

No. 656,789.

Patented Aug. 28, 1900.

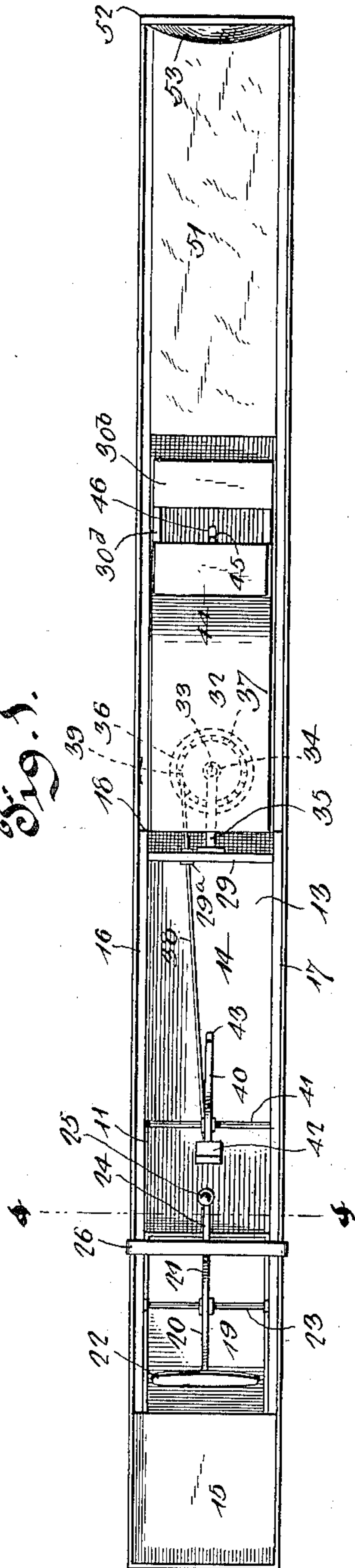
W. C. JOHNSON.  
LABELING MACHINE.

(Application filed Oct. 13, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses  
J. H. Kauterwell,  
H. J. Bernhardt

Fig. 7.

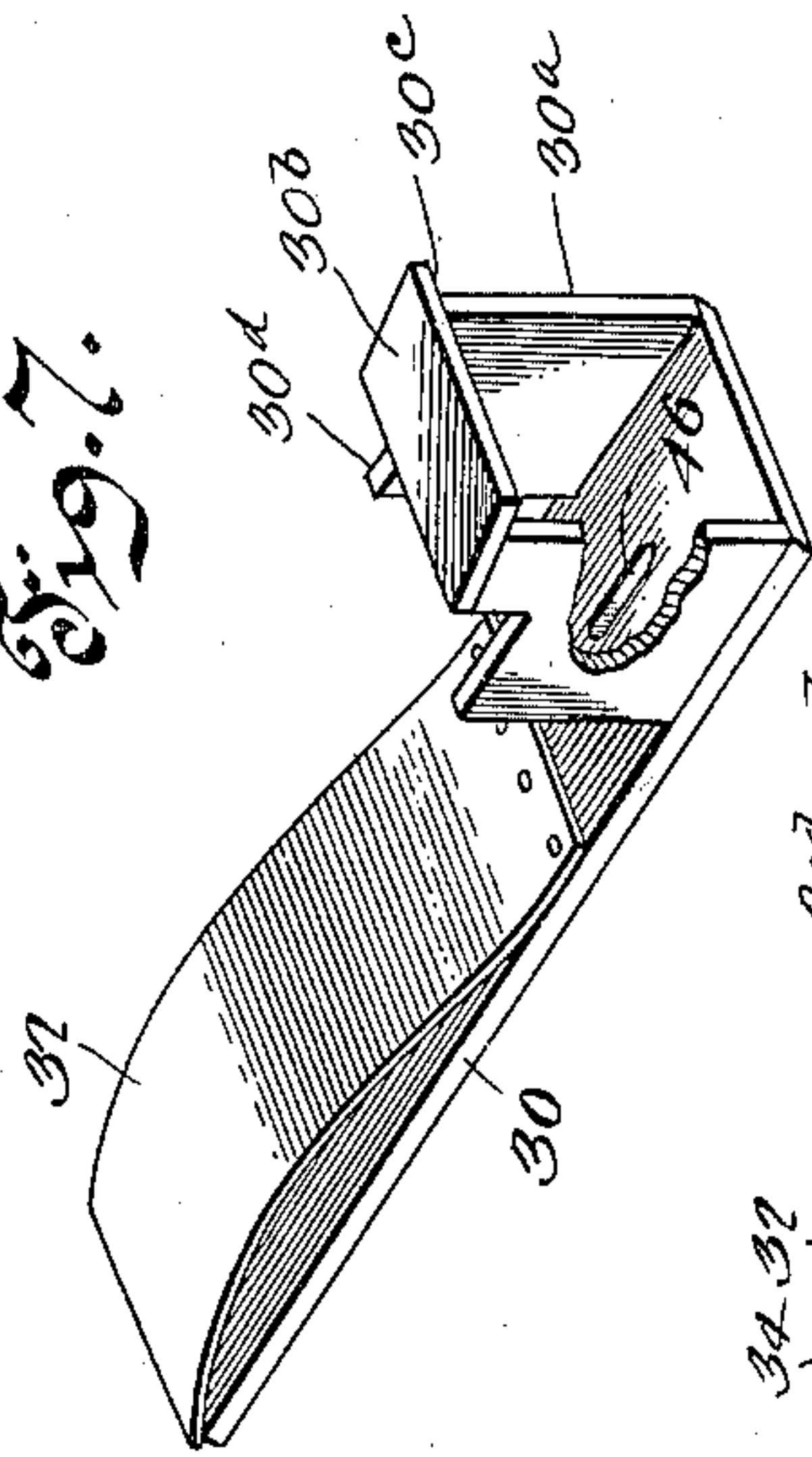
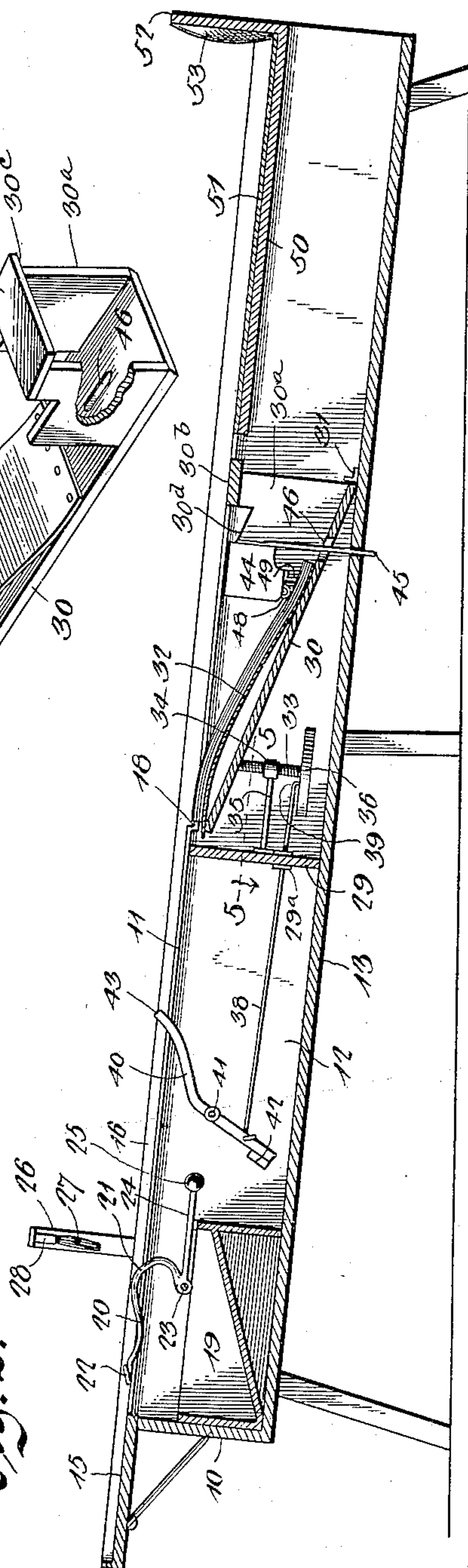


Fig. 2.



By his Attorneys, W. C. Johnson,  
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Inventor.

**No. 656,789.**

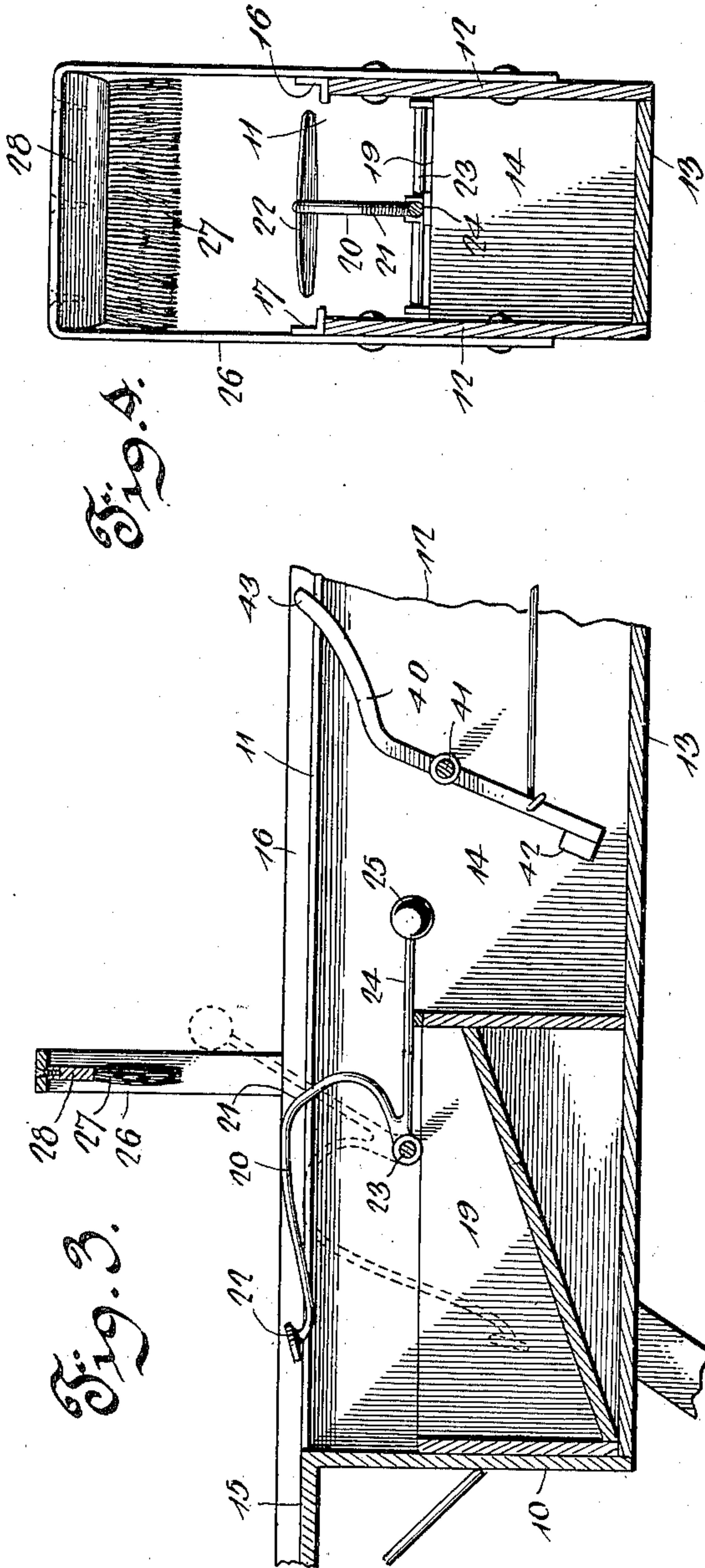
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**2 Sheets—Sheet 2.**



Witnesses  
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By *his* Attorneys, *W.C. Johnson,*  
*Chas. Snow & Co.*



# UNITED STATES PATENT OFFICE.

WALLACE C. JOHNSON, OF BOLIVAR, MISSOURI, ASSIGNOR OF ONE-HALF  
TO JAMES H. HOWE, OF SAME PLACE.

## LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 656,789, dated August 28, 1900.

Application filed October 13, 1899. Serial No. 733,527. (No model.)

*To all whom it may concern:*

Be it known that I, WALLACE C. JOHNSON, a citizen of the United States, residing at Bolivar, in the county of Polk and State of Missouri, have invented a new and useful Labeling-Machine, of which the following is a specification.

My invention relates to improvements in machines for affixing labels to cans and other cylindrical objects, such as bottles, boxes, and the like; and the leading object of the invention is to utilize the gravity and rolling motion of a cylindrical article to actuate devices by which paste is first applied to the article, the label is moved into the path of the article for one end of said label to adhere thereto, paste is supplied to the other end of the label, and the label is rolled neatly and smoothly around the can.

A further object is to provide a label-carrier adapted to contain a large number of labels, with means by which the labels are pressed into the path of the rolling article with a yielding pressure and to combine with said label-carrier a positive feed mechanism, which is actuated automatically to move said label-carrier a very slight distance each time a can passes thereover and picks up a label.

A further object is to provide novel devices by which the paste is applied to the can and to the label, the label-pasting device being movable automatically on the withdrawal of one label to apply paste to the next label in the pile or stack.

With these ends in view the invention consists in the novel combination of mechanisms and in the construction and arrangement of the various parts for service, as will be hereinafter fully described and claimed.

To enable others to understand the invention I have illustrated a preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view of a label-affixing machine constructed in accordance with my invention. Fig. 2 is a longitudinal sectional elevation thereof. Fig. 3 is an enlarged detail sectional view through the receiving end of the machine, illustrating the means for applying the paste to the rolling article, the

paste-wiper, and the article-actuated trip-lever by which the label-carrier is moved. Fig. 4 is a transverse vertical sectional elevation on the plane indicated by the dotted line 4-4 of Fig. 1. Fig. 5 is a detail horizontal sectional view taken in the plane indicated by the dotted line 5-5 of Fig. 2. Fig. 6 is an enlarged detail sectional view of the vertically-movable gravity paste mechanism by which the paste is supplied to one end of each label in the stack or pile on the label-carrier. Fig. 7 is a detail perspective view of the label-carrier removed from the machine.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The table 10 of the machine is inclined from its receiving end to the discharge end in order that the cans or other articles may roll by gravity thereon, and this table is supported at a suitable height above the floor by the legs, as shown in Fig. 2. Said table is provided with a longitudinal slot or opening 11 except at the places where the head and tail boards are secured thereto, as will hereinafter appear. The table is closed at its sides by the walls 12, which are joined together by the bottom 13, the whole forming a longitudinal chamber or inclosure 14, within which is contained the pasting devices, the label-carrier, and the devices for actuating the label-carrier.

15 designates the inclined headboard, which is arranged at one end (the upper) of the table, on which headboard the cans or other articles are intended to be placed by hand, one after the other.

An inclined runway for the cans or articles is arranged in the opening or slot of the table longitudinally thereof and between the head and tail boards of the machine. This runway consists of the flanged track-rails 16 17, which are secured to the sides 12 of the table, so as to occupy parallel relation one to the other, and these track-rails are arranged to present inwardly-extended surfaces for the travel of the articles thereon and to also present upstanding surfaces, between which the articles are confined against displacement on the machine-table, whereby the articles are guided by the runway to travel over the sev-



eral operating devices within the chamber or inclosure 14.

A paste-trough 19 is arranged in the chamber or inclosure of the table at a point contiguous to and below the inclined plane of the headboard 15, said trough adapted to contain the paste or other cementitious material which is to be applied to the articles as they travel thereover. A vibrating paste-arm 20 is supported over the paste-trough and normally disposed in the path of the rolling articles as they travel along the runway, said arm being counterpoised and adapted to be deflected by the weight of the can or other article in order to enter the trough each time the can passes over said arm, thereby keeping the paddle of the arm continuously supplied with the cementitious substance. This vibrating arm is bowed or curved at 21, and to its free end is secured a paddle 22, which may be of any suitable form or material, said paddle arranged transversely across the slot or opening 11 in the table and between the parallel track-rails of the runway, the length of the paddle being equal nearly to the length of the article. The vibrating arm is extended or curved at its heel in a downward direction for the purpose of fastening the same to a horizontal pivotal shaft 23, which is supported in suitable bearings in the sides of the table, and extending rearward from this shaft and the vibrating arm is a counterpoise-arm 24, having a drop-weight 25. This counterpoise-arm is of sufficient weight to slightly overbalance the vibrating arm and its paddle, and said counterpoised arm is adapted normally to rest upon the paste-trough or other suitable stop, as represented by full lines in Fig. 3, whereby the paddle is maintained in its position normally in the path of an article traversing the runway, while the bowed or curved part of the arm 20 is projected slightly above the track-surface of the runway. As the article rolls along the track it strikes the paddle suddenly and with sufficient momentum to depress the vibrating arm and make its curved surface lie below the track, whereby the article is free to pass the arm 20, and the paddle 22 is made to dip into the paste-trough, (see dotted lines in Fig. 3,) thus renewing the supply of paste on the paddle. The depression of the vibrating arm 20 raises the counterpoise-arm into the path of the article, as shown by dotted lines in Fig. 3, thus momentarily arresting the progress of the article along the runway; but the weight 25 now acts by gravity to return the parts to their normal positions, thus causing the bowed part of the vibrating arm 20 to strike against the article and give an impulse thereto along the runway. It is to be understood that the paddle of the vibrating arm is supplied with paste, which is applied or transferred to the article when it strikes said paddle, and as the paddle is depressed in the paste-trough each time an article passes the arm it is kept constantly supplied with the cementitious material.

In connection with the devices for applying paste to the can I employ a wiper which is supported over the runway at a suitable distance in rear of the paddle on the vibrating arm, said wiper adapted to frictionally brush against the can or article as it pursues its path along the runway in order to distribute the paste over a part of the surface of the article, and thus prevent the paste from accumulating at one point or line and oozing beyond the edge of the label which is to be applied to the article at a point farther along the runway. This wiper is carried by a yoke or frame 26, which is secured to the sides of the table, and the wiper comprises a series of bristles or other suitable material 27, the same being secured to a brush-head 28, that is attached in a suitable way to the yoke or frame. The chamber or inclosure 14 of the table is divided by a wall or partition 29, the same being equipped with a guide 29<sup>a</sup> for the reciprocating rod of the feed mechanism, associated with the label-carrier 30. Said carrier is arranged in an inclined position within the chamber or inclosure 14, so as to lie below the runway, the upper extremity of said carrier being contiguous to the abrupt depression 18 in the track-rails of said runway. The carrier is movably supported within the table—that is to say, it may be confined against endwise movement by a stop or hinge 31, which permits the free end of the carrier to be lifted slightly each time an article takes a label from the carrier, thus permitting the label to be supplied successively to the articles which traverse the runway one after the other. Said carrier is provided with a curved or bowed pressure-spring 32, which is applied or secured to the upper side of said carrier in a position for the stack or pile of labels to rest thereon, as shown by Fig. 2, said spring serving to force the labels upward with a yielding pressure. It is to be understood that a stack of labels rests on this inclined label-carrier, and to prevent displacement of the labels on said inclined carrier I employ an upright frame 30<sup>a</sup> at the lower end of the carrier. This frame is made fast with the carrier, so as to extend upward a suitable distance therefrom, thus presenting two side pieces, against which the lower edges of the stack of labels may rest. The upright frame is shown as provided with a cross-rail 30<sup>b</sup>, which is fastened to the top edges of the upright pieces 30<sup>a</sup>, and this cross-rail may have one edge thereof extended a suitable distance in rear of the uprights, as at 30<sup>c</sup>, the projecting edge affording means for the attachment of a fastening device which may be employed to loosely connect the upright frame to the table 50. As will hereinafter appear, the vertically-movable paste-can 44 is used in connection with the label-carrier, and the upright frame 30<sup>a</sup> may be provided with notches 30<sup>b</sup>, adapted to receive a projecting portion of the can, whereby the cubical area of the can may be enlarged to increase the



capacity of the paste-receptacle. This is a minor feature, however, and the construction of the can to fit in the notches is not disclosed by the drawings.

5 A positive feed mechanism is combined with the movable label-carrier for the purpose of gradually lifting its free end each time a label is drawn therefrom by the articles passing along the runway. This feed mechanism includes as one element thereof a fine-threaded feed-screw 33, which works in a nut 34, attached to a supporting-arm 35, the latter being fixed to the partition 29. The feed-screw is supported in a vertical position for 15 its upper end to engage with the label-carrier in a manner to support the unconfined or free end thereof. The feed-screw is rotated or turned in its bearing-nut with a step-by-step motion as the cans or articles travel successively along the runway, and to this end I employ the feed-wheel 36, a reciprocating rod 38, and the article-actuated lever 40. The feed-wheel is made fast with the fine-threaded vertical screw, preferably at the lower end 25 thereof, and said wheel is provided with spurs, pockets, or ratchet-teeth 37. The reciprocating rod 38 is fitted slidably in the fixed guide 29<sup>a</sup> of the partition, one end of said rod having a prong or tooth 39, adapted to engage 30 with the spurs or teeth 37 of the feed-wheel. The lever 40 is fulcrumed at a point intermediate of its length at 41, so as to lie between the can-pasting device and the label-carrier. The lower arm of this lever has a counterpoise 42, while the upper arm of the lever is bent to form a nose 43, which normally projects above the track-rails, so as to lie in the path of an article traversing the runway. The reciprocating rod 38 is connected with the 40 trip-lever 40 at a point between its fulcrum and the counterpoise, and said rod communicates the motion of the lever when depressed by an object striking its nose to the feed-wheel, which in turn operates the screw to 45 slightly raise the label-carrier.

It is to be understood that as an article rolls along the runway paste is supplied to the article by the paddle on the vibrating arm, and when this article reaches the depression 18 in the runway it drops suddenly therein, so that 50 the pasted surface of the article is presented to the uppermost label in the stack or pile on the label-carrier, whereby one end of the label is applied to the article and is partly rolled thereon as it pursues its path along the runway. It is necessary to secure the free end of the label to the can, and I have provided a novel device by which paste is supplied to the end of the label which is wrapped around 55 the article, said paste-supplying mechanism acting automatically to apply the paste to one end of the labels as they are withdrawn successively from the label-carrier by the rolling objects. In carrying this part of my invention 60 into practice I provide a vertically-movable paste-can 44. (See Figs. 1 and 6.) A supporting-stem 45 is secured firmly to the rear side

of this paste-can, said stem extending below the can and fitting loosely in a slot 46, which is provided in the label-carrier 30 and may 70 be provided in the bottom of the table. The paste-can is supported by its stem over a part of the label-carrier in order to rest by gravity upon one end of the stack or pile of labels on said carrier, thus arranging the paste-can to 75 engage with the uppermost label and permitting the label to be withdrawn from the stack or pile. In its bottom the paste-can has a slot or opening 47, in which works a paste-distributing roller 48, the latter being journaled in suitable bearings on the can so as to 80 turn freely. This distributing-roller rests upon the top label of the pile or stack, and when said label is withdrawn the roller is turned in the stack, so as to present its 85 coated surface to the next label in the pile. A lip 49 is secured firmly to the under side of the paste-can in a position in rear of the roller, said lip and roller resting on the labels to maintain the paste-can in proper position 90 thereon.

50 designates a tail-board, which is secured to the table in an inclined position at the lower part thereof. This tail-board is continuous with the track-rails and its upper surface is made soft or yielding by the employment of a pad or lining 51. A stop or abutment 52 occupies a vertical position at the 95 rear extremity of the tail-board, said abutment having a cushioned surface 53, against which the articles are adapted to impinge previous to their removal by hand from the machine. 100

The operation may be described briefly as follows: The article is placed on the headboard, so as to roll by gravity thereover and 105 along the runway. The article strikes against the paddle which applies the paste to the surface thereof and the wiper distributes the paste over the surface of said article. As it 110 pursues its course along the runway the article strikes the lever 40 to actuate the feed mechanism for the label-carrier, the tail end of the label on said carrier being pasted from the gravity-actuated can 44. The rolling article drops at the depression 18 upon the label 115 with sufficient force to insure the adhesion of said label to the pasted surface of the article, and as the article pursues its path along the runway it rolls the label partly around the 120 same and withdraws the pasted free end from the gravity paste-can. The rotation of the article over the lined surface of the tail-board completes the wrapping and application of the label to the article. It is to be understood that the articles are placed one after the 125 other on the headboard, and they are removed in like manner from the tail-board.

The machine may be used for labeling cans, bottles, boxes, and other cylindrical articles, 130 and its moving parts are actuated entirely by gravity—that is to say, without the employment of power-driven appliances—the weight and fall of the rolling article being



relied upon solely for the actuation of the movable devices. Any desired number of labels may be supplied to the label-carrier. The labels are supplied automatically and  
 5 are fixed in straight proper condition on the articles, the paste not being visible on the outside of the label. The machine being entirely automatic it only requires the services of attendants to place the articles on the head-  
 10 board and remove them from the tail-board.

Changes may be made in the form and proportion of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not de-  
 15 sire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

20 1. In a can-labeling machine, the combination of an inclined runway, a paste-trough located beneath the runway, a vibrating arm carrying a paddle located in the path of the cans and adapted to be thrown by the same  
 25 into the paste-trough said arm being provided with a bowed portion extending above the bottom of the runway and arranged to engage and increase the speed of the cans, and a counterpoise-arm connected with the vi-  
 30 brating arm and slightly overbalancing the same, substantially as and for the purpose described.

2. In a can-labeling machine, the combination of an inclined runway, a paste-trough ar-  
 35 ranged beneath the same, a vibrating arm carrying a paddle and adapted to swing into the paste-trough, said vibrating arm being provided with a bowed portion extending above the bottom of the runway and ar-  
 40 ranged to engage and increase the speed of the cans, a weighted counterpoise-arm connected with the vibrating arm and overbal-

ancing the same and normally resting upon and supported by the paste-trough, a movable label-carrier, a lever arranged in the  
 45 path of the cans and located adjacent to the vibrating arm and adapted to be engaged by the cans immediately after their speed has been increased by the said vibrating arm, and mechanism positively connected with the  
 50 lever and operated by the same for gradually raising the label-carrier, substantially as described.

3. In a can-labeling machine, a vertically-movable paste-receptacle having a slot in its  
 55 bottom, a roller journaled in said receptacle and working freely in the slot, a bearing-lip arranged at one side of said roller and fixed to the bottom of the receptacle, and a guide-stem fastened to the receptacle and extend-  
 60 ing below the same, in combination with a runway, a can-pasting mechanism thereon, and a label-carrier having one end fitted beneath the movable paste-receptacle, substantially as described. 65

4. In a can-labeling machine, the combination of a runway, a vertically-movable label-carrier provided with a slot, a vertically-movable paste-receptacle supported by the label-carrier and adapted to rest upon the lower  
 70 ends of the labels and open at its bottom, a guide-stem depending from the paste-receptacle and extending through the slot of the label-carrier, and a bearing-lip depending from the paste-receptacle and located in rear  
 75 of the slot or opening of the same, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALLACE C. JOHNSON.

Witnesses:

H. J. GRIFFIN,  
 H. F. SCHULTZ.