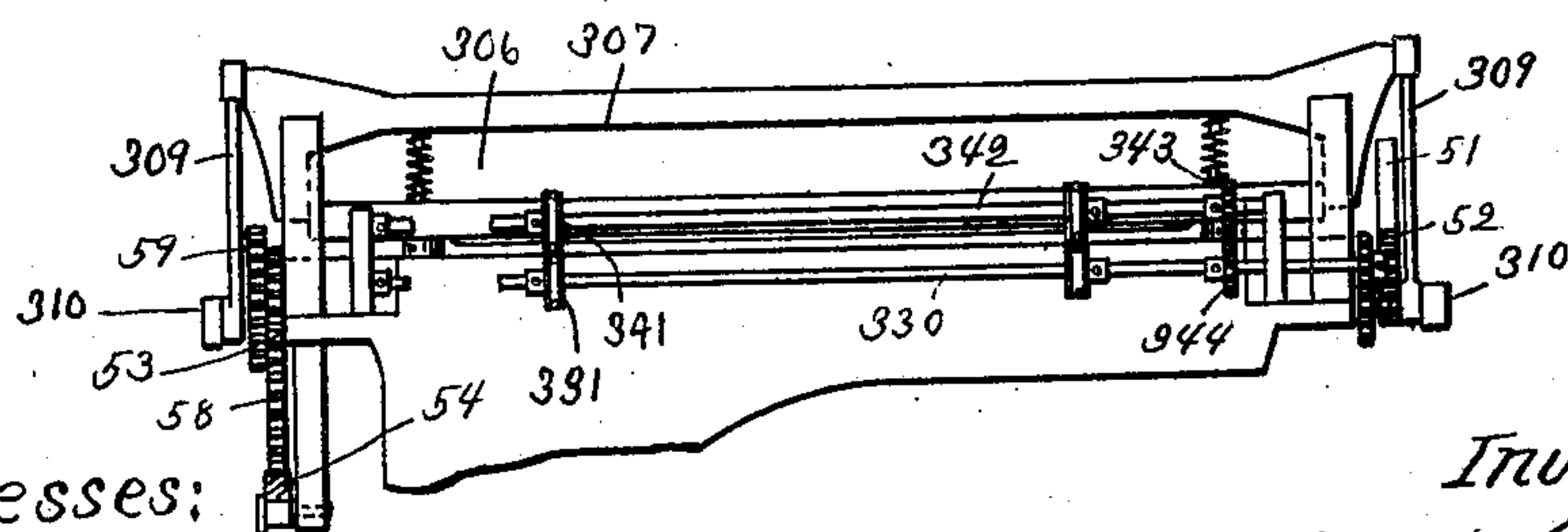
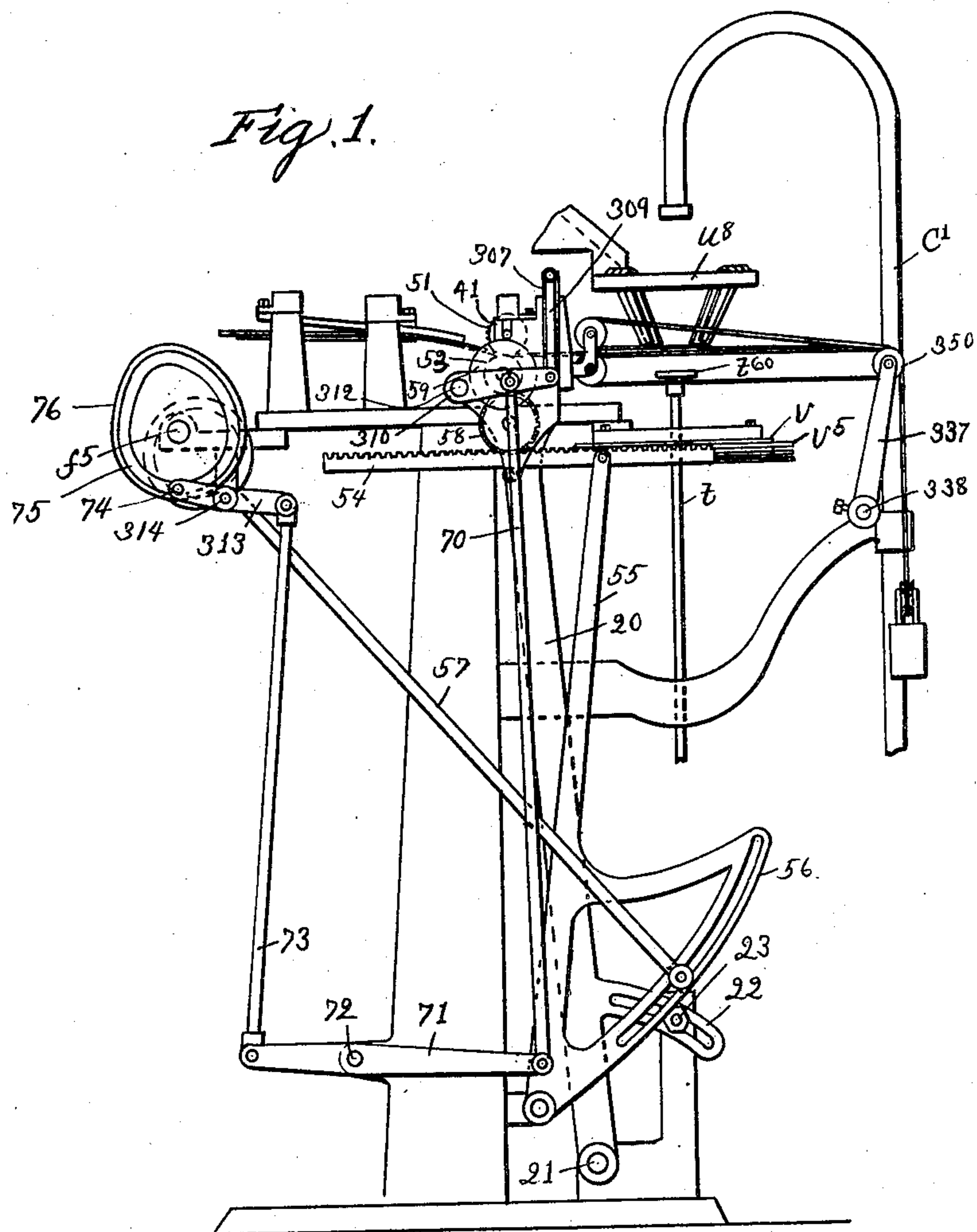


No. 889,867.

PATENTED JUNE 2, 1908.

M. H. BALLARD.  
WRAPPING MACHINE.  
APPLICATION FILED APR. 15, 1907.

2 SHEETS—SHEET 1.




Witnesses:   
H. B. Davis  
Cynthia Doyle

Fig. 2.

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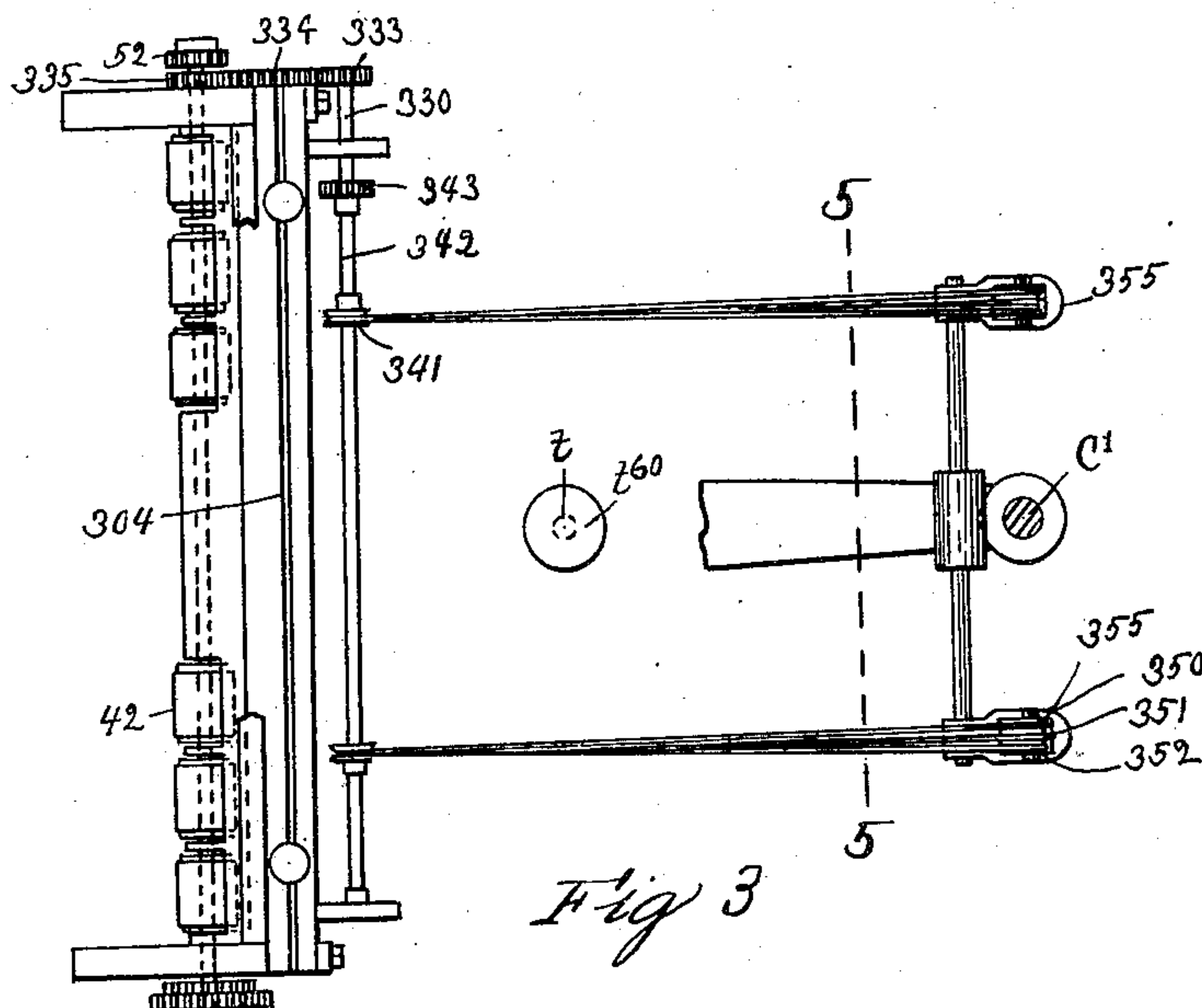


Fig. 3

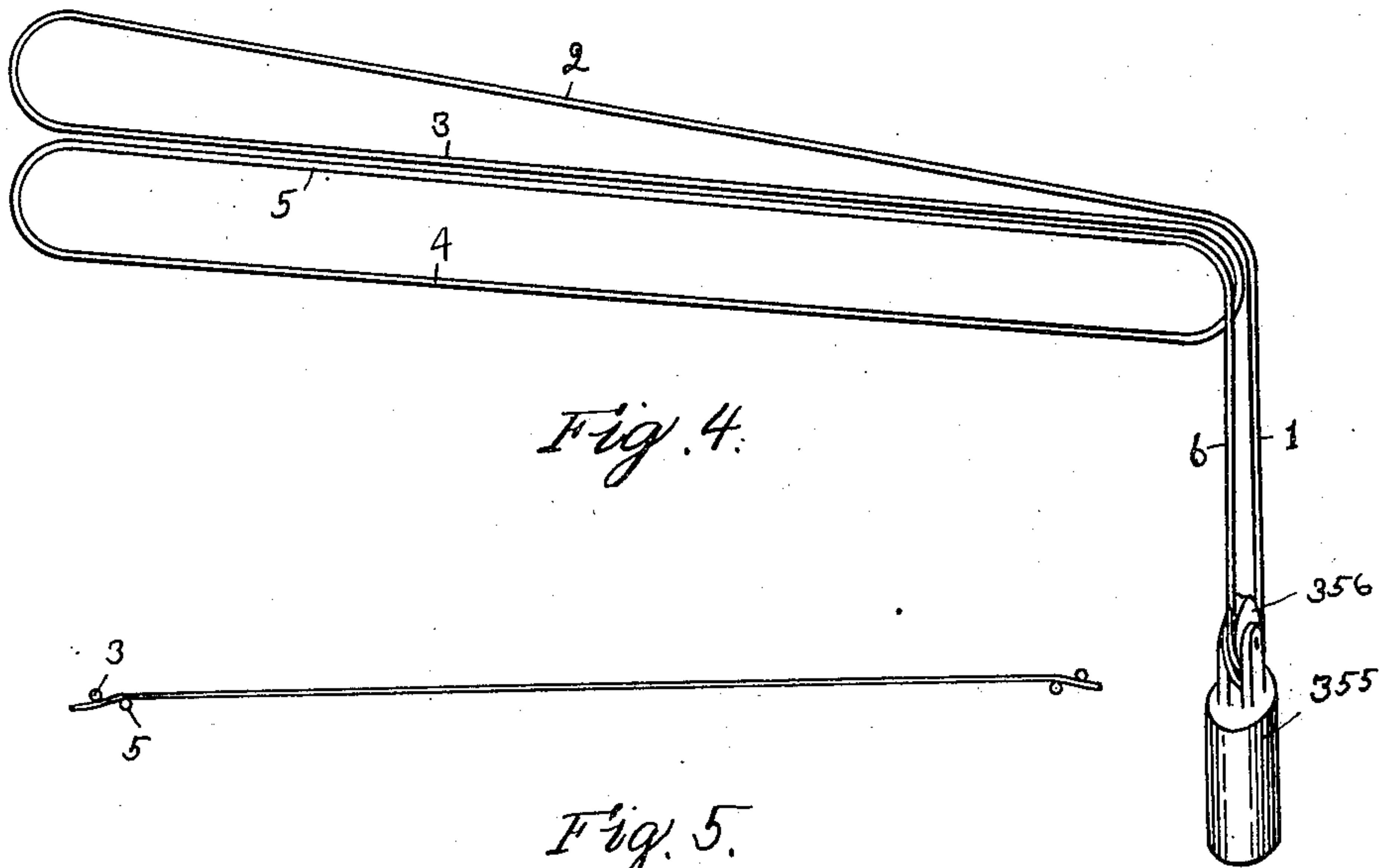


Fig. 4.

Fig. 5.

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# UNITED STATES PATENT OFFICE.

MILTON H. BALLARD, OF LYNN, MASSACHUSETTS, ASSIGNOR TO TRIPP FRUIT WRAPPING MACHINE CO., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF MAINE.

## WRAPPING-MACHINE.

No. 889,867.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed April 15, 1907. Serial No. 368,240.

*To all whom it may concern:*

Be it known that I, MILTON H. BALLARD, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Wrapping-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

10 This invention relates to wrapping machines and is intended as an improvement upon the wrapping machine shown in U. S. Patent #827,285 dated July 31, 1906. In said patent paper-engaging devices are employed, which are adapted to engage the end portion of the strip of paper which is fed forward by the feeding-device, between the co-operating members of the cutting-device, and to feed it forward and to hold it at rest while the cutting-device operates to sever the strip and to thereafter hold the severed end portion at rest until it is disengaged therefrom and delivered with the orange to the wrapping-devices.

25 In practice wrappers of many different sizes are required and hence means are provided for operating the feeding-device to feed forward different lengths of paper to form the wrappers, sometimes as much as twelve inches or more being fed forward and sometimes as little as eight inches. The wrapping-devices are supported in a predetermined position and it is necessary that the wrappers, regardless of their size, shall be centrally supported with relation thereto. Hence the cutting-device must be adjustable with respect to the wrapping-devices, so as to sever the strip at different points to form wrappers of different sizes and my present invention has for its object to provide means for thus adjusting the cutting-device with respect to the wrapping-devices. My invention also has for its object to provide means for adjusting the paper-engaging devices to correspond with the adjustments of the cutting-devices so as to feed forward, properly, the end of the strip of paper and to hold it at rest while the cutting-device operates to sever it and thereafter to hold the wrapper in approximately the same position and in the same plane with respect to the wrapping-devices for all adjustments of the cutting-device.

50 Figure 1 shows in side elevation a wrapping-machine embodying my present im-

provements. Fig. 2 is a front elevation of the cutting-device and feeding device, showing the paper-engaging devices in section. Fig. 3 is a plan view of the feeding-device, cutting-device and paper-engaging devices. Fig. 4 is a perspective view of one of the endless belts forming one of the paper-engaging devices. Fig. 5 is a sectional view, showing the paper engaged by the paper engaging devices.

The paper feeding-device herein shown, for the sake of illustrating my invention, comprises a pair of rolls 41, 42, journaled at their ends in a frame, the uppermost roll 41 having secured to it a pinion 51 which engages a pinion 52 secured to the lowermost roll, and a flanged disk 59 is secured to the opposite end of the lowermost roll, which is formed with internal ratchet teeth, adapted to be engaged by pawls borne by the gear 53, which is loosely mounted on the shaft of the roll. A pinion 58 engages said gear 53, which is engaged by a rack-bar 54, loosely connected to the upper end of an arm 55, pivoted at its lower end to the frame-work. The arm 55 has a slotted extension 56, to which is connected an eccentric-rod 57, which is connected with the main shaft  $f^5$ . As the shaft  $f^5$  revolves the arm 55 is moved back and forth on its pivot and the rack is reciprocated to positively but intermittently drive the feed-rolls. By adjusting the eccentric-rod connection with the slotted extension the feed-rolls will be operated to feed forward more or less paper as required for wrappers of different sizes.

In lieu of the feeding-device herein shown any other form of feeding-device, having the same capabilities may be employed, without departing from my invention.

The paper-cutting-device herein shown for the sake of illustrating my present invention comprises a vertically reciprocating knife 306, supported by a cross-head 307, which is movable in guide-ways adapted to receive it. The opposite ends of said cross-head are connected by links 309 with a pair of arms 310, which are secured to a rock-shaft 312, which is supported by the frame. One of said arms 310 is connected by a rod 70, with one end of a lever 71 pivoted at 72, the other end of said lever being connected by a rod 73 with one end of a lever 313 pivoted at 314, the opposite end of which bears



a stud 74, with or without a roll thereon, which works in a groove 75 formed in a disk 76 secured to one of the operating shafts of the machine, as for instance to the shaft  $f^5$ .

5 As the shaft  $f^5$  revolves the arms 310 are moved up and down and the knife correspondingly moved. The knife coöperates with a grooved knife-block 304 of any description.

10 In lieu of the cutting-device herein shown any other form of cutting device having the same capabilities may be employed, without departing from my invention.

The wrapping devices comprise essentially the jamming or pinching jaws  $v, v^5$ , adapted to be moved toward and from each other to gather in the edges of the wrapper and to jam or pinch them.

15  $t^{60}$  represents the support for the article which is mounted on a rod  $t$ , and  $c'$  represents the plunger which forces the article down through the centering device  $u^8$ , onto the support  $t^{60}$ , in the manner and for the purpose set forth in said Patent #827,285.

25 As herein shown the frame supporting the feeding-device and cutting-device is mounted at the upper end of a long arm 20, which is pivoted at its lower end at 21, and has a slotted extension 22, which receives an adjusting screw bolt 23 on an ear on the main frame. The pivoted supporting arm 20 is, therefore, adjustable in such manner as to hold the cutting-device and also the feeding-device at any desired position with relation to the wrapping-devices. The aforesaid adjustment is provided for moving said cutting-device and feeding-device toward and from the wrapping-devices. By thus adjusting the cutting-device the end portion of the strip of paper, which is fed forward by the feed-rolls, between the coöperating members of the cutting-device may be severed at different distances from the wrapping-devices, so that severed end portions of different lengths may be centrally disposed with respect to the wrapping devices.

40 It is obvious that the feeding-device need not be adjustable toward and from the wrapping-devices, but is herein shown, as adjustable, for the sake of supporting it on the same frame which is employed to support the cutting device and for simplifying the means employed for simultaneously operating said feeding device and the adjustable paper-engaging devices as will be hereinafter described.

55 A shaft 330 having its bearings in the frame close to the cutting-device has secured to it a pinion 333, which is engaged by an idle pinion 334, engaged by a pinion 335, secured to the shaft of the lowermost feed-roll 42, and said shaft 330 has also secured to it a pinion 344, which engages a pinion 343, secured to a shaft 342, disposed in parallelism with the shaft 330. The two shafts are, therefore, 65 positively driven.

A pair of positively operated paper-engaging devices are provided, which are separated to engage the strip of paper near its edges, and which are constructed and arranged to be lengthened and shortened to correspond to the different positions of the cutting-device with respect to the wrapping-devices. The paper-engaging devices are made extensible to thus provide for lengthening and shortening them. Said paper-engaging devices are similarly constructed and each consists of an endless belt passing over several pulleys as will be described.

331, 341 represent a pair of pulleys, one of which is secured to the shaft 330 and the other to the shaft 342, they being arranged one above the other to receive the endless belt. An arm 337 is rigidly held in position on a stud 338, by means of a set screw, and at the upper end of said arm three pulleys 350, 351, 352 are arranged on a stud projecting laterally from the arm, being made of substantially the same diameter and located close together, and the endless belt also passes over these pulleys. The pulleys 350, 351 and 352 are stationarily supported and the pulleys 331, 341 are movably supported, being connected with the frame of the cutting-device and hence movable with said frame toward and from the wrapping-devices, and to provide for taking up or letting out the endless belt, a weight 355, bearing a pulley 356, is provided, the belt passing around said pulley 356. The endless belt, starting at one side of its take-up loop, at 1, passes over the pulley 350, thence by 2 over the pulley 341, thence by 3 over pulley 351, thence by 4 over pulley 331, thence by 5 over pulley 352, to the other side 6 of the take-up loop.

105 It will be observed that with this arrangement the portions 3 and 5 of the belt occupy nearly horizontal planes, and the paper is engaged by these portions of the belt. As the pulleys 331 and 341 are positively driven the endless belt will be moved, and the portions 3 and 5 will move at approximately the same speed and in the same direction and will act to feed forward the strip of paper. As the cutting-device is adjusted back and forth the paper engaging device will be self adjustable longitudinally, that is to say, the endless belt will be taken up or let out as required by means of the weight which is held suspended by the take-up loop and in all positions of adjustment of the cutting-device the portions 3 and 5 of the belt will maintain the same plane with respect to the wrapping-devices.

125 The shafts 330 and 342 constitute one of the end supports for the paper-engaging devices and the arms 337 the other end support, the former being located at one side of the wrapping-devices and the latter at the opposite side thereof.



The two paper-engaging devices thus constructed and arranged are operated simultaneously but intermittingly to feed forward the paper and to hold it at rest while the cutting device severs the end portion of the strip and to thereafter hold the severed end portion until it is disengaged therefrom by the descending plunger *c'*, operating to force the article down upon it and then moving it with the article down onto the support and into position to be engaged by the wrapping-devices.

In my application for Letters Patent 300,331 filed February 9, 1906, a feeding-device and a cutting-device are represented as supported at the upper end of a pivoted arm, substantially as herein shown, but such construction is not therein claimed.

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

1. In a wrapping machine, the combination with wrapping-devices and a cutting-device for the paper adjustable toward and from the wrapping-devices, of extensible engaging-devices for the paper in front of said cutting-device, which extend in a horizontal plane from one to the other side of the wrapping-devices and which are separated to engage the edges of the strip of paper, means for operating said engaging-devices intermittingly, and means for operating said cutting-device while the engaging-devices are at rest, substantially as described.

2. In a wrapping machine, the combination with wrapping-devices, a feeding-device for the paper and a cutting-device for the paper, adjustable toward and from the wrapping-devices, of extensible engaging-devices for the paper in front of said cutting-device which extends in a horizontal plane from one to the other side of the wrapping-devices and which are separated to engage the edges of the strip of paper, means for operating said feeding-device and said engaging-devices simultaneously, and means for operating said cutting-device while the feeding-device and engaging-devices are at rest, substantially as described.

3. In a wrapping machine, the combination with wrapping-devices, a cutting-device for the paper, a frame bearing said cutting-device which is adjustable toward and from the wrapping-devices, of extensible engaging-devices for the paper in front of said cutting-device, which extend in a horizontal plane from one to the other side of the wrapping-devices and which are separated to engage the edges of the strip of paper, stationary supports for the outer ends of said engaging-devices at one side of the wrapping-devices, and supports for the inner ends of said engaging-devices, borne by the frame bearing the cutting-device, and means for operating said engaging-devices intermit-

tingly, and means for operating said cutting-device while the engaging-devices are at rest, substantially as described.

4. In a wrapping machine, the combination with wrapping-devices, a feeding-device for the paper, a cutting-device for the paper, and frame bearing said feeding-device and cutting-device, adjustable toward and from the wrapping-device, of extensible engaging-devices in front of said cutting-device which extend in a horizontal plane from one to the other side of the wrapping-devices and which are separated to engage the edges of the strip of paper, stationary supports for the outer ends of said engaging-devices at one side of the wrapping-devices, and supports for the inner ends of said engaging-devices borne by the adjustable frame bearing the feeding-device and cutting-device, means for operating said feeding-device and said engaging-devices simultaneously, and means for operating said cutting-device while the feeding-device and engaging-devices are at rest, substantially as described.

5. In a wrapping machine, the combination with wrapping-devices and a cutting-device for the paper, adjustable toward and from the wrapping-devices, and movable engaging-bands for the paper in front of said cutting-device for conveying the paper to the wrapping-devices, the engaging-portions of which are extensible to correspond with the different positions of adjustment of the cutting-device, substantially as described.

6. In a wrapping machine, the combination with wrapping-devices, a feeding-device for the paper and a cutting-device for the paper, adjustable toward and from the wrapping-devices, of engaging-bands for the paper in front of said cutting-device, the engaging portions of which are extensible to correspond with the different positions of adjustment of the feeding-device and cutting-device, and means for operating said feeding-device and said engaging-bands simultaneously, and means for operating said cutting-device while the feeding-device and engaging-bands are at rest, substantially as described.

7. In a wrapping machine, the combination with a wrapping-device, a paper-feeding-device, and a paper-cutting-device, of a pivoted supporting arm bearing said feeding-device and said cutting-device, and adjustable toward and from the wrapping-device and means for holding said supporting arm in whatever position it may be set, substantially as described.

8. In a wrapping machine, the combination with wrapping-devices, of a paper-cutting-device adjustable toward and from the wrapping-devices, and paper-engaging bands in front of said cutting-device, and supports for said bands, and means for moving the supports at one end toward and from the sup-



ports at the opposite end, substantially as described.

9. In a wrapping machine, the combination with wrapping-devices, of a cutting device, a support therefor, adjustable toward and from the wrapping-devices, a paper-engaging band, and end supports therefor, the supports at one end of said band being mounted on the support bearing the cutting device, substantially as described.

10. In a wrapping machine, the combination with wrapping-devices, of a cutting-device adjustable toward and from the wrapping-device, paper engaging-bands, and end supporting pulleys for said bands, the supporting pulleys at one end being positively driven and movable toward and from the supporting pulleys at the opposite end, substantially as described.

11. In a wrapping machine, the combination with wrapping-devices, of a cutting-device, a frame supporting it adjustable toward and from the wrapping-devices, paper-engaging-bands, and end supporting pulleys for said bands, the supporting pulleys at one end being carried by the frame of the cutting-device and being movable toward and from the opposite end supporting pulleys, substantially as described.

12. In a wrapping machine, the combination with wrapping-devices, of a paper-cutting-device adjustable toward and from the wrapping-devices, a pair of paper-engaging-devices, each comprising an endless band, a plurality of end supports at each end of each device, the supports at one end being movable toward and from the supports at the other end and a take-up device for the band, substantially as described.

13. In a wrapping-machine, the combination with wrapping-devices, of a paper cutting-device adjustable toward and from the wrapping-devices, of paper-engaging devices for moving the end portion of a strip of paper into correct position with respect to the wrapping-devices and for holding it while the cutting-device operates to sever it and for thereafter holding the severed end portion, consisting of two endless bands, each passing over a pair of pulleys disposed one above the other and borne by a support which is mov-

able toward and from the wrapping-devices, and also passing over a set of pulleys arranged side by side and borne by a stationary support, substantially as described.

14. In a wrapping-machine, the combination with wrapping-devices, of a paper cutting-device adjustable toward and from the wrapping-devices, of paper-engaging devices for moving the end portion of a strip of paper into correct position with respect to the wrapping-devices and for holding it while the cutting-device operates to sever it and for thereafter holding the severed end portion, consisting of two endless bands, two pairs of positively driven pulleys, over which said bands respectively pass, the pulleys of each pair being disposed one above the other, a support bearing said pulleys which is movable toward and from the wrapping-devices, and a set of pulleys arranged side by side and borne by a stationary support, over which said bands also pass, substantially as described.

15. In a wrapping-machine, the combination with wrapping-devices, and a paper-cutting-device, of a frame supporting said paper-cutting-device, which is adjustable toward and from the wrapping-devices, of paper-engaging devices for moving the end portion of a strip of paper into correct position with respect to the wrapping-devices and for holding it while the cutting-device operates to sever it and for thereafter holding the severed end portion, consisting of two endless bands, a set of pulleys, arranged side by side, over which said bands pass, a stationary support for said pulleys, two pairs of pulleys, the pulleys of each pair being arranged one above the other, positively driven shafts respectively supporting said last named pulleys, and supports for said shafts borne by the frame supporting the cutting-device, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

MILTON H. BALLARD.

Witnesses:

A. D. NICHOL,  
M. S. ROBERTSON.