F. N. YOUNG.

BOTTLE LABELING MACHINE.

APPLICATION FILED JULY 8, 1907.

949,368.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 1.

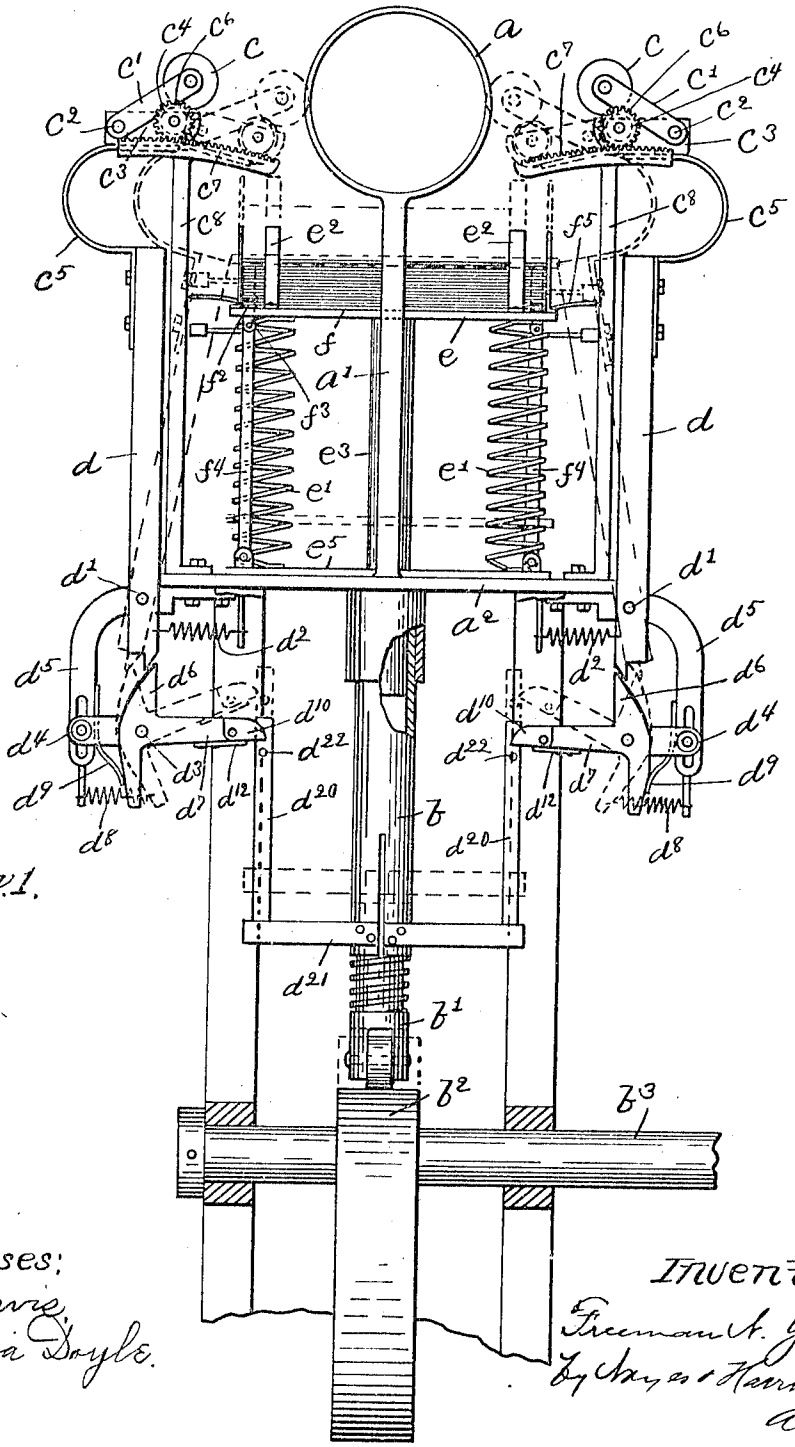


Fig. 1.

Witnesses:
H. B. Davis.
Cynthia Doyle.

Inventor:
Freeman N. Young
By Hayes & Harriman
Attys

F. N. YOUNG.

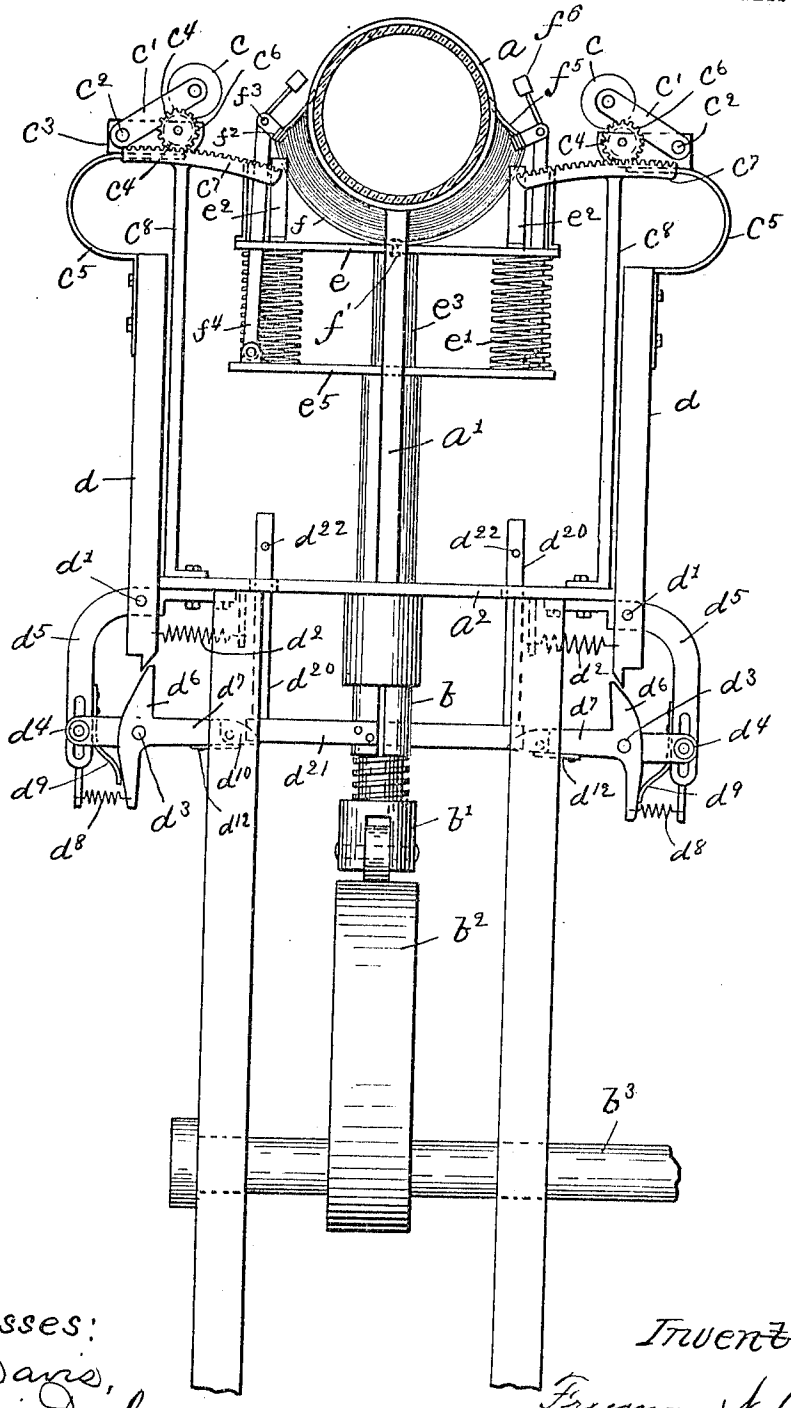
BOTTLE LABELING MACHINE.

APPLICATION FILED JULY 8, 1907.

949,368.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 2.



Witnesses:
H. B. Davis,
Cynthia Doyle

Fig. 2.

Inventor:
Freeman N. Young
by Thompson Harriman
Attys

F. N. YOUNG.

BOTTLE LABELING MACHINE.

APPLICATION FILED JULY 8, 1907.

949,368.

Patented Feb. 15, 1910.

3 SHEETS—SHEET 3.

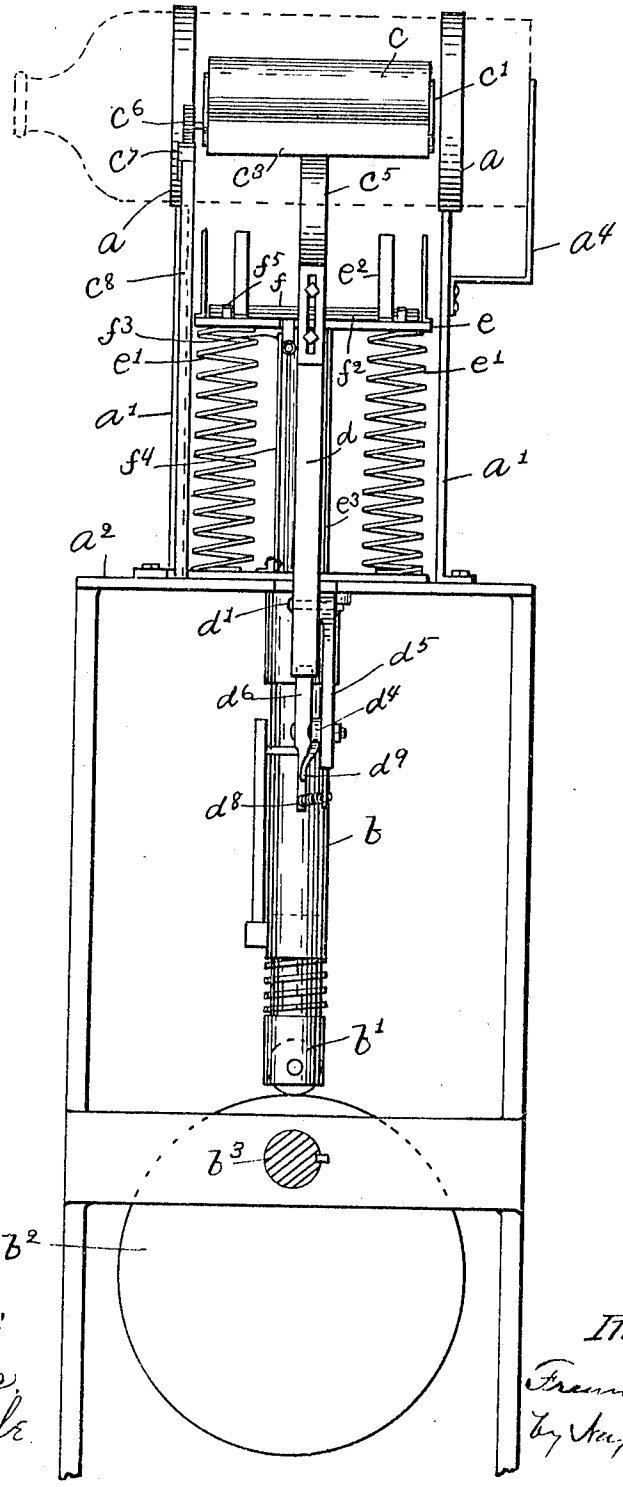


Fig. 3.

Witnesses:
H. B. Davis.
Cynthia Doyle.

Inventor;
Freeman N. Young
by Hayes & Harrison
Attys

UNITED STATES PATENT OFFICE.

FREEMAN N. YOUNG, OF CAMBRIDGE, MASSACHUSETTS.

BOTTLE-LABELING MACHINE.

949,368. Specification of Letters Patent. Patented Feb. 15, 1910.

Application filed July 8, 1907. Serial No. 382,629.

To all whom it may concern:

Be it known that I, FREEMAN N. YOUNG, of Cambridge, county of Middlesex, State of Massachusetts, have invented an Improvement in Bottle-Labeling Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to bottle-labeling machines, and is intended as an improvement upon the bottle-labeling machine shown in my application Serial No. 328,628. In the machine shown in my said application a flexible label-supporting-and-applying device, made as a pad is provided, which receives upon it a pile of labels and which is adapted to be bent, together with a pile of labels thereon, around the bottle when applying the label thereto. It is contained in the label holder, and both it and the gumming-devices by which adhesive material is applied to the bottle before the label is applied thereto, are designed to be operated by a downwardly moving bottle, which moves by its own weight or is assisted in moving by means provided for the purpose.

My present invention has for its object to provide a stationary bottle-support by means of which a bottle is held in a fixed position while the label is being applied, also to provide means for operating the gumming-devices whereby adhesive material is deposited on the stationarily supported bottle before the label is applied to provide a label-holder containing a flexible label-supporting-and-applying pad with means for moving it, whereby the pile of labels which is placed on said pad is moved into engagement with the bottle and bent around the bottle so that the topmost label of the pile will adhere to the bottle and will remain in engagement with the bottle as the label-holder returns to its normal position.

Figure 1 shows in front elevation a bottle-labeling machine embodying this invention, the full lines representing the parts in their normal positions of rest and the dotted lines representing the gumming-devices in the act of applying adhesive material to the stationarily supported bottle. Fig. 2 is a similar view showing the parts in the position they will occupy when the label is being applied to the bottle, and Fig. 3 is a side elevation of the machine shown in Fig. 1.

The bottle-support is adapted to stationarily support the bottle in horizontal position, and, as herein shown, comprises a pair of circular frames a, a, mounted respectively on upright arms a', a', rising from a horizontal plate a^2 which forms a part of the main frame-work of the machine. The frames a, a, are located a short distance apart so as to engage the body of the bottle near its opposite ends. When designed to engage the body of a bottle having parallel sides they will occupy the same plane. An upwardly extended arm a^4 is attached to one of the supports a' which serves as a rest against which the end or bottom of the bottle is pressed, to thereby localize the bottle with respect to the labels. I do not desire to limit my invention to this particular form of bottle-support, as it is obvious that it may be otherwise constructed and adapted to stationarily support a bottle in horizontal position without departing from my invention.

The bottle, when placed in the support, is designed to have glue, paste or other adhesive material applied to it previous to the label being applied, said adhesive material being applied in two lines at opposite sides of the middle of the bottle, so that, subsequently, the label may be attached to the bottle by pressing it upon or against the bottle in order that it may be held thereon by said two lines of adhesive material. Therefore two gumming-devices, as they are herein called, are employed, which are located at opposite sides of the bottle and adapted to be moved into and out of engagement with the bottle at the proper time to deposit thereon the adhesive material. The gumming-devices each consist of an applying-roll c, journaled in a yoke c', pivoted at c^2 to the walls of a reservoir c^3, and a roll c^4, which is contained in said reservoir and which is journaled to the walls thereof in order that it may revolve in the glue which is contained therein. The applying-roll c rests by gravity upon the roll c^4, and thereby receives its supply of glue, and said roll c projects beyond the roll c^4 so as to engage the bottle when the gumming-device bearing it is moved toward the bottle. The res-

ervoirs c^3 are respectively supported upon the upper ends of C-springs c^5, which are attached to the upper ends of levers d, pivoted to the frame at d'. The levers d are moved back and forth on their pivots to move the rolls c into and out of engagement with the bottle. Springs d^2 are attached at one end to the lower ends of the levers d and at their opposite ends to the frame which act to move said levers outwardly or in a direction away from the bottle. Means are provided for engaging the lower ends of said levers, for positively moving them inward or in a direction toward the bottle, and, as herein shown, similarly constructed actuating means is provided for each lever. Said means consists of a bell-crank lever pivoted at d^3 to an arm d^4 which is adjustably connected to a depending arm d^5 on the frame. One arm d^6 of said bell-crank lever is made as a cam and arranged to engage the lower end of the lever d, and another arm d^7 thereof is extended horizontally into the path of movement of a vertically movable member by means of which said bell-crank lever is operated. As herein shown, the vertically movable member consists of an upright bar d^{20} rising from a plate d^{21} and having a pin d^{22} extended laterally from it into the path of movement of which said arm d^7 normally extends. As the bar d^{20} rises the pin thereon engages the cam d^7 and lifts it, thereupon the arm d^6 engages the lower end of the lever d and moves said lever toward the bottle. The vertically movable member d^{20} has a greater movement than is required for moving the bell-crank lever, hence the pin d^{22} passes by the end of the arm d^7 on the upward movement of the vertical movable member and thereby disengages it. As soon as the bell-crank lever is thus disengaged it is immediately returned to its normal position by means of a spring d^8 which is connected at one end to a downwardly extended arm on said bell-crank lever and at the opposite end to the depending arm d^5. The bell-crank lever when thus restored bears against a spring d^9 or other stop which may be provided for it. In order that the pin d^{22} on the vertically movable member may pass by the end of the arm d^7 of the bell-crank lever on its return movement, so as to again engage said arm on its upward movement, the end of said arm d^7 is formed or provided with a latch d^{10}, which is pivotally connected to the arm and which is movable on its pivot against the action of a spring d^{12} by the pin d^{22} on the return movement of the vertically movable member.

The means herein shown for moving the gumming-device into engagement with the bottle is simple and efficient and operates to quickly move said device into engagement with the bottle and to hold it in engagement therewith for a short period of time only, and then to immediately permit it to return to its normal position so as to be out of the way of the label-applying device when the label is being applied. As the gumming-devices are moved into and out of engagement with the bottle the rolls c^4 are or may be revolved in the reservoirs containing them, so that the applying rolls c, which bear upon said rolls c^4 will also be revolved by frictional engagement therewith. To thus revolve the rolls c^4, each roll has secured to its shaft a pinion c^6 which engages a toothed sector c^7 supported in fixed position upon an upright post c^8 which is erected on the frame. The toothed sector is so located with respect to the pinion and roll bearing it, that, as the lever d is moved on its pivot to move the gumming-device into and out of engagement with the bottle, said pinion, by its continuous engagement with said fixed sector, will be revolved, turning in one direction as the gumming-device is moved into engagement with the bottle and in the opposite direction as the gumming-device is moved out of engagement with the bottle, and the applying-roll c will be correspondingly revolved.

I do not desire to limit my invention to the particular construction of gumming-devices herein shown or to the particular means herein shown for operating them or to the particular means herein shown for revolving the roll which is contained in the reservoirs as it is obvious that they may be otherwise constructed without departing from this invention. The plate d^{21} to which the bars d^{20} are secured is made as a cross-bar and bears at each end one of said bars and as said cross-bar is moved up and down the two bars d^{20} will be correspondingly moved to operate the two gumming-devices simultaneously. The plate d^{21} is rigidly secured to a post b which is arranged to have a vertical sliding movement and said post is made tubular and has at its lower end a yielding stud b', with or without a roll thereon, which engages the edge of a cam-disk b^2 which is secured to a rotating shaft b^3. As the shaft revolves the cam-disk is turned to raise the post b and to permit it to fall, thus the gumming-devices are repeatedly operated as the shaft b^3 revolves.

My improved form of label-holder and label-supporting-and-applying device are located between the supports a', a', for the bottle-rests, and the label-supporting-and-applying device is contained in the label-holder, being located at the bottom thereof, so that the pile of labels which is placed in the label-holder rests upon said label-supporting-and-applying device. The label-holder is movable in an upward direction to

move the pile of labels into engagement with the bottle and the label-supporting-and-applying-device is adapted to be operated to bend the pile of labels around the bottle so that the topmost label of the pile may adhere to the bottle and thereby become detached from the pile as the latter returns to its normal position.

The label-holder consists of a base plate e supported in horizontal position upon springs e', any suitable number being employed, which are arranged between it and the plate e^5. The plate e is made quadrangular in shape but it may be of any other desirable shape. Several posts e^2 are erected upon the plate e, at the corners thereof or thereabout, which serve as guides for the pile of labels. The plate e is mounted upon a centrally disposed post e^3 which is supported in vertical position by a tubular post b, being contained in and adapted to move telescopically or to slide freely in said post b. The plate e^5 is secured to the top of the post b and is, therefore, moved by said post. When in its lowermost position, as shown in full lines, Fig. 1, it rests upon the frame, but when the post b is moved upward it rises with the post into the position shown in Fig. 2. As the plate e^5 is thus raised the supporting springs e' for the plate e are correspondingly raised and the plate e is raised until restrained from further upward movement by the pile of labels engaging the bottle, as will be described, and as soon as said plate e is restrained from further upward movement the supporting springs e will be compressed as the plate e^5 continues to rise.

The label-supporting-and-applying device consists of a flexible pad f, made of elastic webbing or leather or thin metal or other suitable material. It is preferably made elastic and of a shape to correspond to the shape of the label. It is placed in the label-holder and rests on top of the base plate e normally lying flat upon said plate. The pile of labels which is placed in the label-holder rests on this pad. A small pile of labels only will be employed at a time as a thick pile cannot be easily bent around the bottle. The flexible pad may be attached to the plate e at or along the middle as at f' from its front edge to its rear edge, but its ends are not attached to said plate. The opposite ends of the flexible pad are connected to pad-supports which are mounted upon the plate e^5. Each end of the flexible pad is placed between two stiff bars f^2 of wood or other material which are secured together and form a clamp for engaging the end of the pad. Two upright arms f^4 are pivotally supported on the plate e^5 and to the upper ends of said arms the ears f^3 for the clamps are pivotally connected, so that the clamps which engage the ends of the pad, are pivotally connected to supports which are connected with the plate e^5. The arms f^4 are made of a length approximately equal to the distance between the plates e and e^5, when both of said plates occupy their normal positions of rest, as shown in Fig. 1, and at such time the ends of the flexible pad are held in a plane with the intermediate portion of the pad or in other words the pad is held flat upon the plate e. The plate e is cut away to provide for the movement of the arms f^4 as the plate e^5 rises. A small pile of labels having been placed in the label-holder on the label-supporting-and-applying-pad, as shown in Fig. 1, the post b is raised by the revolving cam b^2 and the plate e^5 rises with the post carrying with it the label-holder. The parts thus move together until the pile of labels engages the stationarily supported bottle whereupon further upward movement of the label-holder is checked. The plate e^5, however, continues to rise carrying with it the arms f^4 and compressing the supporting springs e' and as the arms thus rise, independent of the label-holder, the ends of the label-supporting-and-applying pad are raised, thereby bending said pad, together with the pile of labels thereon, around the bottle. As the adhesive material has been previously applied to the bottle the topmost label of the pile will adhere thereto and will become detached from the pile as the pile returns to its normal position. To retain the labels of the pile in proper position with respect to each other while being bent around the bottle so that when the pile is permitted to again flatten, they will resume their correct positions, a set of fingers f^5 are provided at each end of the pad which are secured to the pad-engaging clamps and which are arranged to engage the opposite sides of the pile of labels when they are bent around the bottle and the clamps are turned on their pivots to provide for thus bending the pile of labels. Normally, the fingers extend outward, as shown in Fig. 1, but as the clamps are turned when operated to bend the pile of labels they are gradually turned inward until they finally engage the sides of the pile of labels, as shown in Fig. 2. To assist in turning the clamps weighted arms f^6 are connected thereto which have a normal tendency to fall and to move the fingers outward.

I do not desire to limit my invention to the particular construction of the label-supporting and applying pad or the means herein shown for operating it, when employed in connection with a stationary bottle-support.

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

1. In a bottle-labeling machine, the com-

bination with a stationary bottle-support, of a flexible label-supporting-and-applying pad adapted to receive upon it a pile of labels, a middle support for said pad and end supports for said pad, means for attaching said pad to said middle support and for connecting the ends of said pad with said end supports, means for moving all of said supports for the pad toward the bottle until the pile of labels engages the bottle and for thereafter moving the end supports relative to the middle support to bend the pad and pile of labels around the bottle, substantially as described.

2. In a bottle-labeling machine, the combination with a stationary bottle-support, of a label-holder, a flexible label-supporting-and-applying pad arranged on top of the base-plate of said label-holder, adapted to receive upon it a pile of labels, end supports for said pad, independent of the label-holder, means for moving the label-holder toward the bottle until the pile of labels engages the bottle, and means for thereafter moving the end supports of the pad to bend the pad and pile of labels thereon around the bottle, substantially as described.

3. In a bottle-labeling machine, the combination with a stationary bottle-support, of a flexible label-supporting-and-applying pad upon which the pile of labels is placed, clamps engaging the opposite ends of said pad, end supports to which said clamps are pivotally connected, and means for moving said end supports to bend the pad and pile of labels thereon around the bottle, substantially as described.

4. In a bottle-labeling machine, the combination with a stationary bottle-support, of a flexible label-supporting-and-applying pad upon which the pile of labels is placed, clamps engaging the opposite ends of said pad, end supports to which said clamps are pivotally connected, and means for moving said end supports to bend the pad and pile of labels thereon around the bottle, and means connected with said clamps for engaging the sides of the pile of labels to hold the labels of the pile in correct position with respect to each other, substantially as described.

5. In a bottle-labeling machine, the combination with a stationary bottle-support, of a flexible label-supporting-and applying-pad adapted to receive upon it a pile of labels, pivoted end-supports at the opposite ends of said pad, means for connecting the ends of the pad with said end-supports, and means for moving said end-supports to bend the pad and pile of labels thereon around the bottle, substantially as described.

6. In a bottle-labeling machine, the combination with a bottle-support, of a pair of revoluble rolls for applying adhesive material to a bottle held by said support, rolls engaged by said applying-rolls for supplying them with adhesive material, reservoirs adapted to contain adhesive material in which said supply-rolls revolve, means for moving said reservoirs and rolls toward and from each other to cause the applying-rolls to engage and disengage the bottle, and means for revolving the supply-rolls during their bodily movements toward each other to supply the applying-rolls with adhesive material from the reservoirs, the applying-rolls being revolved by the supply-rolls which they engage, substantially as described.

7. In a bottle-labeling machine, the combination with a bottle-support, of two reservoirs adapted to contain adhesive material, supply-rolls revoluble therein, applying-rolls journaled in pivoted frames and adapted to engage said supply-rolls and to be revolved by frictional engagement therewith, means for moving said reservoirs and rolls toward and from each other to cause the applying-rolls to engage and disengage the bottle, and means for revolving the supply-rolls during their bodily movement toward each other to supply the applying-rolls with adhesive material from the reservoirs, substantially as described.

8. In a bottle-labeling machine, the combination with a bottle-support, of two reservoirs adapted to contain adhesive material, supply-rolls revoluble therein, revoluble applying-rolls adapted to engage said supply-rolls and to project beyond them, means for moving said reservoirs and rolls toward and from each other to cause the applying-rolls to engage and disengage the bottle, and means for revolving the supply-rolls during their bodily movement toward each other to supply the applying-rolls with adhesive material from the reservoirs, substantially as described.

9. In a bottle-labeling machine, the combination with a bottle-support, of a pair of revoluble rolls for applying adhesive material to a bottle held by said support, rolls engaged by said applying-rolls for supplying them with adhesive material, reservoirs adapted to contain adhesive material in which said supply-rolls revolve, pivoted arms bearing said reservoirs and rolls, and actuating-means for moving said arms toward and from each other to move the applying-rolls into and out of engagement with the bottle, substantially as described.

10. In a bottle-labeling machine, the combination with a bottle-support, of a pair of revoluble rolls for applying adhesive material to a bottle held by said support, rolls engaged by said applying-rolls for supplying them with adhesive material, reservoirs adapted to contain adhesive material in which said supply-rolls revolve, pivoted

arms bearing said reservoirs and rolls, and actuating-means for moving said arms toward and from each other to move the applying-rolls into and out of engagement with the bottle, and means for intermittingly revolving the supply-rolls, substantially as described.

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

FREEMAN N. YOUNG.

Witnesses:
B. J. NOYES,
H. B. DAVIS.