

LABELING MACHINE.

900,816.

Patented Oct. 13, 1908.

Fig. 4-

FIG. 1 -

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APPLICATION FILED FEB. 18, 1907.

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3 SHEETS—SHEET 2.



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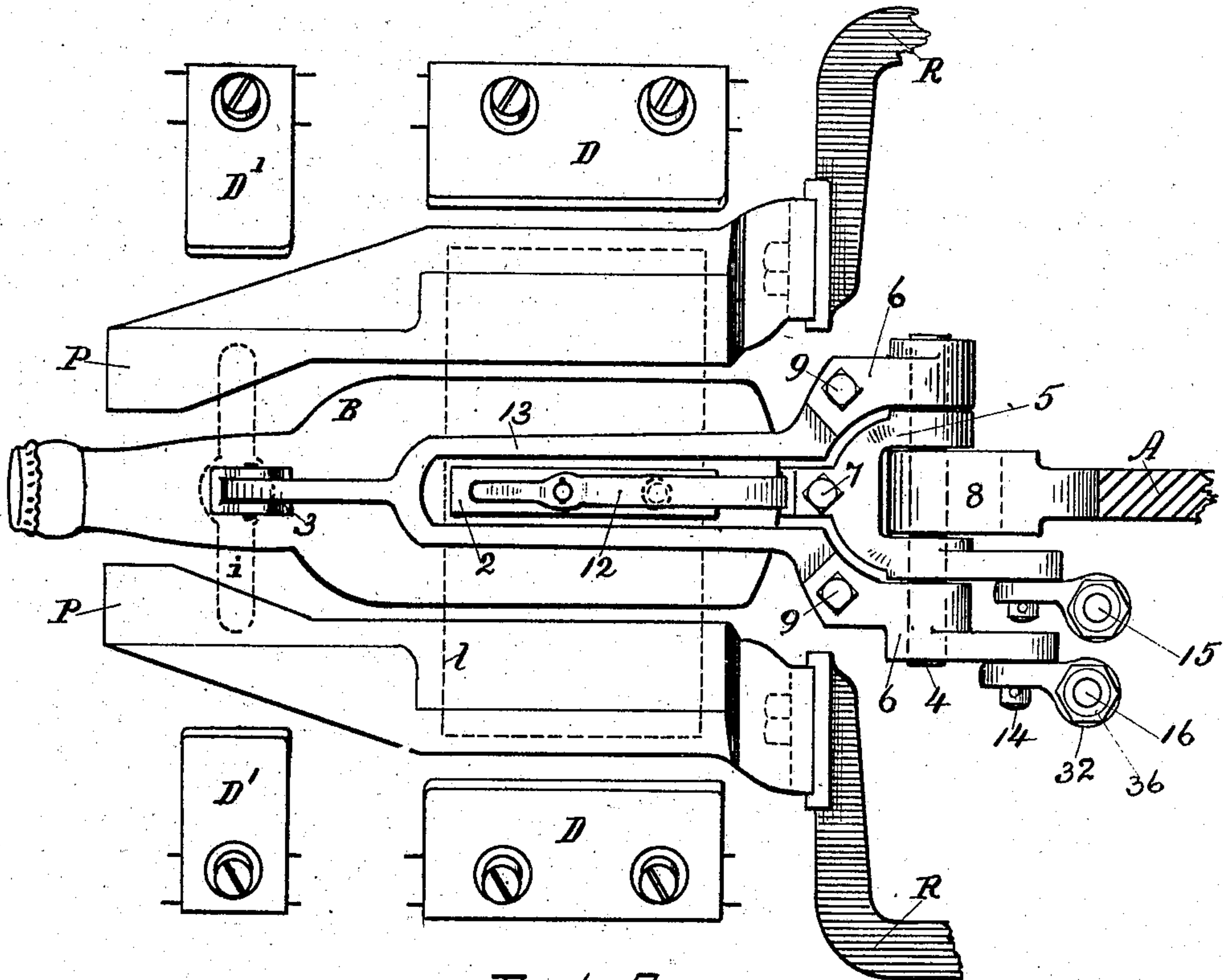


FIG. 3.

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UNITED STATES PATENT OFFICE.

FRANK O. WOODLAND, OF WORCESTER, MASSACHUSETTS.

LABELING-MACHINE.

No. 900,816.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed February 18, 1907. Serial No. 357,804.

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 new and useful Improvements in Labeling-Machines, of which the following is a specification, reference being made therein to the accompanying drawings.

My present invention pertains to bottle labeling machines adapted for simultaneously affixing a plurality of labels, as the body labels and neck labels, and more particularly relates to improvements in means for the temporary gripping or clamping of the respective labels to retain them centrally and longitudinally against the face of the bottle as they are brought to the bottle by the pair, or pairs, of plates or glue-applying pickers, from the label-supply holder, and delivered at their appropriate positions to be wiped-on by means of suitable wipers or smoothing appliances.

In the practice of double or plural labeling of bottles, which includes the simultaneous affixment of a label or labels upon the body of the bottle, and a separate label upon the neck of the bottle, the wide range of variations in the styles and proportions among bottles is such that a single-acting grip or clamping device, covering a plurality of labels, or clamp devices having a single carrier with two yieldable presser-pads, will not successfully operate beyond a limited range of variations in the bottle shapes; some bottles being made with large bodies and small necks; others with small bodies and large necks; others with long neck and long shoulder; or short neck and abrupt shoulder; or in numerous other modifications in shapes, for some of which the gripping means of the kind heretofore employed are not practicable, except when specially formed for the particular shape of bottle in each instance.

The prime object of my invention is to provide, in a labeling machine designed for dual or plural labeling, a plurality of independently operating individual grip-devices for the several labels, and controlling means for separately actuating said grip-devices with such movements as the condition requires.

Another object is to provide in a labeling machine designed for dual or plural labeling, a compound plural or dual label-gripping mechanism adapted for individual efficient and variable operation of its grip-devices for

accommodating bottles of differently proportioned shapes. Also, to provide a dual label-gripping means having independently operating simultaneously actuated grip-members, and facilities for regulating the relative action of the same, as may be required under the varied conditions, or different relative proportions in the work.

Another object is to provide a grip-device for the purpose named, with facilities for ready exchange of the grip-finger; whereby fingers of different form or length can be conveniently substituted in place of each other when desired, without disturbing the finger-actuating connections.

These objects I attain by mechanism, the nature and mode of operation of which is illustrated in the accompanying drawings and hereinafter more fully explained; the particular subject matter claimed as of my invention being definitely expressed in the summary.

In the drawings, Figure 1 represents a side view of such parts of a bottle labeling machine as will show the nature of the invention. Fig. 2 is a side elevation view of a label grip mechanism embodying my invention; the action being indicated by dotted lines. Fig. 3 is a plan view of the same showing the relation therewith of picker plates and wipers; and Fig. 4 is a transverse sectional detail view of means for joining two grip-operating connection rods with an actuating lever.

In the accompanying drawings I have represented this improved label-gripping means as adapted for use in a labeling machine of the kind substantially such as that described in an application for Letters Patent, Serial No. 197,485 heretofore filed by me; but the invention herein set forth can be applied to use in other styles of labeling machines without departure from the spirit of the invention, and I desire to include, use thereof as within the scope of my claims.

On the drawings, the reference letter A denotes portions of the machine frame, which may be a suitable construction for supporting the various operating mechanisms; which generally comprise a support or rest C on which the bottle B is placed; a label-supply holder H adapted for containing a plurality of packs of labels, as I and L, and for delivering separate labels from each pack; a pair, or pairs, of reciprocatingly movable glue-applying pickers or plates P that take the

labels from the supply holder and present them at the position for affixment in proper relation to the bottle lying upon the rest; suitable means (not shown) for spreading glue upon the picker-faces; and oppositely arranged reciprocating wipers D D' or means for smoothing down the ends of the label for permanently affixing the same at its position to the bottle or article labeled.

The parts above named, and the means for imparting motion thereto, can be made, in construction and operation, similar to the mechanisms described in my previous application for Letters Patent, Serial No. 197,485, or of other suitable construction capable of feeding, gluing, placing and wiping on a plurality of labels, dually or simultaneously, at each complete cycle of the machine.

The general actuating parts of the labeling machine that are not herein shown, while they are necessary in practice, are not essentials of my present improvement, which relates especially to peculiarities in label-gripping means and the combinations thereof with the co-acting elements for the purposes herein specified.

In accordance with my invention the grip-device for the neck-label and the grip-device for the body-label are made as separately controllable, individual, or independently operating members, while arranged to act in a general manner in conjunction with each other, and for simultaneous or varied effect; whereby the gripping means is rendered efficient and practically applicable to a wide variety of bottle shapes.

As indicated in the drawings, I provide a primary or central lever or finger 12 carrying the body-label grip-pad 2; and a second lever or bifurcated finger 13 for carrying the neck-label grip-pad 3, both levers arranged to swing from and to the bottle, bringing their respective grip-pads in contact therewith in central longitudinal relation to the cylindrical surface thereof.

A numeral 4 indicates a fulcrum pin or axis pivotally connecting the grip-finger heads 5 and 6 with an ear 8 formed upon or attached to the frame A. Separate links or connections are provided for operating the several grip-members; said connections being suitably combined with the respective finger-heads. The fingers 12 and 13 are best made separable from their pivoting heads 5 and 6, and are detachably secured thereto respectively by a projecting seat and screw-bolt, as at 7 and 9, so that the fingers can be readily exchanged for others of different form when desired; thus permitting the use of a variety of shapes to suit different lengths or work.

As a preferred means for independently operating the grip-devices, I provide variable connections with means for regulating the relative adjustment and action of said parts

and the respective grip-devices. In the present instance, as shown in Fig. 1, the mechanism comprises a swinging lever 17 fulcrumed at 18 and moved by a suitable revolving cam 19 on an operating shaft 20. Upon opposite sides of said lever are adjustable members or slide-blocks 21 and 22 fitted thereon with intermatching grooves and flanges, and retained at adjustments by set-screws *s* or equivalent fastenings. The rearward arms of the grip-finger heads 5 and 6 are respectively connected with the blocks 21 and 22 by the rods 15 and 16. The rods are provided with telescoping coupling members 25 and 26 pivoted to the blocks at 23 and 24. Springs 27 and 28 are provided to press upward against collars 29 and 30, adjustably fixed on the rod for normally keeping the rod at full extension, with the stop pins *t* against the guide sleeve of the coupling piece, and to also afford a yieldable pressure for the grip-members when they strike the bottle. By adjustment of the collars 29 and 30 a higher or lower working position of the gripping member is attained; and by adjustment of the blocks 21 or 22 on lever 17, the throw of the individual grip-devices can be varied as desired; independent operation and regulation of the grip, upon the respective labels, affords ready accommodation of the means to the different conditions of work that occur in practice.

In Fig. 2 there is illustrated a means of hinging the connection rods 15 and 16 to the heads of the grip-fingers in a manner which affords facilities for regulating the working length of the connection-rods, thereby giving higher or lower positions to the respective gripping members independently. In this a hinging member provided with a sleeve 32 is pivoted to the arm of the grip-finger head, and the connection-rod is fitted with a threaded end that extends through the sleeve 32 and is retained therein by nuts 35 and 36, above and below, that abut against the ends of the sleeve, and can be turned up or down to adjust the rod therein.

In the operation of the mechanism as shown, plates or pickers P, which are attached to suitable carriers R, have motion to and from the label holder H. Their faces are coated with glue from the glue supply G by a moving roller (not shown) in the manner heretofore practiced, so that the pickers will take a label from each pack I and L and bring them, as indicated by dotted lines, to the bottle, placing them in proper positions, as at *i* and *l*, for affixment to the same. The grip-devices are then respectively brought into position between the plates P for individually gripping the labels *i* and *l* centrally and longitudinally of the bottle surface, holding the same in their places while the pickers retreat and the wipers D and D' approach and wipe on the ends of the respective labels.

as will be readily understood by persons skilled in this art. When they have performed their work the grip-devices swing out of the path of label feed, as indicated by 5 dotted lines 12^a and 13^a on Fig. 2.

I am aware that a grip-device capable of simultaneously clamping two labels to a bottle has heretofore been made, and in 10 which the two contact pads are attached to a single carrier member and both operated by the same movement, and without individually controlled carrier action; but such prior mechanism does not effect results such as attained by my invention, and I do not 15 claim, broadly, the mere employment of two contact pads.

By independently operating the grip-devices I am enabled to successfully accommodate bottles of various proportions and sizes, 20 in plural or dual labeling, without other change than adjustment of the relation or throw of one of the devices in respect to the other, and the bottle-rest; also, to give the desired amount of pressure, or action, to 25 each or either grip while they work in co-active relation with the feed.

I am aware that in practicing my invention and applying it to labeling machines of varied constructions, changes in details may 30 be made by those skilled in the art, without departing from the nature and scope of the invention as expressed in the claims; therefore I do not wish to be limited to the particular forms and proportions herein shown.

35 What I claim and desire to secure by Letters Patent is—

1. In a bottle labeling machine, in combination with means for gluing and placing a body label and a neck label in position for 40 affixment to a bottle, a grip-device for the body label, a separate grip-device for the neck label, and an operating means connected therewith for imparting an independent movement to the respective grip-devices to 45 and from the bottle.

2. In a bottle-labeling machine adapted for simultaneously placing a plurality of labels and affixing the same, a plurality of 50 separately acting, individually controlled grip-devices for respectively retaining the several labels against the bottle preparatory to their permanent affixment to a bottle.

3. In a bottle-labeling machine, a set of 55 label-carrying plates or pickers that bring the labels into position against the neck and body of the bottle for being affixed, and a plurality of label-holding grip-devices that act between said plates for synchronously clamping the respective labels individually 60 to the bottle, and means for independently imparting movement to the respective grip-devices.

4. In a bottle-labeling machine, in combination with a stationary bottle-supporting 65 rest, a label-supply holder delivering labels

from a plurality of packs, and glue-applying pickers adapted for placing a plurality of labels for attachment to a bottle; of label-gripping means comprising a plurality of individual grip-devices, and independently 70 connected devices for separately moving said grip-devices.

5. In a bottle-labeling machine, the combination with a stationary bottle-supporting rest, a label-supply holder delivering labels 75 from a plurality of packs, and glue-applying pickers adapted for placing a plurality of labels for attachment to a bottle laid upon said rest; of label-gripping means comprising a plurality of individual grip-fingers, independent connections for moving the separate 80 grip-fingers, and means for varying the working relation or motion of said grip-fingers in respect to each other and to the bottle supporting rest. 85

6. In combination with a plurality of oppositely disposed plates that gum and bring a plurality of labels into positions adjacent to the neck and body of the bottle, a plurality of grip-members that enter between said 90 plates for clamping the respective labels centrally and longitudinally of the bottle, a separate carrier or finger for each grip member, an independent actuator connection for each carrier and its grip-member, and means 95 for separately adjusting or regulating the relative movements of the respective grip-actuator connections.

7. In a bottle-labeling machine, in combination with a stationary bottle-rest, means 100 for gluing, simultaneously delivering, and wiping-on a plurality of labels to a bottle or the like; a pair of independently acting levers each carrying a device for retaining a label central and longitudinally adjacent to the 105 face of the bottle while being wiped on or affixed, connections independently controlling said levers and label-retaining devices, and means for effecting and regulating a degree of differential movement of said le- 110 vers in relation to each other.

8. In a labeling machine, in combination, a plurality of grip-device fingers or levers pivotally supported to swing to and from the labels placed on the body and neck of the 115 bottle, separate connecting-rods independently connected with said grip-device levers, adjusting means combined with said connection-rods for individually regulating the working relation of the grip-devices with respect to the shape of the bottle, and means 120 for imparting motion to the connection-rods.

9. In combination, a plural-feed bottom-delivery label-holder, means for transferring a plurality of labels from said label-holder 125 into positions against the bottle for affixment thereto, means for severally and independently clamping the labels centrally lengthwise of the bottle, and means for individually controlling the operative move- 130

ment and pressure of said label-clamping devices.

10. In a bottle-labeling machine, a plural label-gripping means comprising an inner 5 grip-finger, an outer bifurcated grip-finger, pivoting means for said fingers, separate connections for severally operating said grip-fingers, means for varying the adjustment of the connections, and means for actuating the 10 said connections.

11. In a bottle-labeling machine, a label-gripping means consisting of a lever comprising a pivoting member, and a finger portion detachably secured thereto, and a pad 15 carried upon said detachable finger portion for contact with the label.

12. In a bottle-labeling machine, a label-gripping means comprising a finger-pivoting head, a fulcrum pivot therefor, a grip-finger 20 detachably secured to said pivoting head, a contact-pad carried upon said grip-finger, an operating connection jointed to said pivoting-head, and means for affording a yielding action for said connection.

25 13. In a bottle-labeling machine, a label-gripping means comprising a finger-pivoting-

head, a fulcrum pivot therefor, a grip-finger attached to said pivoting-head, a connecting-joint-member having a sleeve hinged to said 30 pivoting-head, an actuating connection-rod extending through said sleeve and having nuts threaded thereon above and below the sleeve, for the purpose set forth.

14. In a bottle-labeling machine, a label-gripping means comprising a plurality of 35 finger-pivoting-heads, fulcrum pivoting means therefor, a plurality of grip-devices respectively detachably secured to said pivoting-heads, connections for severally operating said grip-devices, each provided with a 40 slidable coupling member and a yieldable extension spring, an operating lever, a separate pivoting means for each of said connections adjustably secured to said operating lever, and means for actuating said lever, for 45 the purpose set forth.

Witness my hand this 15th day of February, 1907.

FRANK O. WOODLAND.

Witnesses:

CHAS. H. BURLEIGH,
M. F. McMAHON.