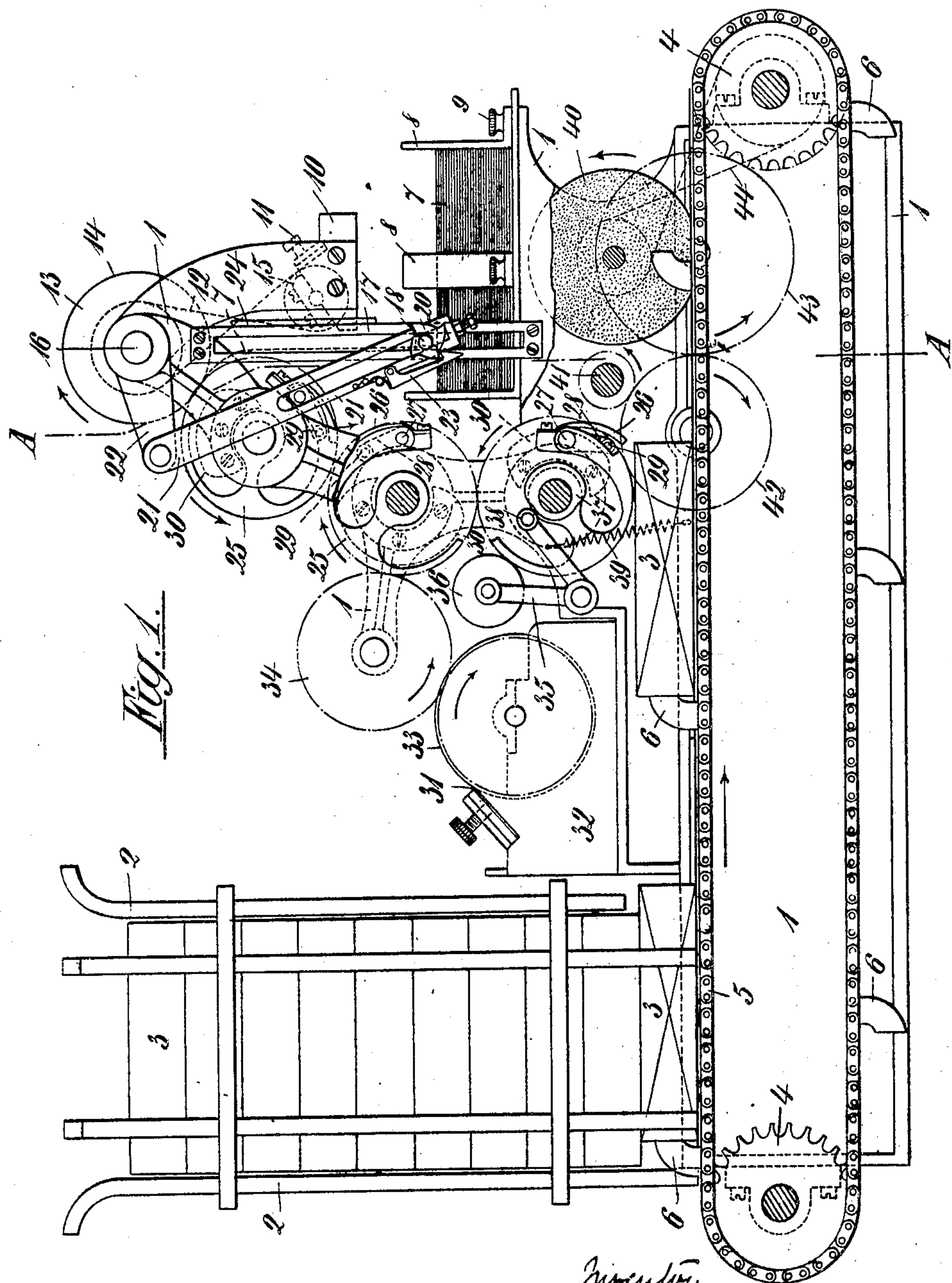


No. 804,168.

PATENTED NOV. 7, 1905.

C. OTTING.  
LABELING MACHINE.  
APPLICATION FILED NOV. 12, 1903.

3 SHEETS--SHEET 1.



Witnesses  
Albert Hopkins  
Frank G. Brewster

Inventor  
Care Otting  
by Sturtevant & Greeley  
Attorneys

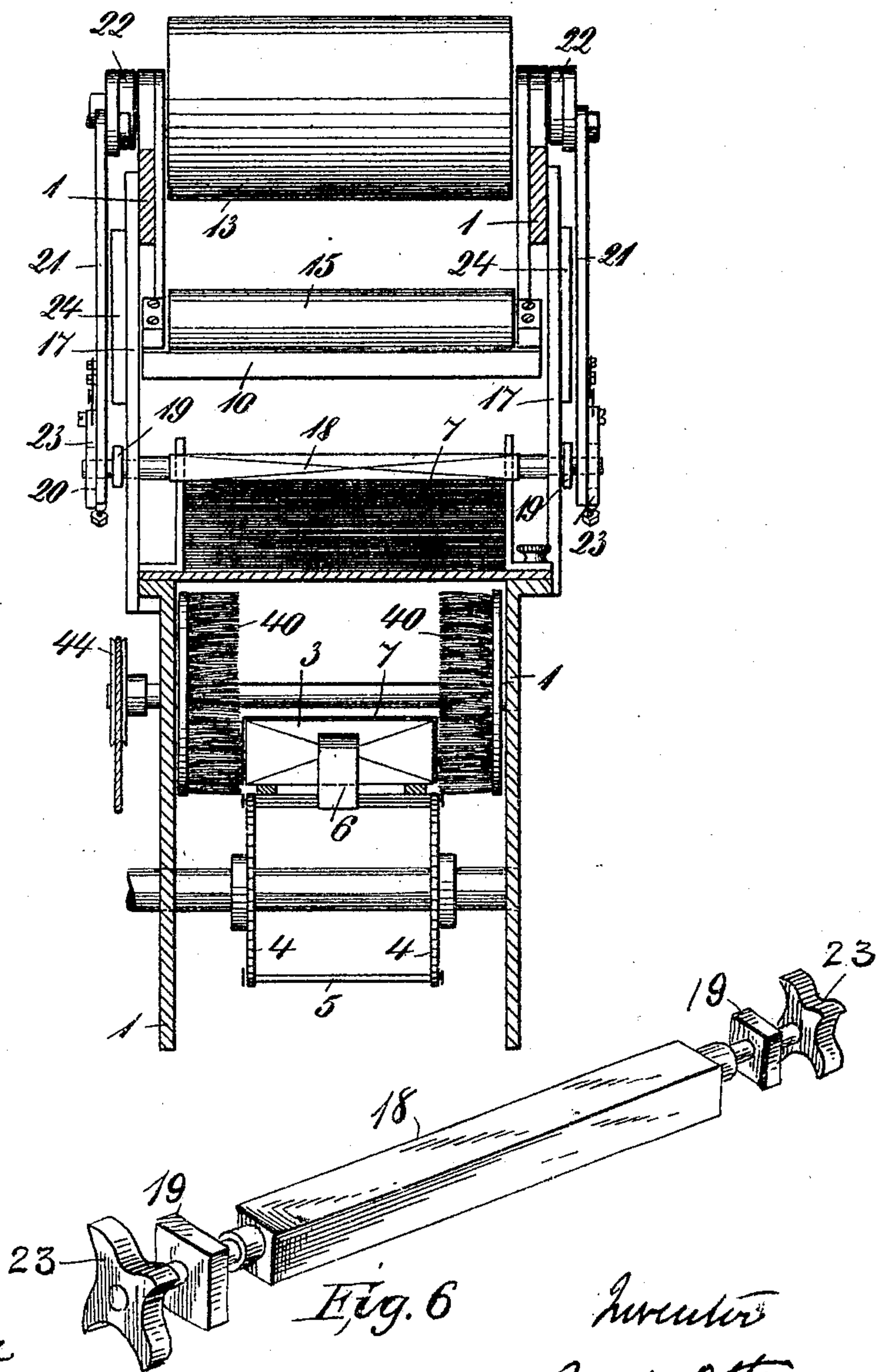
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses  
Albert Popkins  
Frank G. Breerton.

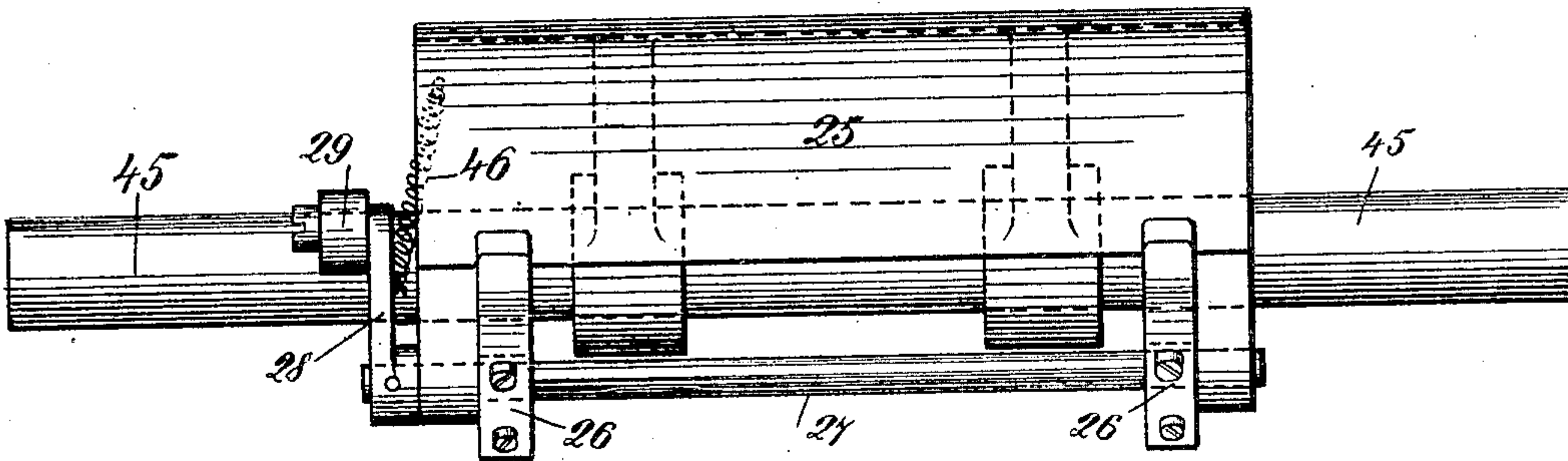
Inventor  
Carl Otting  
by *Sturtevant & Hensley*  
Attorneys



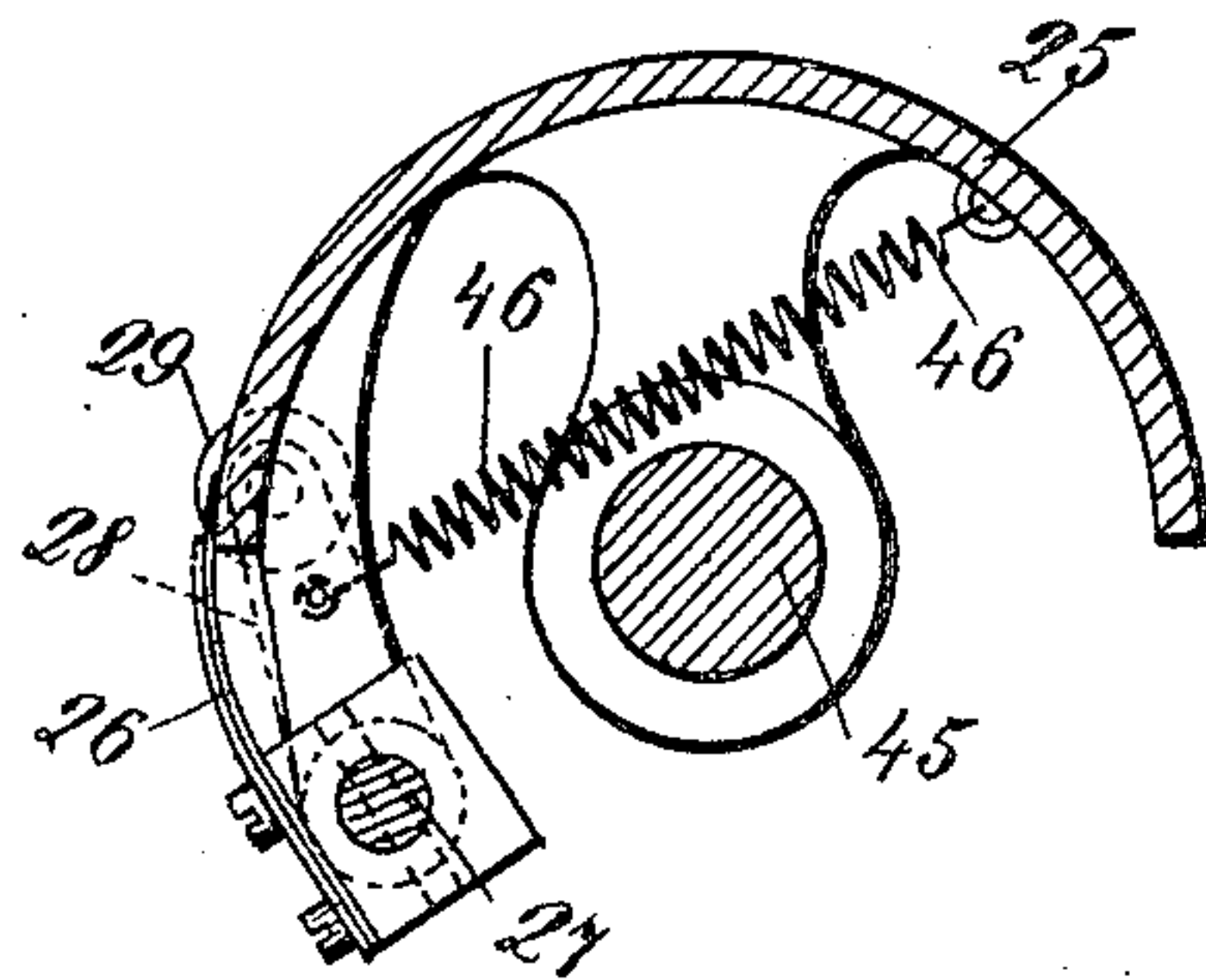
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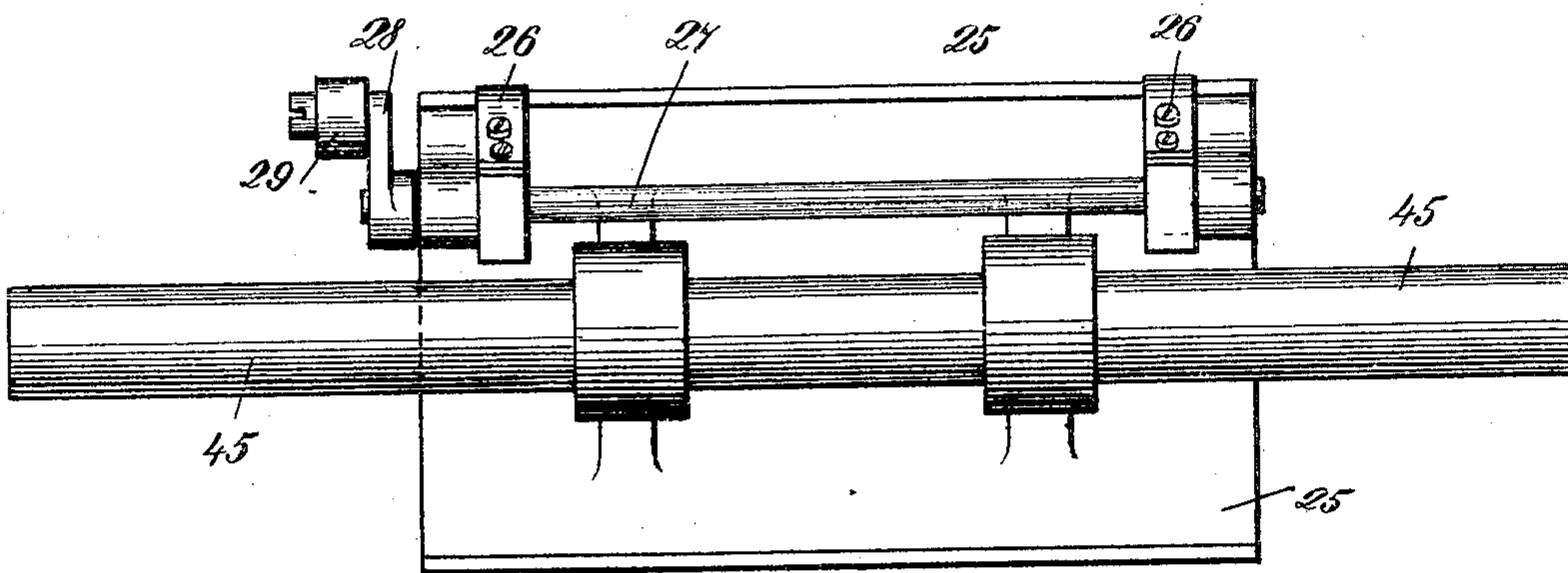
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses  
Albert Popkins  
F. G. Brunton

Inventor  
Carl Otting  
by Stewart & Hickey  
Attorneys



# UNITED STATES PATENT OFFICE.

CARL OTTING, OF LUDWIGSBURG, GERMANY.

## LABELING-MACHINE.

No. 804,168.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed November 12, 1903. Serial No. 180,895.

*To all whom it may concern:*

Be it known that I, CARL OTTING, a citizen of the German Empire, residing at Ludwigsburg, in the Kingdom of Württemberg, Germany, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a description, reference being had to the accompanying drawings and to the figures of reference marked thereon.

10 This invention relates to improvements in machines of that class employed for attaching labels to various objects, such as cardboard boxes and the like, and has for its principal object to provide a mechanism wherein labels  
15 are fed automatically from a reservoir or container and are supplied with an adhesive material, after which they are pressed into contact with the box or other article to which they are to be attached.

20 A further object of the invention is to provide a device of this character in which provision is made for the automatic feeding of single labels from a quantity which have been supplied to the reservoir or container, the operation of the machine continuing without regard to the quantity supplied or to the gradual reducing quantity resulting from the operation of the machine.

30 A further object of the invention is to provide a label-attaching machine in which labels of greater superficial area than that of the face of the box to which they are to be attached may be gummed and applied in such manner that they will adhere to the face and  
35 to the opposite sides of the box and in this manner serve as a sealing means where filled boxes are placed in the machine in readiness to be labeled.

40 With these and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended  
45 claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

50 In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a label-attaching machine constructed in accordance with the invention, a portion of the machine being shown in elevation. Fig. 2 is a transverse sectional elevation of the machine on the line A A of Fig. 1. Fig. 3 is an eleva-

tion of one of the label-conveying cylinders detached from the machine. Fig. 4 is a transverse sectional view of the same. Fig. 5 is an elevation of the label-conveying cylinder  
60 looking from a position at a right angle to that in which the cylinder is shown in Fig. 3. Fig. 6 is a detail perspective view of the label-feeding bar detached.

Similar numerals of reference are employed  
65 to indicate corresponding parts throughout the several figures of the drawings.

The machine forming the subject of the present invention, while capable of application to mechanisms of many different types,  
70 is intended especially for the labeling of filled or unfilled boxes, these being placed in a suitable reservoir and fed one by one to the machine, while labels previously supplied to the reservoir or container are fed one by one  
75 and after being gummed are pressed into contact with the boxes.

The various working parts of the machine are supported on a suitable framework 1, which is provided at one end with a reservoir or  
80 magazine 2, formed in the present instance of a plurality of vertically-disposed parallel bars flared at their upper ends to permit the convenient introduction of the boxes 3, and a number of these bars are shorter than the others  
85 in order to provide an outlet or discharge-opening at the lower end of the magazine. At the opposite ends of the frame are bearings for the support of parallel shafts carrying sprocket-wheels 4, over which runs a link belt  
90 5, forming an endless conveyer, and the belt is provided with projecting fingers 6, which engage with the successive lowermost boxes 3 and force them from the reservoir to the label-attaching devices, the finished boxes be-  
95 ing discharged from the conveyer to a suitable receptacle or to another conveying mechanism.

At a point somewhat above the upper run of the conveyer-belt is a reservoir or maga-  
100 zine for the reception of the labels 7, which are to be attached to the boxes, and to the base-plate of the magazine are secured a plurality of side arms 8, which are adjustable in accordance with the size of the labels, the side  
105 arms being secured in adjusted position by means of set-screws 9. The labels are fed one by one and conveyed, through suitable carriers, to an adhesive-applying mechanism, and thence are forced into contact with the boxes.  
110

The frame is provided with vertically-disposed slotted standards 17, which support a



transversely-disposed shaft 16, carrying a presser-roll 13, which in part acts to direct the labels to the preliminary conveying-cylinder. These standards serve also as supports for a  
 5 trough 10 for the reception of an adhesive material, and the opposite ends of the trough have bearings for the reception of an adhesive-applying roller 15, a scraper or doctor 11 being employed to remove the surplus adhesive,  
 10 and this roller receives motion through the medium of a belt from a pulley on the shaft 16.

The label-feeder is in the form of a rectangular bar 18, having rounded studs projecting from its opposite ends and extending through  
 15 the slots of the standards 17. To each end of the feeder-bar is secured a square plate 19 and a four-toothed ratchet 20, similar to that employed in jacquards. The standards serve as supports for projecting plates 24, which en-  
 20 gage one of the angular sides of the plates 19 when the feeder-bar is raised in order to prevent turning movement of the feeder-bar and to hold one of its angular faces in position to receive the adhesive from the roller 15.

At the opposite ends of the shaft 16 are secured crank-arms 22, to which are connected rods 21, the lower ends of which are slotted, and through these slots extend the rounded  
 25 opposite end of the feeder-rods 18. Each of the connecting-bars is provided with a spring-pressed pawl 23, adapted to engage one of the ratchet-wheels 20, and the construction is such that when the parts are in the lowermost position the upward movement of the connect-  
 30 ing-rod, due to the revoluble movement of the crank-arm 22 in the direction indicated by the arrow, will cause a partial revolution of the feeder-bar 18 to an extent of ninety degrees and thereafter, during the  
 35 continuance of the upward movement the bar, will be held from moving by the plates 24, and its vertical side adjacent to the adhesive-applying roll 15 will be coated with the adhesive material. On the downward  
 40 movement the parts remain in the same position, and when the connecting-bar 21 again starts on its upstroke the feeder-bar 18 will again receive a partial rotative movement to the extent of ninety degrees, and the surface  
 45 to which the adhesive has been applied during the previous movement will be forced into contact with the paper. The second surface of the bar 18 will then receive adhesive; but feeding movement of the labels will not be ac-  
 50 complished until that surface of the feeding-bar to which the adhesive was first applied has been turned to the extent of one hundred and eighty degrees, the adhesive face then being to the left of Fig. 1 and the label attached thereto  
 55 is being raised in a vertical plane.

The label is raised and at the completion of the upstroke of the feeder-bar is received by suitable grippers in the uppermost of a series of conveyer-cylinders and thence is moved  
 60 past an adhesive-applying roller and forced

into contact with the box to which it is to be attached.

In the present instance the machine is provided with three separate conveying rollers or cylinders 25, having a curved or segmen-  
 70 tal surface of an area equal to or greater than the superficial area of the label. These cylinders are mounted on shafts 45, and at the opposite ends of each cylinder are bearings for the support of a gripper-shaft 27, carry-  
 75 ing, preferably, rectangular blocks to which are secured grippers 26, adapted to engage with the edges of the labels in a manner somewhat similar to that in which the grippers of cylinder-feeding presses grip the sheets of  
 80 paper to be printed. At the opposite ends or at one end only of each shaft 27 is an arm 28, carrying at its outer end an antifriction-roller 29 for engagement with cams 30, that are rigidly secured to the frame of the machine, as  
 85 indicated by dotted lines in Fig. 1. The position of these cams and their construction are such that at the completion of the upward movement of the feeder-bar the grippers 26 of the uppermost cylinder will be open and  
 90 the label fed upward by the feeder-bar will be forced by the upper cylinder 13 into a position beneath the grippers, and after the antifriction-rollers 29 pass the cams 30 the gripper-bars will be closed by the springs 46 and  
 95 will engage with and hold the edge of the label to the surface of the cylinder.

Below the cylinder 25, which receives the labels from the feeder-bar, is an intermediate cylinder of similar construction, and below  
 100 this is a label-attaching cylinder adjacent to the upper surface of the box to which the labels are to be applied, and all of the cylinders are in such relation and their cams are so timed that when the grippers of the upper-  
 105 most cylinder release the label it will be caught by the intermediate cylinder and thence fed to the lowermost cylinder and by the latter forced into contact with the upper surface of the box, the driving mechanism being so  
 110 timed that a box will be fed to proper position to receive the label. In this connection it is to be observed that the shaft 41, which is the main driving-shaft of the machine, is provided with a gear intermeshing with an inter-  
 115 mediate gear 42, which transmits motion to the gear 43, and this in turn meshes with a gear on the shaft which drives one of the sprocket-wheels 4. The gear 42 is likewise connected to a train of gearing which extends from cyl-  
 120 inder to cylinder to the uppermost shaft 16, this form of gearing being shown partly in diagrammatic form, inasmuch as it forms no part of the present invention.

The main frame of the machine is provided  
 125 with bearings for the reception of a shaft on which is mounted a gear 34, receiving motion from the gear of the intermediate cylinder 25, and this gear intermeshes with a gear-wheel on the shaft of an adhesive-applying roller 33.  
 130



The adhesive-applying roller 33 is mounted in suitable bearings and rotates within a tank 32, containing a suitable quantity of adhesive material, a doctor or scraper being employed to remove surplus material from the periphery of the roll. The roll 33 is engaged at predetermined intervals by an adhesive-applying roller 36, mounted on one arm of a bell-crank lever 35, pivoted to the frame at its point of bifurcation, and the opposite arm of said bell-crank lever carries an antifriction-roller 38, bearing on a cam 37 on the shaft of the lowermost conveying-cylinder, the cam being so timed that when a label is in position on the lowermost cylinder to receive paste the roller 36 will move into engagement with such label and provide it with the necessary coating, while during the remainder of the time the roller 36 is kept in contact with the main adhesive-applying roller 36. The cam 37 acts only in one direction, serving to force the roller 36 into engagement with the roller 33, and movement in the reverse direction is accomplished by means of a tension-spring 39.

The parts are so timed that when a box is in proper position a label previously supplied with the adhesive material will be forced into engagement with the upper surface of the box and will be fed on by means of the conveyer-belt to a position between a pair of brushes 40. The brushes 40 are mounted on suitable disks carried by a shaft which is provided at one end with a pulley receiving motion through the intermediary of a belt 44, and the bristles of the brush project toward each other in a direction transverse of the machine, so that they may engage with the opposite edges of the label, the latter being of greater width than the box to which it is to be applied, and the edges of the label will be pressed down gradually into engagement with the sides of the box, and the movement is such that the brushes will exercise a slight spreading or stretching tendency and serve to hold the label in a perfectly flat position. These brushes rotate in the direction indicated by the arrow in Fig. 1 and press the label firmly in place against the sides of the box.

With a device of this character it is possible to rapidly apply labels of any desired size to boxes or other articles of any character which may be received within the magazine 2, and the operation is entirely automatic in its character and is not dependent on the quantity of labels supplied to the machine; nor is its work in any manner interfered with by the gradually-reducing quantity of labels in the label-containing magazine.

Having thus described the invention, what is claimed is—

1. In a label-attaching machine, a many-sided pick-up feeder-bar, means for successively applying adhesive material to the sides thereof, and means for revolving said bar.

2. In label-attaching machines, a polygonal pick-up feeder-bar, means for successively applying adhesive material to the sides thereof, means for turning the bar, and means for moving the bar between a label-supply and the adhesive-applying means.

3. In a label-attaching machine, a pick-up bar of rectangular form in cross-section, means for successively applying adhesive material to the sides thereof, a label-magazine, a means for moving the bar between the magazine and the adhesive-applying means, and a means for imparting intermittent rotative movement to the feeder-bar.

4. In a label-attaching machine, a pick-up feeder-bar, means for applying an adhesive thereto, guides for the feeder-bar, slotted carriers for said feeder-bar, and means supported by the carriers for effecting intermittent rotative movement of the bar.

5. In a label-attaching machine, a rectangular feeder-bar, an adhesive-applying means, a label-magazine, slotted guides for the bar, slotted actuating devices for said bar, ratchets carried by the bar, and pawls supported by said actuating devices for engaging the ratchets.

6. In a label-attaching machine, a label-container, a rectangular feeder-bar, slotted standards for guiding the bar, an adhesive-applying roll, a shaft, crank-arms carried thereby, slotted connecting-rods for raising and lowering the feeder-bar, pawls carried by the connecting-rods, and ratchet-wheels connected to the feeder-bar and engageable by said pawls.

7. In a label-attaching machine, a reciprocated feeder-bar, a plurality of cylinders, grippers carried by the cylinders and adapted to convey the labels from the feeder-bar to the point at which it is to be applied, and means for applying an adhesive to the label during its passage to the point of application.

8. In a label-attaching machine, a plurality of conveying-cylinders, grippers thereon, cams for controlling the movement of the grippers and permitting the passage of the label from cylinder to cylinder, and an adhesive-applying means for applying adhesive to the label while on one of the cylinders.

9. In a label-attaching machine, a plurality of conveying-cylinders having grippers for engagement with the labels, an adhesive-reservoir, a main adhesive-roller arranged therein, an intermediate roller mounted to vibrate between the main adhesive-roller and the surface of the label, and a cam for controlling the movement of the intermediate roller.

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

CARL OTTING.

Witnesses:

A. B. DRAUTZ,  
R. BRECHT.