65 makes a complete revolution when the one-hundredth wrapper is fed into the receiver. At this point the pin 64 trips the lever 66 and the carriage 74 is moved inwardly through the flexible connection 72 to bring the brush 78 in contact with the side of the hundredth wrapper. By this means of counting and marking the wrappers in hundred lots they may be taken from the receiver in such lots and packed into the shipping-cases without further delay or without counting the same by hand, as heretofore.

I claim—

1. In a bottle-wrapper machine, an initial supporting-roller to guide the wrapper into the machine and to support said wrapper while receiving adhesive substance to one corner of the wrapper, a wiper-arm mounted above said roller carrying a paster adapted to engage a corner of the wrapper and to apply adhesive substance thereto, a glue-receptacle, a rotating disk partially submerged in said receptacle, and a series of wiper-arms interposed between said disk and the paster to transfer the adhesive substance from the disk to the paster.

2. In a bottle-wrapper machine, a roller for initially conducting the wrapper into the machine, a rotating paster mounted above said roller, a disk rotating in a paste-receptacle, and means interposed between said disk and said rotating paster for intermittently transferring adhesive substance from the disk to the paster.

3. In a bottle-wrapper machine, scoring-rollers, an initial feeding-roller to feed the wrapper to said scoring-rollers and to support the wrappers while being pasted at one corner, a paster rotating above said initial roller, a glue-receptacle, a glue-transferring device partially submerged in said receptacle, and

means interposed between said glue-transferring device and said rotating paster by which adhesive substance is intermittently conveyed to said paster.

4. In a bottle-wrapper machine, an initial feeding-roller to support the wrappers while being supplied at one end with adhesive substance, a rotating paster above said roller and adapted to apply adhesive substance to one end of the wrapper while supported upon said roller, a receptacle to contain said adhesive substance, a device rotating in said adhesive substance, a device interposed between the device within the adhesive-receptacle, and the paster to intermittently apply the adhesive substance to said paster, scoring-rollers to score the wrapper on a line between the portion receiving the adhesive substance and the body of the wrapper, and bending devices to unite the portion of the wrapper so pasted and scored.

5. In a bottle-wrapper machine, an initial feeding-roller to feed the wrappers and support them while each is being supplied at one corner with adhesive substance, a rotating paster above said roller and applying adhesive substance to one corner of the wrapper while supported upon said roller, a receptacle containing said adhesive substance, a member rotating in said adhesive substance, a device interposed between said member and the paster to intermittently supply the adhesive substance to the paster, scoring-rollers to score the wrappers on lines between the corner receiving the adhesive substance and the body of the wrapper, and means for bending the portion of the wrapper upon the score-line to cause the same to adhere.

6. In a bottle-wrapper machine, a receiver, delivery-rollers mounted at the entrance to said receiver, one of said rollers having a peripheral recess into which the ends of the wrappers are deflected to enter the receiver, and means for directing the ends of said wrappers into said recess.

7. In a bottle-wrapper machine, a receiver, delivery-rollers at the entrance of said receiver, one of said rollers having a peripheral recess to receive the ends of the wrappers, means for pressing the ends of the wrappers into said recess, and means for counting the wrappers entering the receiver.

8. In a bottle-wrapper machine, corrugating-rollers, delivery-rollers receiving the corrugated wrapper from said corrugated rollers, one of said delivery-rollers having an annular peripheral recess and the other of said delivery-rollers having a peripheral recess, means for depressing the ends of the wrappers into said peripheral recess to deflect their force of travel from the machine, and a receiver to receive said wrappers.

9. In a bottle-wrapper machine, delivery-rollers, one of which has a peripheral recess, vibrating arms to depress the ends of the

wrappers into said peripheral recess, means for imparting movements to said arms as described, a receiver to receive the wrappers from the delivery-rollers after acted upon by the vibrating arms, and means for counting and marking the wrappers entering the receiver.

10. In a bottle-wrapper machine, delivery-rollers, one of which has an annular peripheral depression, and the other of which has a peripheral recess in a portion of its circumference, a device for initially deflecting the ends of the wrappers into said recess, vibrating arms to complete the depression of the ends of the wrappers into said recess, means for imparting longitudinal reciprocating movement to said arms, and means for imparting in the meantime an oscillating movement to said arms, and a receiver to receive the wrappers in parallel positions after being acted upon by said arms.

11. In a bottle-wrapping machine, the combination with a receiver, delivery-rollers mounted at the entrance of said receiver, one of said rollers having a peripheral recess to receive the pointed ends of the wrappers, means for pressing said ends of the wrappers into said recess, means for deflecting the ends

of said wrappers as they leave the rollers, a counter to count the wrappers as they leave said rollers, and a marking device by which a predetermined number of the blanks are marked as fed from said rollers and counted.

12. In a bottle-wrapping machine, the combination with delivery-rollers, a receiver, means for deflecting the rearward ends of the wrappers into said receiver, a counting device to count the wrappers entering said receiver, a marker to mark one of said wrappers after a predetermined number have entered the receiver, a carriage upon which said marker is supported, a flexible connection, a lever to which one end of said flexible connection is attached and the other end of said flexible connection being attached to said carriage, a bar upon which said carriage is slidingly mounted, and means for maintaining said bar and carriage in their normal positions.

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

MAURICE COSTELLO.

Witnesses:

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