

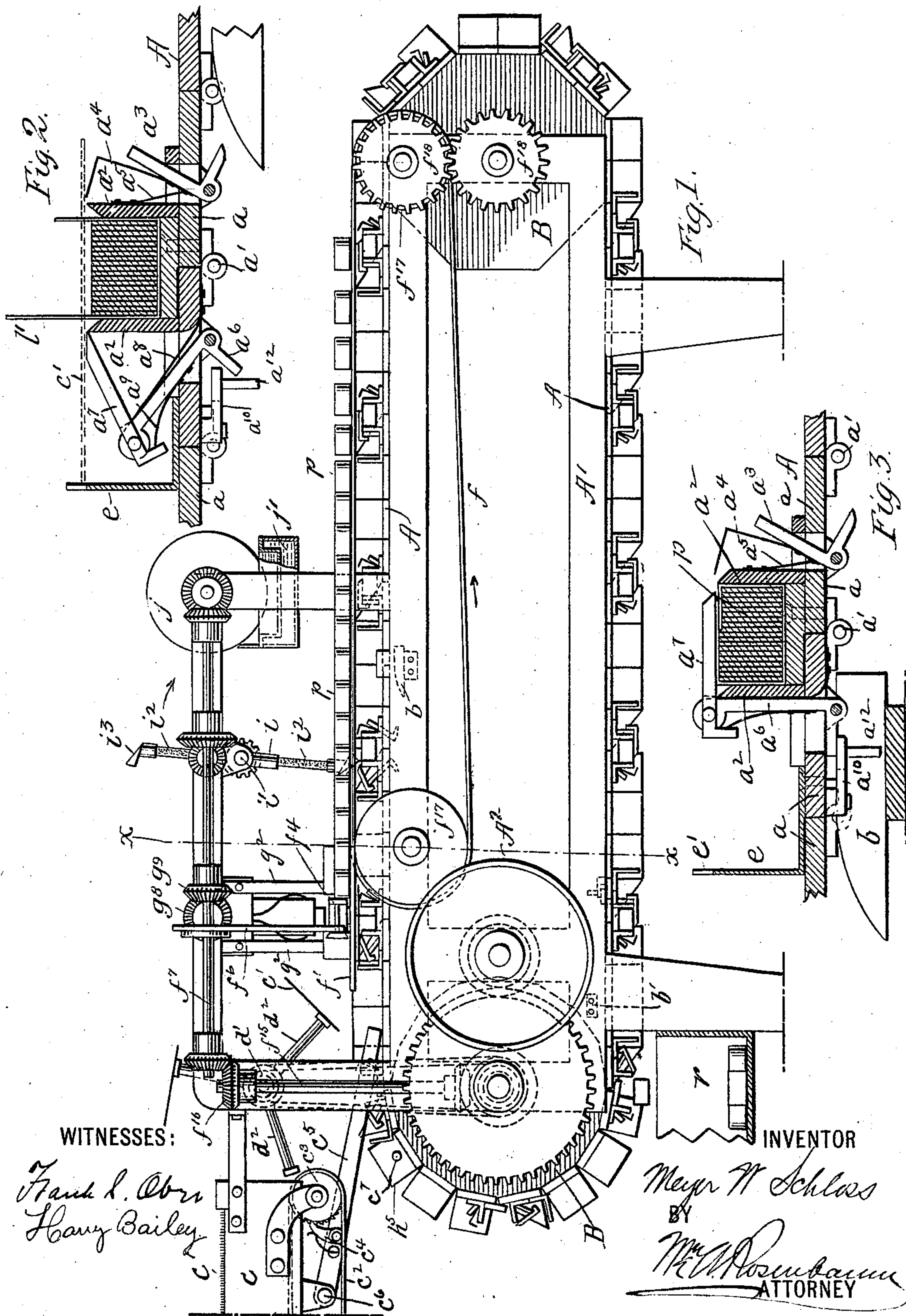
(No Model.)

4 Sheets—Sheet 1.

M. W. SCHLOSS.  
PARCEL WRAPPING MACHINE.

No. 574,174.

Patented Dec. 29, 1896.



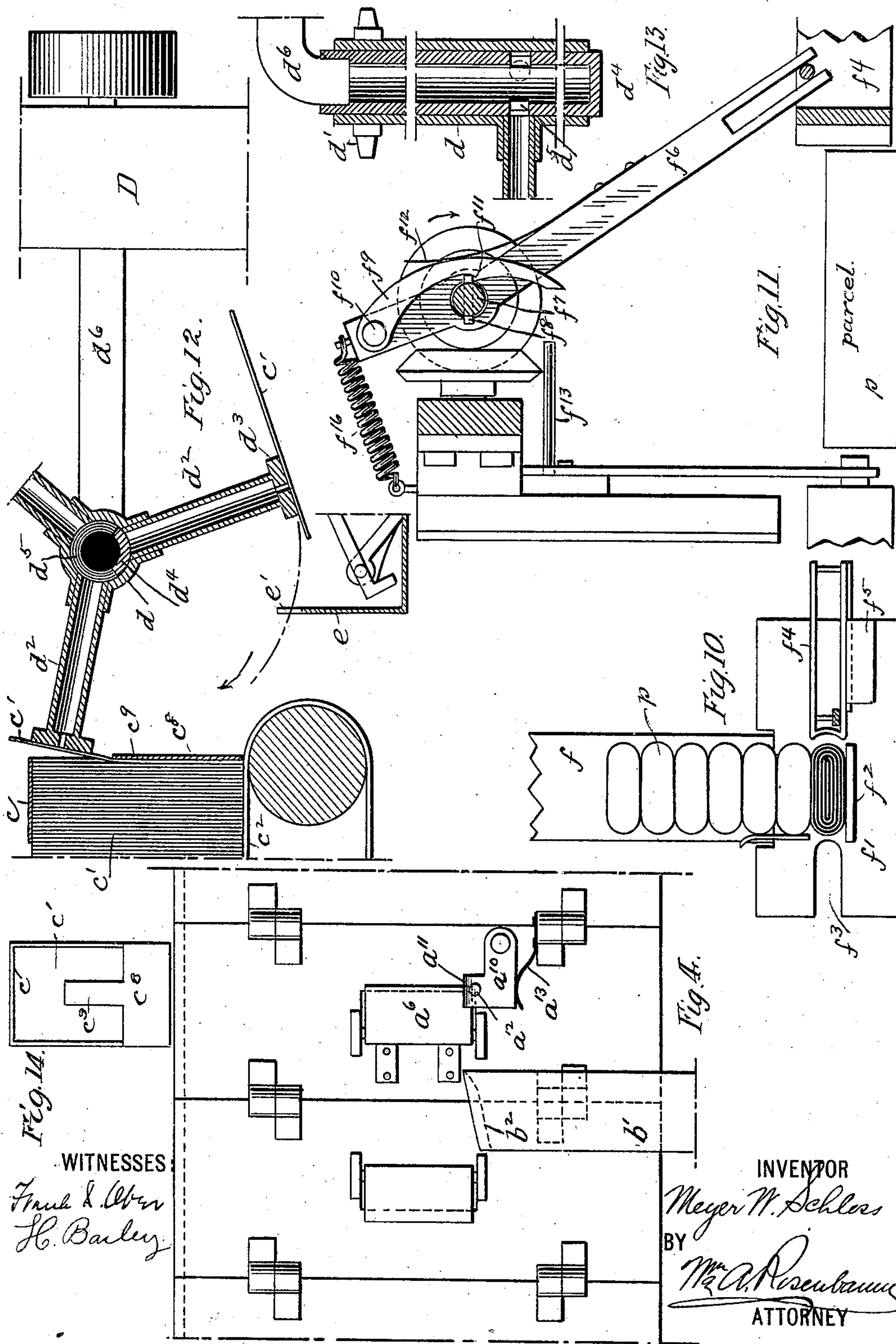
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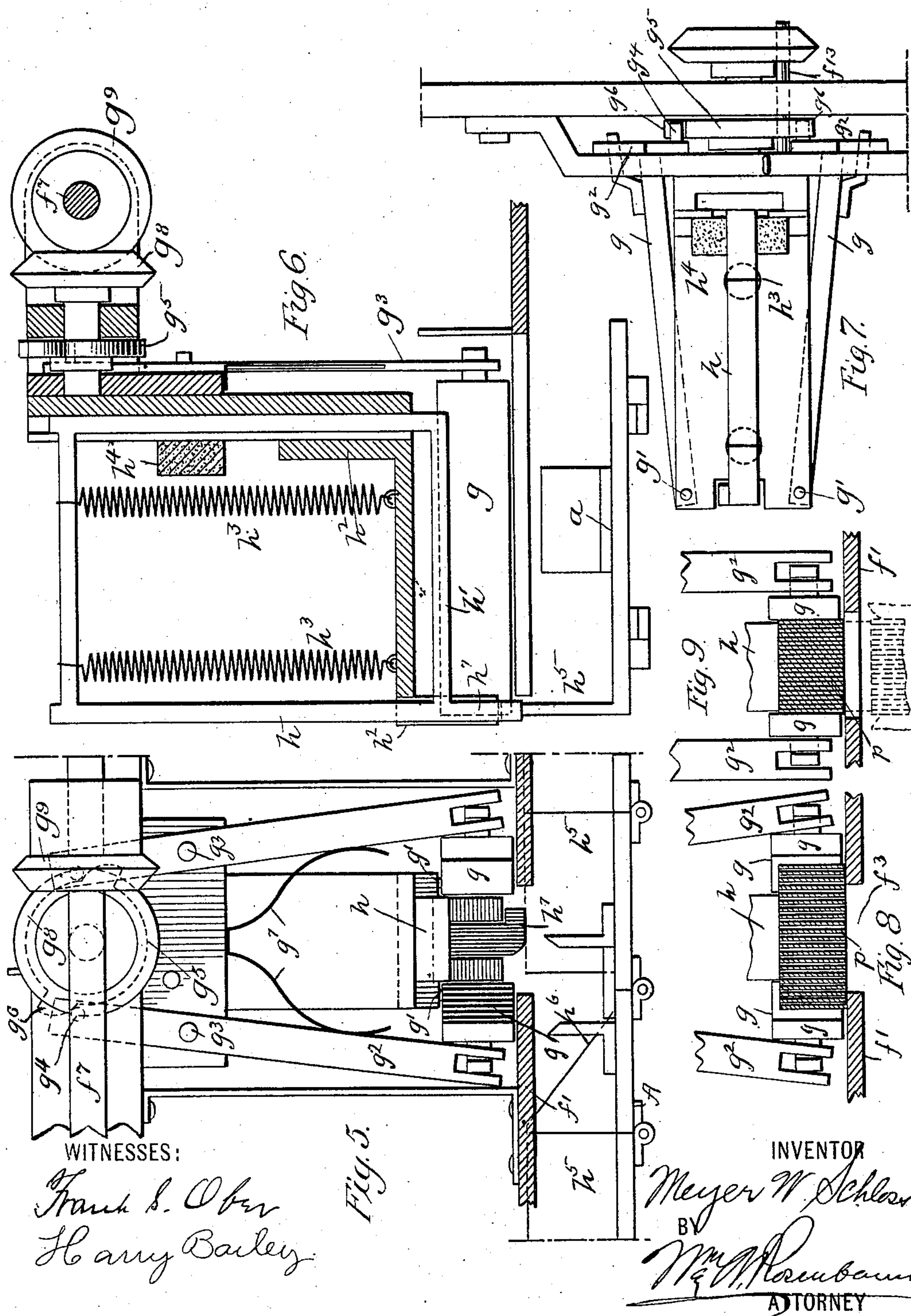




4 Sheets—Sheet 3.

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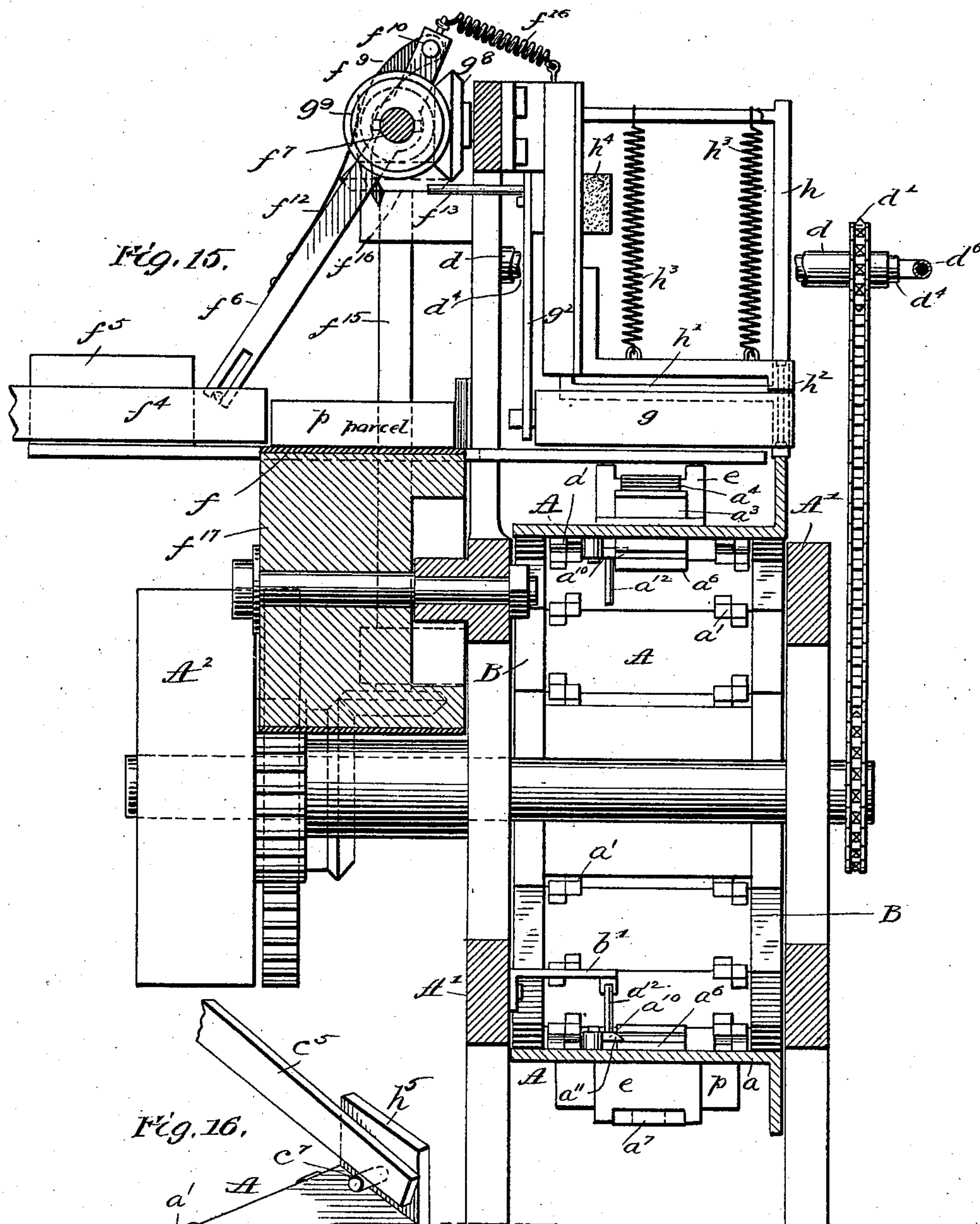
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4 Sheets—Sheet 4.

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# UNITED STATES PATENT OFFICE.

MEYER W. SCHLOSS, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC WRAPPING MACHINE COMPANY, OF NEW YORK.

## PARCEL-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,174, dated December 29, 1896.

Application filed July 6, 1896. Serial No. 598,093. (No model.)

*To all whom it may concern:*

Be it known that I, MEYER W. SCHLOSS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Parcel-Wrapping Machines, of which the following is a full, clear, and exact description.

This invention is a machine for wrapping and sealing wrappers upon packages of goods, the object being to provide a machine which will do this work efficiently and rapidly and be automatic in its action to the greatest possible extent.

The machine involves the use of an endless belt made up of links hinged together and passing over two rollers. The belt carries a plurality of parcel-holders, each of which is equipped with folding blades or devices. An automatic feeding mechanism is provided for depositing the parcels in the holders as they successively pass a given point, and an automatic device is provided for inserting a label or wrapper in the holder before the parcel is deposited therein.

The machine also comprehends certain means for applying mucilage or other sealing material to the wrapper, devices for applying and maintaining pressure upon the sealed flap of the wrapper to give time for the sealing material to stick, devices for feeding and holding the labels or wrappers, and other devices, all of which will be fully referred to hereinafter, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a side elevation of the complete machine. Figs. 2 and 3 are details of the holders and folding devices. Fig. 4 is a plan of a portion of the under side of the belt and a device for releasing the parcels from the holders. Figs. 5 and 6 are respectively an elevation and a central vertical section of the device for depositing the parcels in the holder. Fig. 7 is a plan of the same device, illustrating its operation. Figs. 8 and 9 are details of the same device, illustrating its operation. Fig. 10 is a plan of the feeding-table. Fig. 11 is a detail of a portion of the parcel-feeding mechanism. Fig. 12 is a detail of the pneumatic apparatus for placing the wrappers or labels in the holders. Fig. 13 is a sectional

view of the shaft of the label-applying device. Fig. 14 is a front view of the label-holding box. Fig. 15 is a vertical section of the entire machine, taken on line  $x x$  of Fig. 1; and Fig. 16 is a detail of a portion of the mechanism for feeding bodily forward the wrappers or labels in their receptacle.

Referring to the drawings by letter, A represents a traveling belt made up of a series or chain of rigid flat links  $a$ , hinged together at  $a'$  on the under side. This belt is mounted to move over two polygonal drums B and B', respectively. The drum B' has twice as many sides as the drum B and the sides of the drum B' are substantially the same width as the links of the belt, so that as the belt passes over the drum B' the adjacent links will turn on their hinges and assume different planes, but while passing over the roller B each succeeding pair of links will remain in the same plane constantly and thus maintain the same relative position while passing around the drum, the object of which will appear later on. The drums are mounted in a suitable frame A', and are driven by power applied through pulley A<sup>2</sup>, which is geared in the manner shown to the drum B'.

Every other pair of links of the belt carries a parcel-holder consisting of two upright plates  $a^2 a^2$ , one attached to each link of the pair. These are adapted to receive the parcels between them. On the forward link a right-angled lever  $a^3$  is pivoted, one arm of which extends above the link and the other below it, the link having an opening for this purpose. The upper arm carries a bent spring-plate  $a^4$ , which I shall call a "folding-blade." A spring  $a^5$  is used to hold the folding-blade in its inoperative position. To the rear of the holder is a similar right-angled lever  $a^6$ , with its arm projecting above and below the link similar to  $a^3$  and carrying at its upper end a hinged rigid folding-blade  $a^7$ . A spring  $a^8$  is used to throw the lever into its inoperative position and another spring acts upon the blade  $a^7$  to hold it in contact with the upper part of the holder and to press it downward upon the package when it is resting thereupon, as shown in Fig. 3. On the under side of the belt is provided for each holder a latch for the lever  $a^6$ . This consists of a pivoted plate  $a^{10}$ , having a



cam-surface  $a^{11}$  and a pin  $a^{12}$ . It is pushed by a spring  $a^{13}$  over the edge of the lower arm of the lever  $a^6$  when said arm is lifted in the manner to be hereinafter described. The lever in swinging upward strikes the cam-surface  $a^{11}$ , springs the latch backward, permits the lever to pass, and then the latch locks it in this position. These right-angled arms carrying the folding-blades are operated by means of a cam  $b$ , which is merely a stationary plate fixed underneath the upper portion of the belt to a suitable part of the frame. The inclined edge of the cam first strikes the lower arm of lever  $a^3$ , lifts it, and holds it elevated until the same cam-surface strikes the lower arm of lever  $a^6$  and throws said lever upward, at which time lever  $a^3$  drops off the rear of the cam-plate. When lever  $a^6$  is thrown upward, it is locked in that position, as before described, by the latch  $a^{10}$ , and continues to be locked while the holder passes around over drum B and to a point below the drum B', at which point is located a plate  $b'$ , having a cam edge  $b^2$ , against which the pin  $a^{12}$  of the latch comes in contact, and is moved backward against the pressure of spring  $a^{13}$ , thus releasing the lever  $a^6$  and allowing it to assume the position shown in Fig. 2.

At the left of the machine is mounted a box  $c$ , containing the labels or wrappers  $c'$ , which are to be placed and sealed around the packages. The bottom of this box is formed by a belt  $c^2$ , upon which the labels stand on end. The belt passes over suitable rollers, to one of which is fixed a ratchet-wheel  $c^3$ , and adjacent to this a pawl  $c^4$ , carried by lever  $c^5$ , pivoted at  $c^6$ . The lever extends forward into the path of the pin  $c^7$ , carried by flange  $h^5$  on the belt  $a$ , as shown in Fig. 16. When the lever is struck by this pin, the belt  $c^2$  is moved forward and the bunch of labels fed slightly ahead. The front end of the box is partially closed by a plate  $c^8$ , having a central spring-tongue  $c^9$ , against which the labels or wrappers are pushed and from which point they are taken one by one by a device hereinafter described and placed successively upon the holders of the main belt.

Above the drum B' and mounted in the frame parallel with the shaft of said drum is a hollow shaft  $d$ , (shown in Figs. 12 and 13,) carrying a sprocket-wheel  $d'$ , by means of which it is rotated through a chain from the shaft of the drum B', the chain being shown in dotted lines in Fig. 1. This shaft carries three radial tubular arms  $d^2$ , opening at their outer ends through flat heads  $d^3$ . Inside of the shaft is a stationary tube  $d^4$ , having a segment of its wall removed from its upper side portions to form an opening  $d^5$ , affording communication between the arms  $d^2$  and the tube  $d^4$ . The lower portion of the tube  $d^4$  remaining forms a cut-off valve which closes communication between the tubular arms while they are passing around the lower sides of the axis. The tube  $d^4$  is connected by means of a pipe  $d^6$ , flexible or rigid, with an exhaust-

machine D, driven by any suitable motor and continuously running while the machine is in operation. Arms  $d^2$  rotate in the direction of the arrow, Fig. 12, and are of such length as to rub over the spring-tongue  $c^9$  of the label-box and against the upper end of the label presented at the front of the box. The function of the spring-tongue is to separate the labels without so much frictional contact as to make it difficult to remove the front label. At the same time it yields slightly to permit the circular movement of the heads of arms  $d^2$ . As soon as the arm passes the upper end of the spring-tongue the suction causes the front label to adhere to the end of the arm, and it is lifted out of the box and carried to a parcel-holder, where it is deposited in the manner hereinafter described.

Behind each of the parcel-holders is an upright transverse plate  $e$ , having a notch in its upper edge of such width as to permit the heads  $d^3$  to pass through, but narrower than the labels or wrappers. This notch is formed by a lug  $e'$  at each end of the plate. The movement of the parcel-holders to the right and of the arms  $d^2$  to the left is timed so that one of the arms will always meet a holder as it reaches the point immediately above drum B'. In this position of the parts the label is standing horizontally above the holder, as shown in dotted lines in Fig. 2, and the suction is cut off by the valve on the lower side of the tube  $d^4$ . The corners of the label then strike the lugs  $e'$ , and as the holder and arm  $d^2$  continue their movements in opposite directions the label is deposited upon the top of the holder, where it rides to the point where the parcel is inserted in the holder, as will now be described.

$f$  is an endless belt or apron (shown in Figs. 1, 10, and 15) traveling in the direction indicated by the arrow and passing over drums  $f^{17}$   $f^{17}$ , driven from one of the main drum-shafts by gearing  $f^{18}$ . Upon this an operator places the parcels to be wrapped or labeled by the machine. These parcels are indicated by  $p$ . As the belt moves along it forces the parcels into the feeding-table  $f'$  and against a stop  $f^2$  thereon. The parcel here illustrated is a coil of braid, but it will be understood that the machine may be used to wrap up chewing-gum, tobacco, soap, or any other article. The feeding-plate extends over the belt  $a$ , and is provided with an opening  $f^3$  immediately above the path of the parcel-holders. This opening is of substantially the same width as the holders.

$f^4$  is a reciprocating feeding-head mounted in a suitable guide  $f^5$  on the feeding-plate. It is adapted to reciprocate in a direction at right angles to the travel of the belt  $a$ , and it forces the parcel  $p$ , immediately in front of it, over to a point above the opening  $f^3$ , where it rests upon the edges of said opening, as shown in Fig. 8. The feeding-head is reciprocated by means of an arm  $f^6$ , pivoted upon a shaft  $f^7$ . This shaft is driven from the



shaft of drum B' by means of shaft  $f^{15}$  and bevel-gear  $f^{18}$ . The shaft is provided with two lugs  $f^8$ , projecting in opposite directions, and the arm is provided with latch  $f^9$ , pivoted at  $f^{10}$  and having a shoulder  $f^{11}$ , adapted to be engaged by the lugs  $f^8$ . A spring  $f^{12}$  insures the engagement of the lugs and shoulder at the proper time.

$f^{13}$  is a pin for unlocking the latch at the proper time, and  $f^{16}$  is a spring for moving the arm  $f^6$  in one direction. The shaft in rotating in the direction of the arrow, Fig. 11, engages with the shoulder  $f^{11}$  by means of one of its lugs  $f^8$  and swings arm  $f^6$  to the left, thereby forcing the parcel of braid in front of the reciprocating head into the position before described. At the end of this stroke the latch strikes pin  $f^{13}$  and disengages from lug  $f^8$ , when spring  $f^{16}$  returns arm  $f^6$  to its original position, ready for feeding another parcel.

When the parcel is of compressible material, such as a coil of braid, it is desirable to compress it before the wrapper or label is placed around it, and I have provided mechanism for doing this, which, however, may be dispensed with where the parcels are of different nature. Flanking each side of the opening  $f^3$  is a plate  $g$ , pivoted at the end most remote from the reciprocating head  $f^4$  upon vertical pivots  $g'$ . These plates normally diverge from their pivoted ends toward the reciprocating feeding-head and form a V-shaped chamber, into which the parcel  $p$  is forced by the reciprocating head. The diverging ends of the plates are thrown away from each other by arms  $g^2$ , pivoted at  $g^3$ , and with their upper ends provided with pin  $g^4$ , standing in the plane of the disk  $g^5$ , having two cam-lugs  $g^6$ , arranged diametrically opposite each other. Two springs  $g^7$  act upon arms  $g^2$  to force them apart, while the cam-lugs  $g^6$  force them together and suddenly release them. Disk  $g^5$  is on a short shaft with bevel-gear  $g^8$ , which is driven from shaft  $f^7$  by bevel-gear  $g^9$ .

Immediately above the opening  $f^3$  in the feeding-plate is a plunger  $h$ , consisting of a rectangular frame the lower cross-piece  $h'$  of which forms the head of the plunger, while its sides run in suitable guides  $h^2$  of the frame. Springs  $h^3$  are arranged between the plunger and the frame to force the former downward when opportunity is presented, and a buffer  $h^4$ , of rubber, receives the stroke of the plunger at the lower end of its movement.

Along one edge of the links of the belt  $a$  is arranged an upwardly-projecting flange  $h^5$ , the flange being in sections corresponding to the links. The section of flange immediately opposite the parcel-holder is cut away diagonally to form a cam  $h^6$ . The plunger  $h$  is provided with a foot  $h^7$ , that runs upon the top of this flange, and it is held in its elevated position by the flange. When, however, the cut-away section of flange is presented, the plunger drops suddenly under the force of

springs  $h^3$ , but immediately commences to rise by contact with the cam  $h^6$ . The feeding of the parcels into the holders therefore consists in first forcing the parcel between the diverging plates  $g$ , then squeezing the parcel between the plates to a size permitting it to pass through opening  $f^3$  and to fit the holder, then driving the parcel from between plates  $g$ , through the opening  $f^3$ , into the holder by means of the plunger, these operations being properly timed by means of the gearing. The label, having been previously adjusted across the top of the holder, is forced into the holder with and beneath the parcel, and thereafter assumes the position shown in Fig. 2. The belt then carries the holder forward to the device for applying mucilage or glue to the label, which will now be described.

$i$  is a double-ended arm swinging upon a shaft  $i'$  and having sections of rubber  $i^2$  or other flexible material, and at its extremities daubers  $i^3$ . Shaft  $i'$  is driven by spur and bevel gear from shaft  $f^7$ .  $j$  is a drum having a smooth periphery dipping into the reservoir  $j'$  of glue or other suitable cement. This is rotated slowly, and the daubers  $i^3$  in traveling in the direction of the arrow make contact with the drum, taking the glue therefrom, and immediately thereafter make contact with the flap  $l'$  of the label, leaving the moist glue thereon. Then arm  $a^3$  is struck by cam  $b$ , and the folding-blade  $a^4$  is forced over and turns the short end of the label down upon the top of the parcel. Next the arm  $a^6$  is struck by cam  $b$ , and the blade  $a^7$  forces the long end  $l'$  of the label down upon the short end. Simultaneously  $a^3$  leaves the cam, and blade  $a^4$  does not interfere with the work of blade  $a^7$ . Arm  $a^7$  therefore continues to press upon the label and the top of the package under the pressure of spring  $a^9$  while the holder is traveling over drum B to the cam  $b'$ . This gives the mucilage an opportunity to dry and stick. In moving around the drum B the two links carrying the parts of each holder are maintained in line with each other, and the grip on the parcel is therefore not loosened. When cam  $b'$  is reached, the latch  $a^{10}$  is released in the manner before described, and as soon as the two parts  $a$  of the holder are separated by the opening of the links on the drum B' the parcel falls out into a receptacle.

It will thus be seen that the entire operation of wrapping the parcels is automatically accomplished, except the work of placing the parcels upon the feeding-belt  $f$ , and this operation may be done with more or less irregularity so long as a parcel is always against the stop  $f^2$ .

Having thus described my invention, I claim—

1. In a wrapping-machine, an endless belt provided with a parcel holder or holders adapted to open and release the parcel when the belt bends, in combination with two polygonal drums having different numbers of



sides over which the belt passes, substantially as described.

2. In a wrapping-machine, the combination of an endless belt carrying a series of parcel-holders, and two folding-blades for each holder also carried by the belt and acting in opposite directions upon the wrapper, substantially as described.

3. In a wrapping-machine, the combination of an endless belt carrying a series of parcel-holders and two folding-blades for each holder also carried by the belt and acting in opposite directions upon the wrapper and mechanism located under the belt for operating said blades.

4. In a wrapping-machine the combination of an endless belt carrying a series of parcel-holders, two arms pivoted to the belt for each holder and extending through openings in the belt, folding-blades carried by said arms and a stationary cam located under the belt for operating said arms.

5. In a wrapping-machine, the combination of a parcel-holder, a folding-blade moving therewith, a latch for holding said blade against the folded wrapper and a releasing device for the latch, substantially as described.

6. In a wrapping-machine, the combination of a series of traveling parcel-holders, a stationary label or wrapper holder, a hollow shaft, a series of hollow radial arms carried by said shaft, and means for creating a suction therethrough; said arms adapted to successively lift labels from the label-holder and deposit them upon the parcel-holders as they travel along.

7. The combination of a stationary label-holder, a hollow shaft carrying a series of

hollow radial arms, means for creating a suction through said arms and shaft, means for rotating the shaft, and a cut-off valve for the purpose set forth.

8. The combination with an open-ended arm through which a suction is created, said arm swinging upon an axis, a stationary label or wrapper holder having a front plate against which the wrappers rest, said plate having a spring-tongue against which the open end of the arm strikes before it comes in contact with the label or wrapper.

9. In a wrapping-machine, the combination of a pair of pivoted plates, a parcel-holder adapted to move past said plates, and two plungers, one adapted to force a parcel to be wrapped between the plates, and the other to force it from the plates into the holder.

10. In a wrapping-machine, the combination of a parcel-holder, a feeding-plate with an opening in it located above the holder, a pair of squeezing-plates flanking the opening, and a plunger adapted to drop the parcel from its position between the plates through the opening and into the holder.

11. In a parcel-wrapping machine, the combination of a belt carrying a series of holders, a flange on said belt, a plunger located above the path of the holders and riding upon the flange, the flange having notches located opposite the holders permitting the plunger to fall, substantially as described.

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

MEYER W. SCHLOSS.

Witnesses:

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FRANK S. OBER.