

No. 639,627.

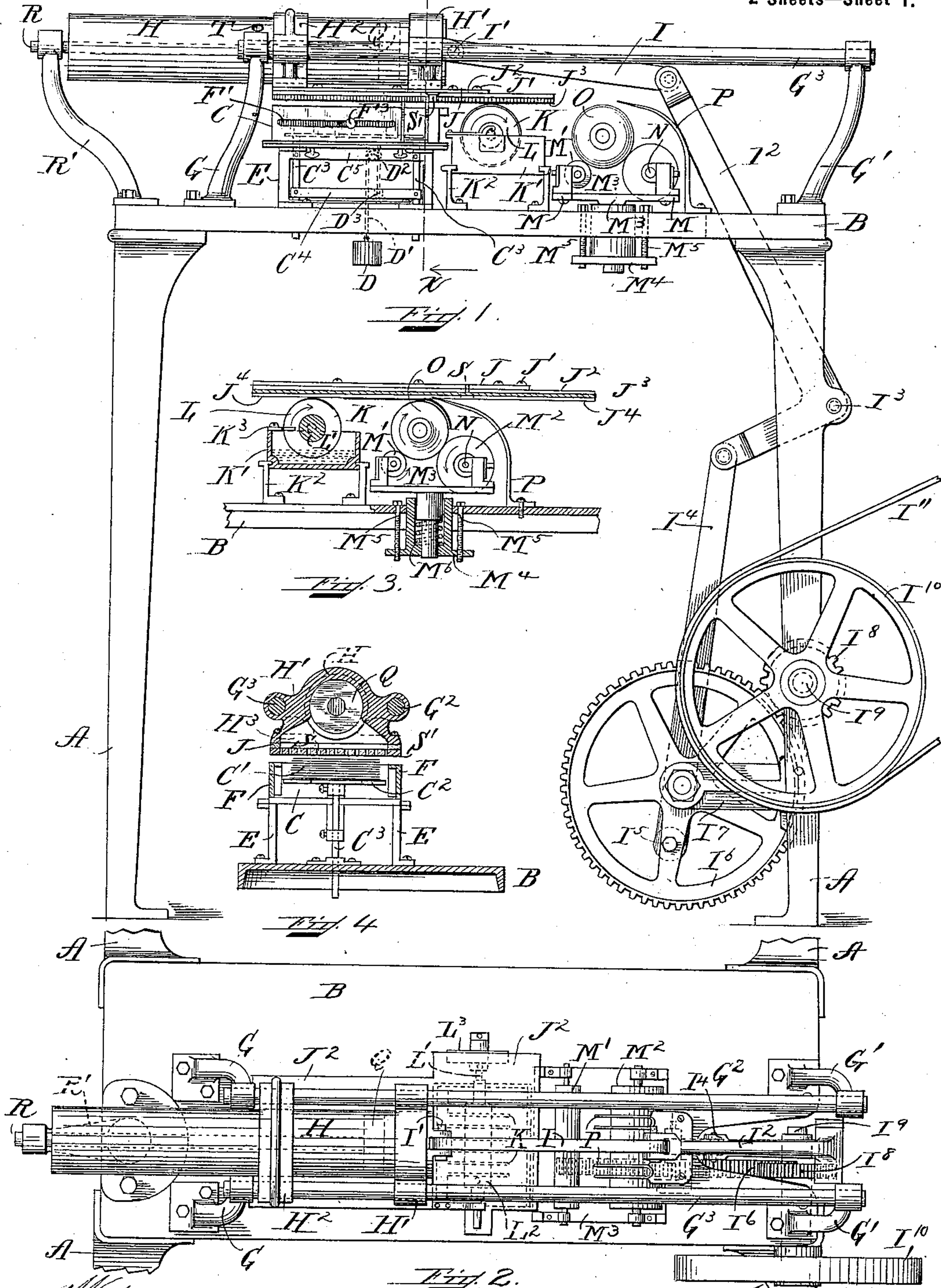
Patented Dec. 19, 1899.

C. F. TEBBETTS.
LABELING MACHINE.

(Application filed Nov. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
C. A. Stewart.
A. L. Wiser.

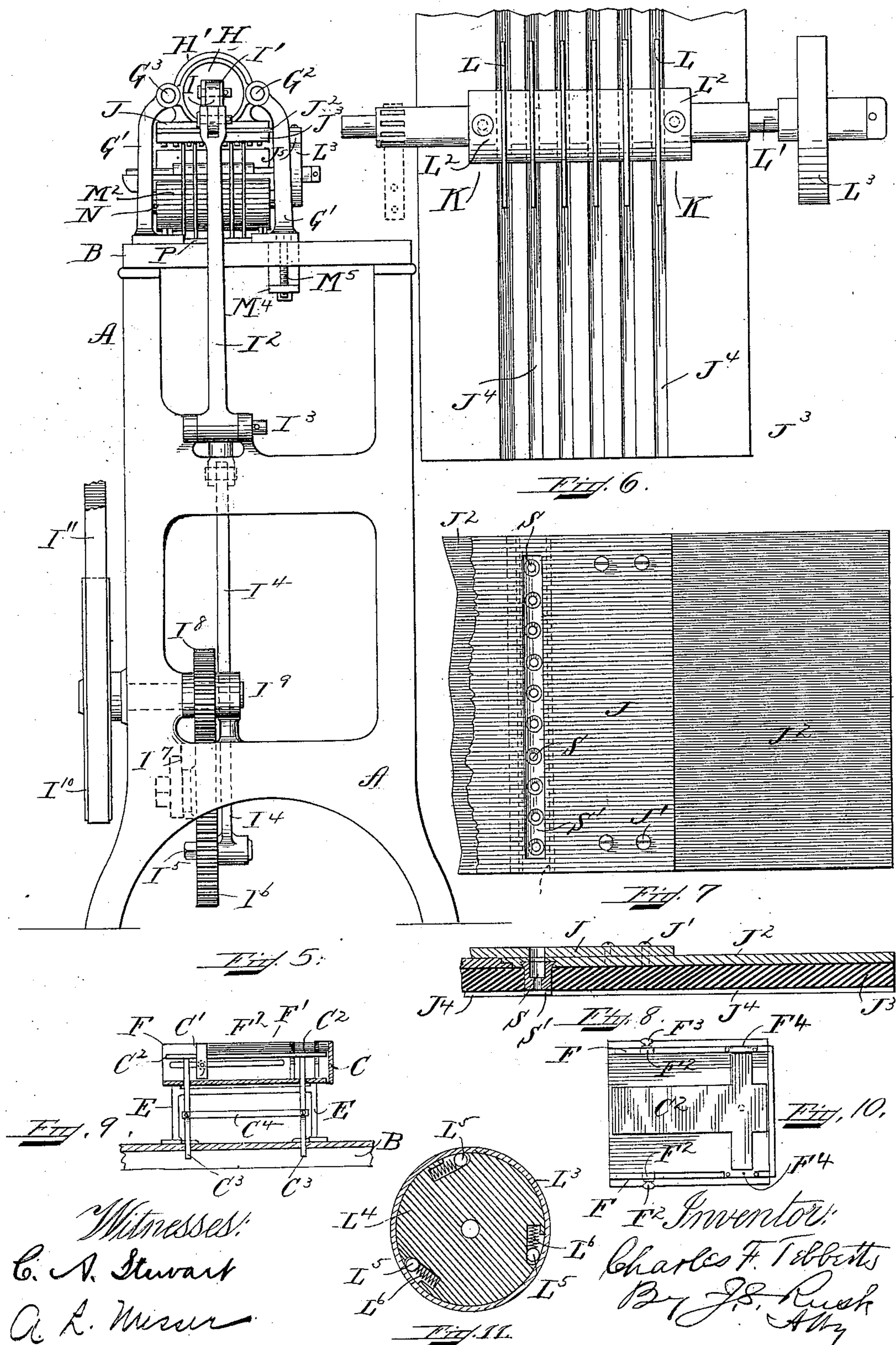
Inventor:
Charles F. Tebbetts
By J. S. Rusk
Att'y

Patented Dec. 19, 1899.

(Application filed Nov. 21, 1898.)

(No Model.)

2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

CHARLES F. TEBBETTS, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO CHARLES E. BROWNELL, OF NEW BEDFORD, MASSACHUSETTS.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 639,627, dated December 19, 1899.

Application filed November 21, 1898. Serial No. 696,973. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. TEBBETTS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a specification.

My invention relates to new and useful improvements in applying labels to bottles or other articles, and one object is to transfer from a stack of labels one label at a time and apply the same to the article to be labeled.

Another object is to roll the bottle as the label is being applied and to roll it backward after it has been applied, so that the bottle is given a rotary motion in two directions in the application of the label in order to insure the adhering of the label more readily to the bottle.

Another object is to apply mucilage from a mucilage-roll to the label as the label passes from the label-box to the article to be labeled and upon the return movement of the label-carrier to provide means for preventing the mucilage from the roll coming in contact with the bottom of the label-carrier, thereby avoiding the smearing of the under side of the label-carrier.

These and other objects are carried out by the construction hereinafter described, and shown in the drawings.

My invention consists of certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a side view of my improved labeling-machine, showing the parts in their normal positions before the starting of the machine with the label-carrier over the label-box. Fig. 2 is a plan view of the machine with the parts in the position shown in Fig. 1. Fig. 3 is a detail side and sectional view showing the position of the bottle of the label-carrier in the forward movement of the same during the application of the label from said carrier to the bottle. Fig. 4 is a sectional view on the line X, Fig. 1, looking in the direction indicated by the arrow. Fig. 5 is an end view looking from the right-hand end of Fig. 1. Fig. 6 is a reverse detail plan view

of the bottom of the label-carrier from the suction-openings to the rear of the carrier. Fig. 7 is a top plan view of the bottom plates of the label-carrier from the suction-openings forward. Fig. 8 is a longitudinal sectional view through that portion of the label-carrier shown in Fig. 7. Fig. 9 is a sectional view through the label-box. Fig. 10 is a plan view of the label-box. Fig. 11 is a sectional detail view of the friction-roll in the mucilage-applying device.

Like letters of reference refer to like parts throughout the several views.

Upon the upper ends of the opposite standards A is mounted the base-plate B, upon which is mounted, near one end, the label-box C, in which the labels C' are stacked on a movable plate C², from which extend downwardly the opposite rods C³, connected at their lower ends by the cross-brace C⁴, so that the cross-brace C⁴, rods C³, and plate C² all move upwardly as the labels are used up by reason of the weight D, to which is connected the chain D', which passes over the pulley D² on the frame E and is secured at its lower end D³ to the cross-brace C⁴. It is obvious that as the labels are removed from the top of the stack of labels the weight D will cause the plate C² to move upwardly and keep the labels in the upper part of the box, so that one is always in position to be taken off in the operation of the machine. The label-box C is provided with movable sides F, adapted to move inwardly and outwardly to accommodate labels of different widths, and to allow for said in-and-out movement the sides F are cut away at F⁴, so that the sides can be moved close in around the movable bottom plate C². Each side F of the box is provided with lengthwise slots F', in which there is adapted to be adjusted the block F², held in its adjusted position by the thumb-screw F³, and by means of said adjustable block labels of different lengths can be placed in the box and held in a forward position. As above described, means are provided for different widths of labels and also for different lengths of labels. The rear ends of the labels contact with said blocks F² in the manner shown in Fig. 9 and are held forward by said blocks.

Extending upwardly from the opposite ends

of the base-plate B are standards G G', to which are secured the parallel rods G² G³, on which there is adapted to slide the cylinder H by means of the supporting-guides H' H², which are secured to the cylinder, and upon the movement of the cylinder by means of the rod I, hereinafter referred to, the supporting-guides H' H² slide along the rods G² G³. To the forward end of the cylinder there is pivotally connected at I' the rod I, to which there is pivotally connected the bell-crank I², pivoted at I³ in one of the standards A, and at the other end of said bell-crank I² there is pivotally connected the link I⁴, which in turn is pivotally connected at I⁵ to the gear-wheel I⁶, which is mounted on a stud I⁷, secured to the standard A. Said gear-wheel meshes with a smaller gear-wheel I⁸, fixed fast on the shaft I⁹ in the standard A, and to which is fixed fast the driving-pulley I¹⁰, driven by the belt I¹¹. In the revolution of the driving-pulley I¹⁰ the motion is communicated to the machine through the above-described mechanisms, so as to provide a reciprocating movement for the cylinder H and connected parts, which together form the label-carrier.

The lower forward end of the cylinder H in the supporting-guide H' is cut away, so as to provide communication between the chamber H³, formed in the hollow supporting-guide H', and the interior of the cylinder. To the under sides of the supporting-guides H' H² is secured the plate J, to which is secured by screws J' the metal plate J², and to the under side of said metal plate is located the rubber plate J³. Said rubber plate is provided with a series of grooves J⁴, (see Fig. 6,) extending the entire length of said plate, which, as shown in Fig. 1, extends from the rear end of the label-box forward and beyond the mucilage-roll K, which is mounted to work in the mucilage-box K', mounted on the standards K², secured to the base-plate B. The mucilage-roll K consists of a series of metal disks L, secured on the shaft L' and spaced from each other by suitable collars L², all fast on the shaft L'. The disks L are so adjusted as to aline with the grooves J⁴ in the rubber plate J³. On the right-hand end of the shaft L' is fast the friction-roll L³, with which an extension J⁵ on the plate J² frictionally engages, Fig. 5, so that as said plates J² J³, secured together, move forwardly by reason of their being connected to the supporting-guides H' H² the friction-roll L³ and shaft L' will be rotated so as to turn the disks L and apply lines of mucilage to the under side of the label carried on the bottom of the rubber plate J³. (Shown in Fig. 3.) After the label-carrier has moved the entire length of its forward stroke it will be returned by mechanism previously described, and upon the return movement of said carrier the downward extension J⁵ of the plate J² will still frictionally engage the roll L³, but will not turn the shaft L' and disks L, because the plate L⁴ within the periphery of the roll L³ will be re-

lieved by the rolls L⁵ being pressed against the springs L⁶, relieving the friction of the rolls L⁵ against the inside of the periphery of the roll L³. In the forward movement of the label-carrier the rolls L⁵ are forced against the inside of the inner periphery of the roll L³ and cause a frictional engagement and turn the shaft L', secured to the plate L⁴, so that, as previously stated, in the forward movement of the label-carrier the mucilage-roll K applies lines of mucilage to the under side of the label, while on the return movement of the label-carrier the mucilage-roll does not turn, and, further, the disks L of said roll being out of contact with the under side of the label-carrier, owing to the grooves J⁴, no mucilage will be applied to the under side of the label-carrier and smearing of said label-carrier will be avoided. As the mucilage-roll is very light, I have provided a spring-pawl U, which is adapted to engage with the teeth U' on the shaft I' to prevent any possibility of the turning of the mucilage-roll upon the return movement of the label-carrier. On the forward movement of the label-carrier the pawl U rides over the teeth U' and permits the revolution of the shaft L'. These disks L extend very slightly into the grooves J⁴, and when a label is over said grooves slightly press the label inwardly in applying the mucilage, and upon the return movement of the cylinder H the plates J² J³ and disks L do not apply any mucilage to the grooves, being directly under the grooves and out of contact therewith. The scraper K³, secured to the mucilage-box K', (see Fig. 3,) is sufficiently close to the edges of the disks L to prevent a surplus of mucilage adhering to the edges of the disks, and thereby providing for a sufficient amount and not too much mucilage getting on the label.

Located on the base-plate B beyond the mucilage-box is a frame M, in which are journaled two rolls M' M² on tilting pivots N to allow for the inequalities of the bottles as the label-carrier in its travel presses on the bottles being labeled. From the lower side of the frame M extend downwardly the two studs M³ on opposite sides into and through the opposite boxes M⁴, secured by the bolts M⁵ to the base-plate B. Within said boxes and resting against the enlarged head of the stud and at the other end against the inside of the box is a spring M⁶ for the purpose of pressing the rolls up against the bottle O located on said rolls in position to be labeled as the bottom plate J³ of the label-carrier comes over said bottle and produces a slight pressing of the bottle downward against the rolls M' M². Secured to the base-plate B in front of the bottles to be labeled are a series of curved fingers P, which are so located as to extend upwardly into the slots J⁴ as the end of the plate J³ moves forward in the application of a label to a bottle. These fingers pass under the front edges of the labels (see Fig. 3) and guide them down onto the bottle,

and as the forward movement of the cylinder and plates continues the bottle rolls in the direction indicated in Fig. 3 and the label leaves the plate J^3 , so that in the forward movement of the label-carrier the label is pressed onto the bottle by the rolls $M' M^2$, and thereby strengthened in its adhesion to the bottle. In this way the label is caused to more firmly adhere to the bottle than if said bottle were held stationary. As the label-carrier begins its return movement, the bottle is turned over by the plate J^3 , so that the label is again pressed by the rolls $M' M^2$ against the bottle. These two opposite movements of the bottle not only assist the label in adhering to the bottle, but give the mucilage more time to stick the label to the bottle.

In the position shown in Fig. 1 the chamber H^3 in the supporting-guide H' is over the front ends of the labels, as shown in Fig. 4, and as the cylinder H begins its forward stroke, by reason of the connections previously described, the piston Q within said cylinder, fixed fast on the piston-rod R , which is secured fast to the bracket R' , creates a vacuum in the forward part of said cylinder in the chamber H^3 of the supporting-guide H' and draws up the front end of the top label over the openings S of the plate S' , dovetailed in the plates J^2 and J^3 , and said vacuum holds said label on said bottom plate J^3 over and to the rear of the openings S . As the label-carrier moves forward, with the label held by the vacuum, the vacuum continues until the front edge of the label is over the bottle to be labeled, and at this point the piston Q has passed the opening T in the cylinder H and destroys the vacuum and allows the label to adhere to the bottle. Even though the vacuum is destroyed, yet to prevent any possibility of the labels adhering to the under side of the label-carrier I have provided the fingers P to positively remove the labels from the under side of the label-carrier.

I do not limit myself to the arrangement and construction shown, as the same may be varied without departing from the spirit of my invention.

Having thus ascertained the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the articles to be labeled, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in

contact with said disks on the travel of said label from the label-box to the article to be labeled, and means for applying the transferred label to the article to be labeled.

2. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled and for returning it to the label-box after the application of the transferred label, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, and means for applying the transferred label to the article to be labeled.

3. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, and means for preventing the application of the adhesive material to the under side of the label-carrier upon the return of said label-carrier from the article to be labeled to the label-box.

4. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for lifting a label from the label-box and for holding it on the label-carrier, means for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, there being a series of grooves in the under side of the label-carrier and located above said washers for preventing the application of adhesive material to the under side of the label-carrier upon the return of said

label-carrier from the article to be labeled to the label-box.

5. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum in the label-carrier by the movement of said label-carrier to lift a label from the label-box and to hold it on the label-carrier during its travel to the article to be labeled, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device located in the line of travel of the label-carrier and moved by said label-carrier for applying adhesive material to the under side of the label on its travel from the label-box to the article to be labeled, and means for applying the transferred label to the article to be labeled.

6. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum in the label-carrier by the movement of said label-carrier to lift a label from the label-box and to hold it on the label-carrier during its travel to the article to be labeled, means operated independently of the said vacuum for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device consisting of a series of separated disks and located in the line of travel of the label-carrier and moved by said label-carrier for applying adhesive material to the under side of the label on its travel from the label-box to the article to be labeled, and means for applying the transferred label to the article to be labeled.

7. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, and means for rolling the article to be labeled during the application of the transferred label.

8. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for lifting a label from the label-box and for holding it on the label-carrier, means for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying

device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, and means for rolling the article to be labeled in opposite directions during the application of the transferred label.

9. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device for applying adhesive material to the label as the under side of said label passes over and in contact with said device on the travel of said label from the label-box to the article to be labeled, and means for guiding the transferred label from the label-carrier to the article to be labeled.

10. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device for applying adhesive material to the label as the under side of said label passes over and in contact with said device on the travel of said label from the label-box to the article to be labeled, means for guiding the transferred label from the label-carrier to the article to be labeled, and means for applying the transferred label to the article to be labeled.

11. In an apparatus for labeling articles, a label-box for holding the labels, a yielding support, rollers mounted in said support and on which the article to be labeled is placed, a label-carrier for transferring a label from the label-box to the article to be labeled and for rolling said article during the application of said label, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device for applying adhesive material to the label as the under side of said label passes over and in contact with said device on the travel of said label from the label-box to the article to be labeled, and means for guiding the transferred label from the label-carrier to the article to be labeled.

12. In an apparatus for labeling articles, a

label-box for holding the labels, a yielding support, rollers mounted in said support and on which the article to be labeled is placed, a label-carrier for transferring a label from the label-box to the article to be labelled and for rolling said article during the application of said label, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device for applying adhesive material to the label as the under side of said label passes over and in contact with said device on the travel of said label from the label-box to the article to be labelled, and a series of fingers for guiding the transferred label from the label-carrier to the article to be labeled.

13. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for lifting a label from the label-box and for holding it on the label-carrier, means for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device consisting of a series of separated disks adapted to be moved by the movement of the label-carrier for applying adhesive material to the label as the under side of said label passes over and in contact with said disks on the travel of said label from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, there being a series of grooves in the under side of the label-carrier and located above said disks for preventing the application of adhesive material to the under side of the label-carrier upon the return of said label-carrier from the article to be labeled to the label-box, and a series of fingers adapted to enter said grooves to guide the transferred label from the label-carrier to the article to be labeled.

14. In an apparatus for labeling articles, a label-box for holding the labels, a movable plate on which the labels are placed, means for moving said plate upwardly, one or more movable sides cut away to allow adjustment of said sides upon said movable plate for labels of different widths, there being a slot in each movable plate, and an adjustable block in each slot to hold the labels in the forward position in said box.

15. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means consisting of a piston-head for producing a vacuum in said label-carrier by the move-

ment of said label-carrier to lift a label from the label-box and to hold it on the label-carrier during its travel from the label-box to the article to be labeled, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device located in the line of travel of the label-carrier for applying adhesive material to the under side of the label on its travel from the label-box to the article to be labeled, and means for applying the transferred label to the article to be labeled.

16. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means consisting of a fixed piston-head for producing a vacuum in said label-carrier by the movement of said label-carrier to lift a label from the label-box and to hold it on the label-carrier during its travel from the label-box to the article to be labeled, means for moving the label-carrier from the label-box to the article to be labeled, an adhesive-applying device located in the line of travel of the label-carrier for applying adhesive material to the under side of the label on its travel from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, and means consisting of the label-carrier for rolling the article to be labeled.

17. In an apparatus for labeling articles, a label-box for holding the labels, a label-carrier for transferring a label from the label-box to the article to be labeled, means for producing a vacuum for lifting a label from the label-box and for holding it on the label-carrier during its travel to the article to be labeled, means operated independently of said vacuum for moving the label-carrier from the label-box to the article to be labeled, a device located in the line of travel of the label-carrier for applying adhesive material to the under side of the label on its travel from the label-box to the article to be labeled, means for applying the transferred label to the article to be labeled, and means for preventing the application of the adhesive material to the under side of the label-carrier upon the return of said label-carrier from the article to be labeled to the label-box.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 12th day of November, A. D. 1898.

CHARLES F. TEBBETTS.

Witnesses:

A. L. MESSER,
C. A. STEWART.