

F. O. WOODLAND.
GLUE SUPPLY MECHANISM FOR LABELING MACHINES.
APPLICATION FILED DEC. 19, 1910.

1,056,141.

Patented Mar. 18, 1913.

4 SHEETS—SHEET 1.

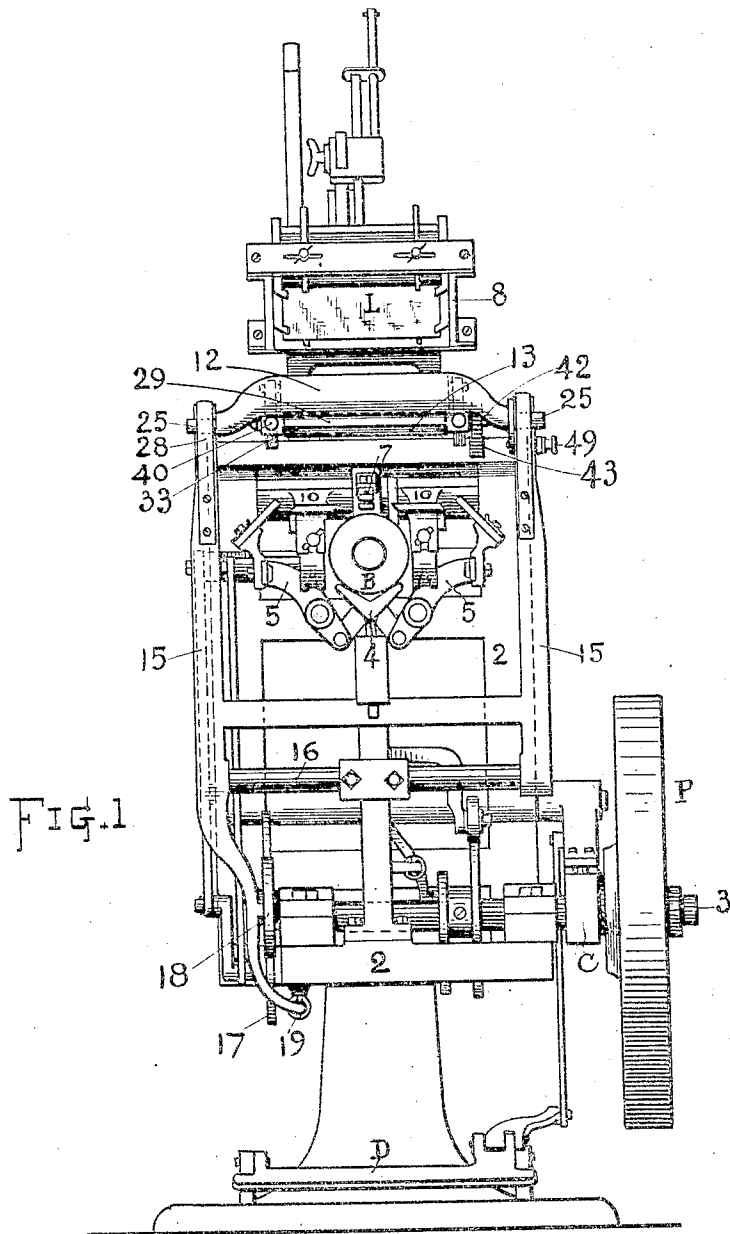


FIG. 1

Inventor

Witnesses

Flourens Holbrook
Ella P. Plenus

Frank O. Woodland
by Chas. H. Burleigh

Attorney

F. O. WOODLAND.
GLUE SUPPLY MECHANISM FOR LABELING MACHINES.
APPLICATION FILED DEC. 19, 1910.

1,056,141.

Patented Mar. 18, 1913.

4 SHEETS—SHEET 2.

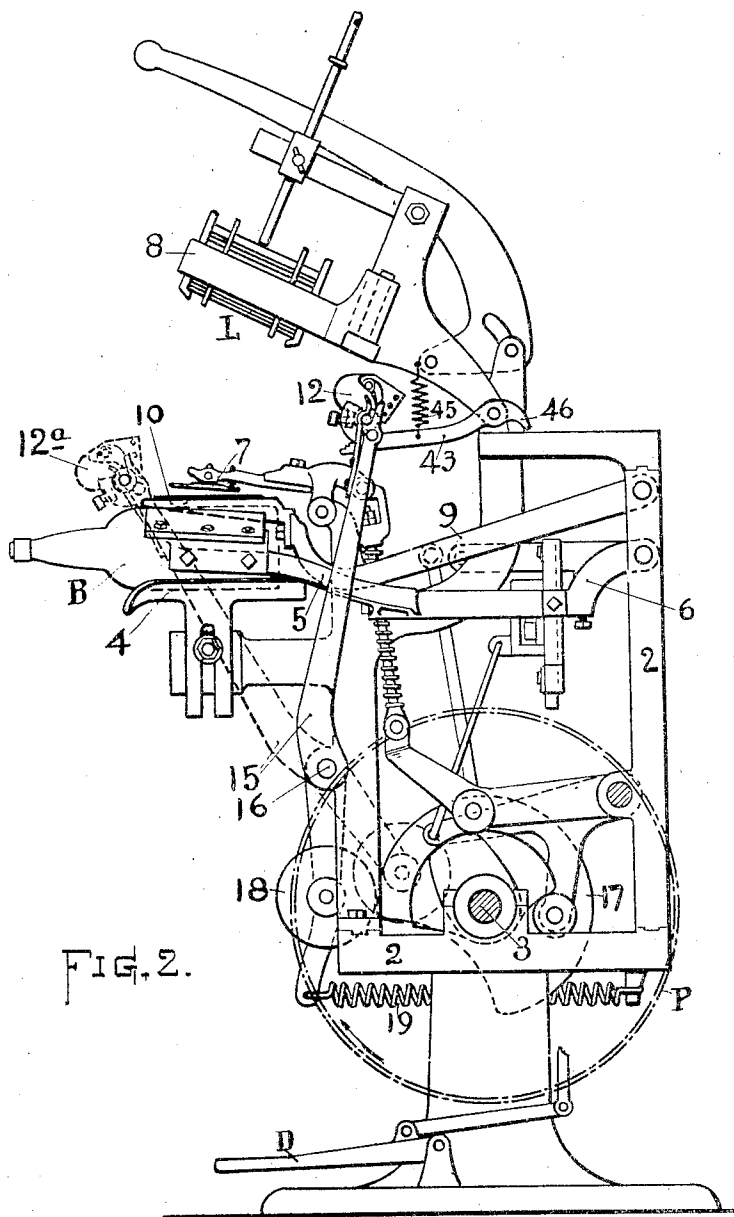


FIG. 2.

Inventor

Frank O. Woodland.

Witnesses

Florence Holbrook.

Ella P. Glenus

By Chas. H. Burleigh

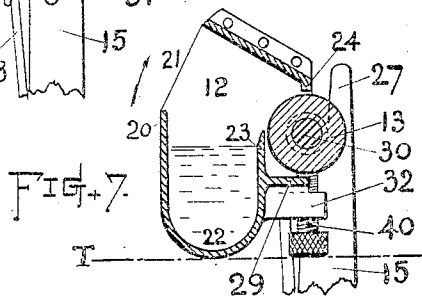
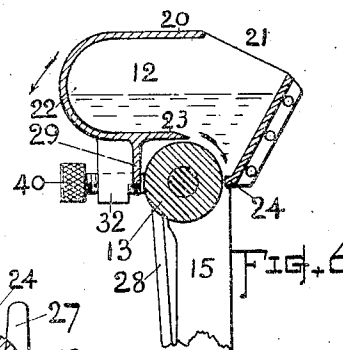
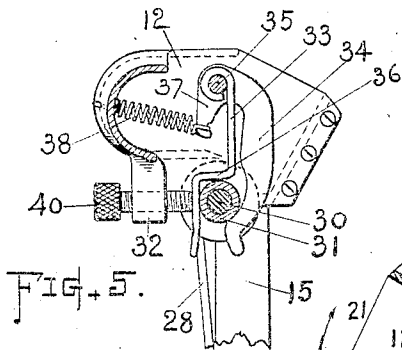
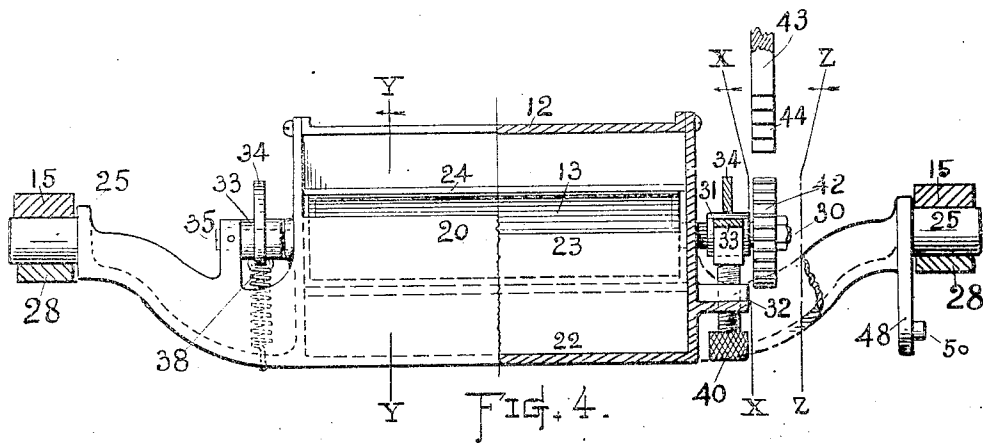
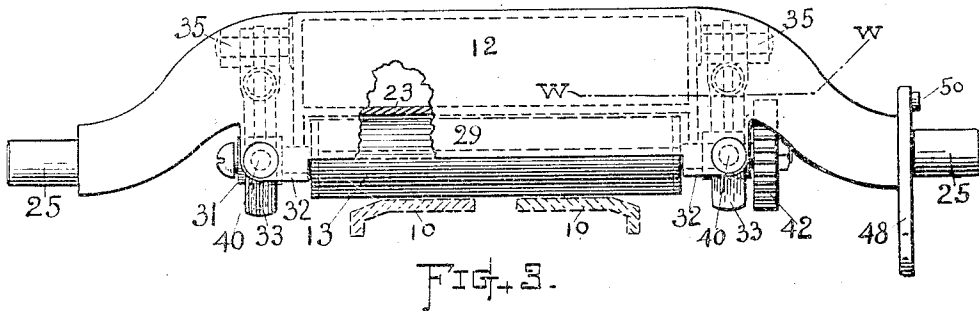
Attorney

F. O. WOODLAND.
GLUE SUPPLY MECHANISM FOR LABELING MACHINES.
APPLICATION FILED DEC. 19, 1910.

1,056,141.

Patented Mar. 18, 1913.

4 SHEETS—SHEET 3.



Witnesses.

Florence Holbrook.
Edna C. Plim

Inventor.

Frank O. Woodland

By Chas. H. Burleigh
Attorney.

F. O. WOODLAND.
GLUE SUPPLY MECHANISM FOR LABELLING MACHINES.
APPLICATION FILED DEC. 9 1910.

1,056,141.

Patented Mar. 18, 1913.

4 SHEETS—SHEET 4.

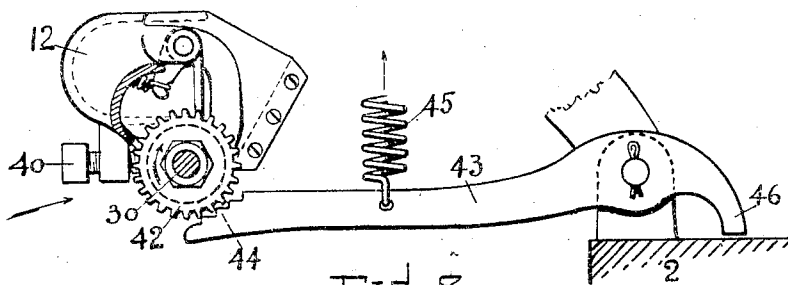


FIG. 8.

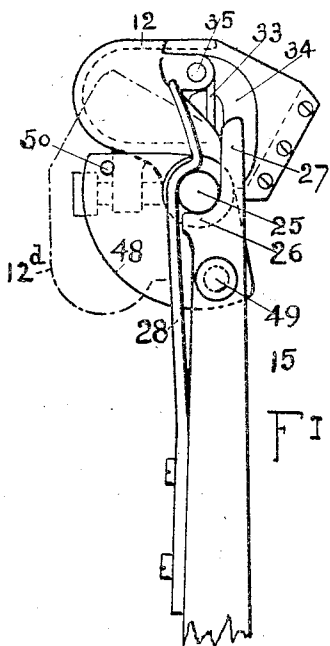


FIG. 9.

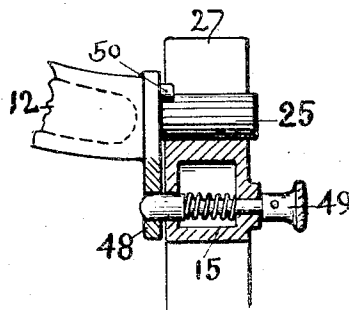


FIG. 10.

Witnesses.

Florence Holbrook.
Ella P. Glenus.

Inventor.

Frank O. Woodland.

By Char. H. Burleigh

Attorney.

UNITED STATES PATENT OFFICE.

FRANK O. WOODLAND, OF WORCESTER, MASSACHUSETTS.

GLUE-SUPPLY MECHANISM FOR LABELING-MACHINES.

1,053,141.

Specification of Letters Patent. Patented Mar. 18, 1913.

Application filed December 19, 1910. Serial No. 598,094.

To all whom it may concern:

Be it known that I, FRANK O. WOODLAND, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Glue-Supply Mechanism for Labeling-Machines, of which the following is a specification, reference being made therein to the accompanying drawings.

My present invention relates to an improved means for supplying glue, or similar semi-liquid adhesive substance, to the surfaces of the pickers or glue-applying plates in labeling machines; the object being to provide a convenient and efficient mechanism, comprising a glue-box or reservoir adapted for containing the supply of glue or adhesive substance, and having a bottom-delivery glue-distributing roller arranged therein, with means for regulating the relative adjacency of the roller surface to a gage-lip formed on the glue-box, as more fully hereinafter explained.

Another object is to provide an axially supported glue-box combined with a backwardly and forwardly oscillating carrier, and a glue-distributing roller; said glue-box formed as a pocket and adapted to be tilted or tipped down for diverting the contained glue away from the exit and distributing roller.

Another object is to provide a tilting glue-box with a guard or flange for retaining the surplus glue from the roller when said glue-box is in tilted position.

Minor objects and features of my invention are set forth in the following detailed description, the subject matter claimed being hereinafter definitely specified.

In the accompanying drawings, Figure 1 represents a front view, and Fig. 2 a side view of such parts of a bottle-labeling machine, having my improved glue-box mechanism applied thereto, as will illustrate the nature of my invention. Fig. 3 is a front view of the glue-box mechanism separate from the machine, and on a somewhat larger scale. Fig. 4 is a half-plan, half-horizontal section at line W W on Fig. 3, showing a preferred construction of the glue-box and glue-delivering roller. Fig. 5 is a transverse vertical section at line X X on Fig. 4, showing the means for connecting the reservoir and roller. Fig. 6 is a transverse section at line Y Y on Fig. 4. Fig. 7 is a similar section showing the glue-box as at tilted or tipped

down position. Fig. 8 is a section at line Z Z showing a means for rotating the glue-distributing roller. Fig. 9 is an end view showing the preferred manner of mounting the glue-box upon the carrier, and Fig. 10 is a detail sectional view of means for retaining the glue box in upright or normal working position.

The term "glue" as employed in the present specification and claims, is intended to include glue, paste, gum, mucilage, or any equivalent semi-liquid adhesive material or substances, such as may be employed for sticking or attaching labels upon bottles or packages.

Referring to the drawings, Figs. 1 and 2, the numeral 2 indicates the frame of a labeling machine of the class in which my improved glue-supply mechanism is more especially designed to be employed; 3 indicates the operating shaft mounted in bearings on said frame, and provided with suitable cams, cranks, or other means for actuating the several working mechanisms in their proper order; power being applied to said shaft by a wheel or pulley P controlled by a stop-clutch C and treadle D in usual manner. 4 indicates the package-supporting rest; 5 the wiper-arms, mounted upon the wiper-carrier 6 to move up and down and combined with means for swinging the arms and wipers laterally. 7 denotes the grip-device, 8 the label-supply holder for containing the pack of labels L, and 9 the upwardly and downwardly movable picker-carrier having secured thereon the glue-applying pickers 10 that adhesively take the labels, one at a time, from the bottom of the pack L upon the label-holder, and present them adjacently above the bottle B or article to be labeled, which is laid upon the rest 4 preparatory to the label being clamped by the grip-device, and then affixed to the article by the action of the wipers.

The above named parts, in their construction and mode of operation, have been set forth and specifically described in a separate application for Letters Patent; and in much as their nature and relative arrangement will be understood from the annexed drawings, in so far as my present invention is concerned, said above named parts need not be more particularly here described in detail, since they represent any suitable construction of labeling machines with which my present invention may be combined and

employed. But my present invention relates to the novel glue-supplying mechanism and its combination with a labeling machine for operation substantially as will now be described.

In accordance with my invention the means for distributing glue upon the faces of the pickers 10 consists of a top-charged bottom-delivering glue-box or reservoir 12 and a glue-distributing roller 13 arranged in the bottom thereof, and both mounted upon a backwardly and forwardly movable carrier, preferably consisting of a pair of upwardly projecting swinging arms 15 pivotally fulcrumed at 16 upon the frame 2, and actuated to carry the glue-box and roller from the position shown in full lines to the position indicated by dotted lines 12^a on Fig. 2, and vice versa, passing it across the faces of the pickers as it travels rearward. Said carrier is actuated by a cam 17 mounted upon the operating shaft 3, and engaging a stud-roller 18 mounted upon an extension of one of the carrier-arms, and a reaction spring 19 that yieldingly presses the stud-roller against the face of the cam; or other approved actuating means may be employed whereby the carrier is oscillated to carry the glue-box, together with its glue-distributing roller, back and forth beneath the label-holder and above the pickers. This glue-box consists of an open-bottom reservoir or container, which is best formed with a forwardly protuberant, U-shaped pocket 22; (see Figs. 6 and 7) an inclined back wall and upright end walls. The glue-containing chamber corresponds approximately with the length of the roller 13, one side of which occupies the space or opening in the lower part of the glue-box, as illustrated, and is axially combined therewith for bottom-delivery of glue or adhesive material, directly upon the upper faces of the pickers. The top of the glue-box extends rearward over the interior, as at 20, leaving an open space 21 for charging, while its under part extends rearward to or beyond the center of the roller 13, forming an approximately horizontal plate or shelf 23 that lies tangentially over, and adjacent to, the top of the roller, comparatively close thereto, but with an amount of clearance space approximately equal to or slightly more than the thickness of the film of glue that is carried on the surface of the roller. This plate or shelf is best made with a downwardly beveled, thin or acute edge. The lower edge of the back wall of the reservoir is inwardly offset toward the face of the roller, forming a gage-lip 24 that extends longitudinally along the interior of the reservoir at about the level of the axis of the roller, and serves for gaging the thickness of the film of glue that is taken out by the roller. The tangential shelf 23 supports much of the weight of the mass of glue in-

stead of its being borne wholly upon the roller; thus relieving the roller to a considerable degree from friction and drag of the mass; while at the same time it directs the flow of the glue rearward beyond the tangential junction, thereby avoiding tendency of the glue to pass out between the shelf and roller while the glue-box is in working position. It also allows the glue that remains upon the face of the roller, after charging the pickers, to drag back into the interior of the glue-box at the under side of the shelf as the roll revolves.

The extended end portions of the glue-box are offset or curved into approximate alignment with the roller axis, and provided with journals 25; and the glue-box, together with the roller 13, are axially mounted upon the carrier-arms 15, which latter are provided with seating shoulders 26 and back projections 27 (see Fig. 9) which support the axis journals, and with springs or holding devices 28 whereby the glue-box and glue-distributing roller are detachably retained upon the carrier in a manner that will permit of the glue-box being tipped over or tilted forward about an axis approximately coincident with the roller axis, to an idle position, as shown in Fig. 7, or dotted line 12^a Fig. 9, causing the mass of semi-liquid glue or adhesive substance contained in the reservoir to be diverted from the exit and roller surface and to settle down into the pocket portion 22 of the glue-box; or to be tilted up into normal working position, as shown in Figs. 1, 2, 3, 5, 6 and 9. The shoulders 26 and holding devices 28 can be either at the front or rear of the back-projections 27, as preferred.

Upon the exterior of the bottom of the glue-box, and extending along the front of the roller, adjacent to but not in contact therewith, I provide a depending flange or member 29, that may be made integral with the body of the glue-box or attached thereto, and which assumes an approximately horizontal position beneath the roller when the glue-box is tilted down to idle position, and which serves as a guard to catch any glue that may come from the roller while at idle position; and then, when the glue-box is turned upright it feeds such glue onto the roller surface to be carried beneath the tangential shelf into the glue-box when the roller is again in operation. The projecting ends of the roller axle 30 are each provided with a tubular bushing or sleeve 31 within which the axle can freely rotate.

Bearing members or screw-holding bosses 32 are formed on the glue-box at the ends of the roller space. At each end of the glue reservoir there is arranged a pair of fingers 33 and 34 mounted on a suitable pivot stud 35 in connection with the glue-box and depending therefrom to embrace the roller.

axle bushing. One of said fingers, 33, is best formed with an offset or shoulder 36 (see Fig. 5) and the other, 34, with a suitable engaging lug or curvature near its lower end. The latter finger is provided with a spring-connecting member or hook 37, and a pull spring 38 is connected therefrom to a suitable part of the glue-box frame; said spring being strained for pressing the two fingers toward the bearing member 32 and for closing the fingers together upon the axle or bushing, thereby connecting the glue-box 12 and glue-distributing roller 13 in coacting relation with each other.

An adjusting screw 40 is threaded in each of the bearing-members 32, its end impinging against the depending portion of the finger 33 in front of the roller-axle. Said screw is provided with a suitably formed head, preferably a checked or corrugated thumb-head, whereby it can be conveniently turned in or out for varying the relation of the glue-box and roller in respect to each other and thereby regulating the space between the gage-lip 24 and face of the roller 13, to cause a thicker or thinner film of glue to pass out upon the roller for distribution upon the face of the pickers. The set screws 40 are preferably formed of such size and arranged in such relation to the forwardly protuberant portion of the glue-box, that the ends of the screws and the rounded portion of the reservoir serve as feet for standing the glue-box upon a table or bench (see dot and dash line T on Fig. 7) when removed from the machine, and with the glue contents diverted from the roller. This is a feature of considerable convenience in practice, since the removal of a glue-box for cleaning, or otherwise, is of frequent occurrence in the management of labeling machines.

The glue-box and roller are best arranged with the axis of the roller located approximately in alinement with the axis of the glue-box journals; but there may be a limited amount of deviation in their alinement without materially affecting the successful operation of the mechanism.

In some instances the roller axle may be extended to form the support for the glue-box and roller upon the carrier-arms in lieu of the journals formed on the box. In such instances tubular sleeves or bushings are employed upon the roller axle for seating against the shoulder 26 and spring-catch device 28 of the carrier.

A toothed gear, pinion or ratchet-wheel 42 is arranged upon the axle at one end of the roller to engage with a rack or means for rotating the roller as the carrier swings the glue-box backward or forward. Said means preferably consists of a pivotally supported bar or projecting member 43 (see Fig. 8) having a series of offset steps 44

that engage with the teeth of the gear 42 and rotate the roller 13 when the carrier moves in one direction, but releases when the carrier moves in the opposite direction. A spring 45 is provided for yieldingly holding the bar to its work, and a stop member 46 for limiting its upward movement.

A suitable sector member or flange 48 having a recess therein, is arranged in connection with the glue-box or its supporter, and a retractable engaging device 49 is provided and adapted to interlock with said recess for retaining the glue-box in upright or normal working position in connection with the oscillating carrier 15, and with the pocket portion of the reservoir projecting forward or approximately horizontal, as in Fig. 6, so that the contained glue flows down upon the roller, and out past the gage-lip 24. Said engaging device, as shown in the present instance, is made as a spring-pressed bolt (see Fig. 10) having a head whereby it can be conveniently drawn back to release the engagement and permit of the glue-box being tilted forward, as in Fig. 7, or dotted line 12^a on Fig. 9, when the machine is to stand idle for some time, thus diverting the contained glue away from the roller and preventing delivery of glue through the exit space while the machine is out of action. A stud 50 is fixed in the flange for limiting the tilting movement by its contact with the carrier arm.

The form of the glue-box and its relation to its supporting axis upon the swinging carrier is preferably such that if the glue-box chances to be in forward tilted position when the machine is started, no injury will occur; as the contact of the glue-box with the pickers will primarily tilt the glue-box into upright or working position, and the operation will proceed in the same manner as though the glue-box was upright before the starting of the machine.

I am aware that in practising my invention changes may be made in the form and details of construction by those skilled in the art, without departure from the nature and scope of the invention as expressed in the claims. I do not, therefore, wish to be limited to the special form and details shown and described.

I claim and desire to secure by Letters Patent—

1. A glue-supply mechanism for distributing glue or adhesive substance upon a moving glue-receiving surface in a machine, comprising a movably supported bottom-delivery glue-box, a glue-distributing roller arranged in said glue-box, yieldable means detachably connecting said roller and glue-box, devices for regulating the discharge of glue by said roller, and a backwardly and forwardly movable carrier supporting said glue-supply mechanism, and means for op-

erating said carrier synchronously with the movement of the glue-receiving surface, and means for intermittently rotating said roller.

2. In a machine for the purpose specified, a glue-distributing roller, a tiltable glue-containing reservoir surmounting said roller and having pivotal connection with the roller axle, the axis of the tilting action of said reservoir being approximately coincident with the axis of said roller, a backwardly and forwardly movable carrier upon which said roller and reservoir are together axially supported, and means for retaining said tiltable reservoir in upright or working relation, and releasing the same for downward tilt when the machine is idle.

3. In a machine of the class described, a glue-box comprising an open-top reservoir having an inwardly lipped back wall, a forwardly protuberant front wall terminating in rearwardly directed shelf portions at its top and bottom edges and inclosing an approximately U-shaped pocket, and the transverse end walls with extended offset end-members provided with supporting journals, said reservoir being disposed eccentric to the axial line of its said journals, and having a delivery outlet along its under side, a glue-distributing element controlling said outlet and arranged with its axis approximately in axial alignment with the supporting journals, said glue-box being adapted for oscillative adjustment about the axial line and glue-distributing element, to carry said pocket from horizontal position to depending position, and vice versa, for the purpose set forth, and means for retaining the parts as adjusted.

4. In a glue-supply mechanism for labeling machines, in combination, substantially as set forth, a glue-distributing roller, a glue-box therefor tiltable surmounting said roller, said glue-box having a bottom opening that embraces a portion of the face of said roller, yieldable devices connecting the glue-box with the roller axle, projecting journals for mounting said glue-box upon a carrier, approximately in common axial alignment with the roller axis, and means for adjusting said glue-box in lateral relation to said roller.

5. In a machine of the class described, the combination of the gluing roller having an extended axle, tubular bearing sleeves therefor; a glue-box having an open bottom with a gage-lip that matches the side of said roller, said glue-box provided at its ends with bearing-members, and pivoted oppositely disposed yielding fingers, for mounting and retaining said roller-axle bearing-sleeves in connection therewith, adjusting screws arranged in said bearing-members for regulating the space between the gage-lip and face of the gluing-roller.

6. In a glue-supply mechanism for label-

ing machines, a glue-box comprising a forwardly protuberant reservoir having a bottom that extends rearward as an overlying shelf adjacent to the top of the glue-distributing roller, an opposite wall terminating with a gage-lip, with intervening roll-charging space between the shelf and gage-lip, a glue-distributing roller occupying said space and partially beneath said shelf, bearing supports that detachably retain said roller in connection with the glue-box, and bearing adjusting means for regulating said roller within the glue-box to gage the thickness of the film taken by said roller.

7. In a glue-supply mechanism for labeling machines, a reservoir or glue-box, comprising a forwardly protuberant pocket with rearwardly extending top and bottom plates, a space for the glue-distributing roller adjacent to the bottom plate, and a back wall having a forwardly projecting gage-lip, a glue-distributing roller fitting the space between said bottom plate and gage-lip, means for supporting said glue-box coincident with the roller axis, means for adjusting the relation of said glue-box and roller in respect to each other, and a catch-device for retaining said glue-box at normal working position, and releasable to permit downward tilt of said glue-box to cause the glue to flow into its pocket portion and away from the roller surface.

8. In a machine of the class specified, a glue-distributing roller having an extended axle with bearing sleeves thereon, a glue-box including a scraper-edge, an intervening space for the face of said roller, and an overhanging wall or shelf above the roller, said glue-box detachably united with the roller-axle bearing-sleeves, bearing members provided with adjusting-screws therein for regulating the relation of the roller and scraper-edge, the under seating surfaces on said bearing members being formed to control the relative adjacency of said overlying wall to the top of the roller.

9. In a mechanism for the purpose specified, a glue-box comprising a reservoir formed with a pocket and having a bottom opening, a backwardly extending bottom plate, and a gage-lip along the rear wall; a glue-distributing roller arranged within said opening and having extended axles with tubular bushings or sleeves thereon, pivotally attached fingers at each end of the reservoir that embrace the roller-axle bushings, springs for closing said fingers thereon, extended end portions on said glue-box curvedly offset and terminating with journals approximately in alignment with the roller-axis, a swinging carrier having seats for supporting said glue-box journal, and means for detachably retaining the glue-box in working position thereon.

10. In a machine for the purpose specified,

the combination with a glue-receiving member, and the backwardly and forwardly swinging carrier arms; of an open bottomed glue-box having a delivery outlet at its lower side, a glue-distributing roller arranged in the open bottom thereof, said glue-box formed as a forwardly protuberant pocket reservoir, journals for supporting the respective ends of said glue-box upon the carrier to permit a tilting displacement of the glue-box for diverting the glue away from the roller when the machine is idle, the supporting journals being located in such relation to the reservoir that contact, when tilted, with the glue-receiving member will primarily automatically throw said glue-box into upright or normal working position.

11. In a mechanism of the class described, the combination, of an oscillating glue-box-carrier, a glue-box having projecting end journals mounted upon said carrier, a bottom delivering roller rotatably arranged within the delivery space of said glue-box, means connecting said roller and glue-box comprising pairs of pivotally attached spring-closed fingers that embrace the roller-axle, and means for releasably retaining the glue-box in working position upon said carrier, and means for oscillating the glue-box-carrier.

12. In a mechanism of the class described, a bottom-delivery glue-box, and a glue-distributing roller therein, spring-pressed attaching devices that releasably connect the roller axle and glue-box, said glue-box being provided with a scraper gage-lip along the face of the roller at approximately mid-level therewith, and at its opposite side with a shelf-like bottom member that extends tangentially over the top of the roller adjacent to the surface thereof.

13. The combination, with the tiltable glue-box or reservoir having a bottom opening, and provided with the gage-lip and horizontally disposed bottom plate, and the bottom-delivery glue-distributing roller; of a depending longitudinal flange located along the exterior of the bottom of said glue-box reservoir adjacent to, but out of contact with, the face of the glue roller, for the purpose set forth.

14. In a mechanism for the purpose specified, in combination, a tiltable mounted bottom-delivering glue-box, and a glue-distributing roller therefor, said glue-box having a bottom member that extends as a tangentially disposed shelf along the top of the roller, and a longitudinal guard member depending from the bottom of the glue-box along the front of the roller, near but not in contact therewith.

15. In a mechanism of the class specified, a tiltable mounted glue-box or reservoir formed with one outwardly-shaped wall including a pocket, a bottom exit space, and

a bottom-delivery glue-distributing roller therefor; said glue-box having an exit-gage for gaging the film of glue delivered, and provided with a guard member along the front of the roller, that serves as a glue-collecting ledge when the glue-box is tilted forward out of working position.

16. In a mechanism for the purpose specified, the combination with the bottom-delivering glue-box, and glue-distributing roller therefor, said glue-box having a bottom member with adjusting screws arranged therein; of a roller connecting means comprising for each end of the roller a pair of holding fingers both mounted upon a pivot attached to the end of the glue-box, one of said fingers formed with an offset shoulder and flat portion for engaging the roller-axle or sleeve and contacting with the adjusting screw, the other finger formed with an inward hook or curve for engaging the axle or sleeve in opposition to said first-named finger, and also provided with a spring attaching arm, and a pull spring strained between said arm and the frame of the glue-box, whereby said fingers are closed upon the axle-bearing sleeve and both fingers pressed toward the adjusting screw by the same spring action.

17. In a glue-distributing mechanism for labeling machines, a detachable bottom-delivery glue-box formed with a forwardly projecting pocket and a gage-lip along its back wall, a glue-distributing roller arranged in the bottom opening of said glue-box, and adjusting screws for regulating said roller in respect to said gage-lip; said adjusting screws and the pocket projection being arranged to serve as standing feet for supporting the glue-box and roller upon a table with the contained glue diverted from the roller and exit passage, when the glue-box is removed from the machine, substantially as set forth.

18. In a mechanism of the class described, the combination with a swinging carrier, the glue-box and glue-distributing roller, and a toothed pinion mounted upon the axle of said roller; of a pivotally supported bar provided with a series of steps or detents for engaging with said pinion, a spring that yieldingly draws the detented end of the bar toward the pinion, and a stop-device for limiting the movement of said bar by the spring.

19. In a glue-supply mechanism, a glue-containing reservoir, and a bottom-delivery glue-distributing roller therefor, said reservoir being tiltable about the roller axle; endwise extended axis journals for the support of said reservoir and roller, a pair of carrier arms having bearing devices whereon said axis journals are releasably mounted, interengaging devices for retaining said reservoir in normal working position in respect

to the carrier arms, and releasable for permitting tilt action, and means for imparting a backward and forward movement to said carrier arms.

- 5 20. In a glue-supply mechanism, a glue-containing reservoir provided with a bottom-shelf, a depending front guard, and a back wall having a gage-lip, a bottom delivery glue-distributing roller therefor dis-
 10 posed beneath said bottom-shelf between said front guard and gage-lip, and a carrier whereon said reservoir and roller are supported by pivoting members approximately
 15 in alignment with the roller axis, and releasable holding devices that retain said members in connection with the carrier.

21. In a glue-supply mechanism, a bottom delivery glue-containing reservoir having a gage-lip, a bottom-delivery glue-distributing roller therefor, yieldably swinging members
 20 that engage the roller bearings for uniting the roller and reservoir, springs acting upon said engaging member, and means for limiting the yield of said roller away from said gage-lip.

Witness my hand this 17th day of December, 1910.

FRANK O. WOODLAND

Witnesses:

CHAS. H. BURKHEAD,
 A. G. DAVIS.