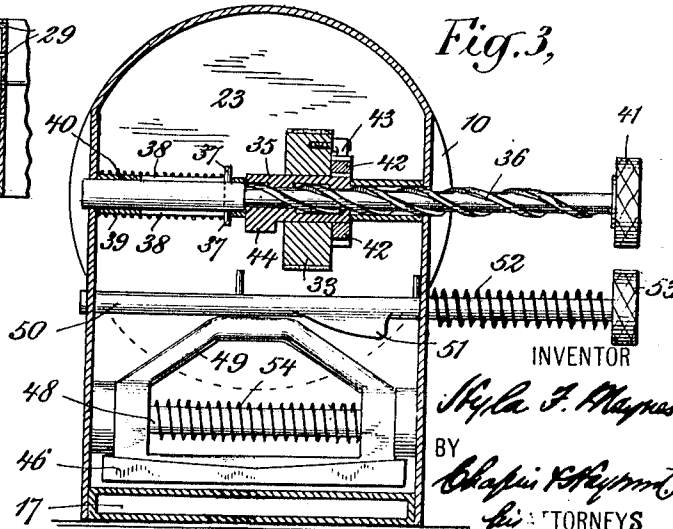
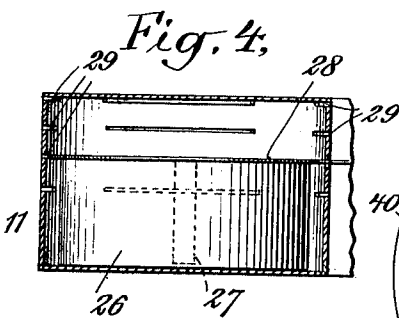
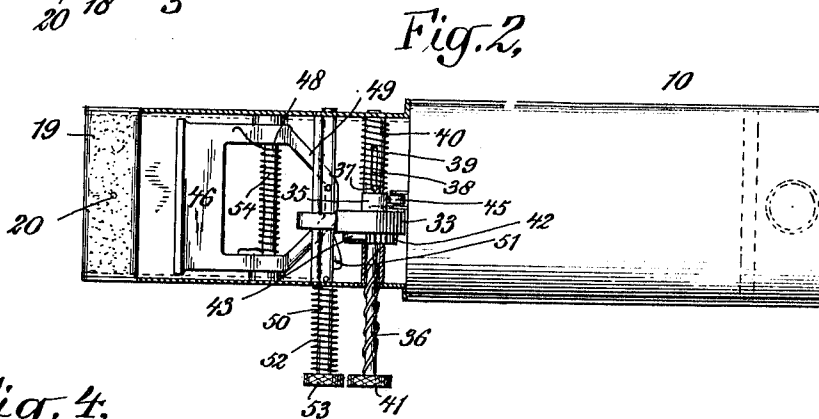
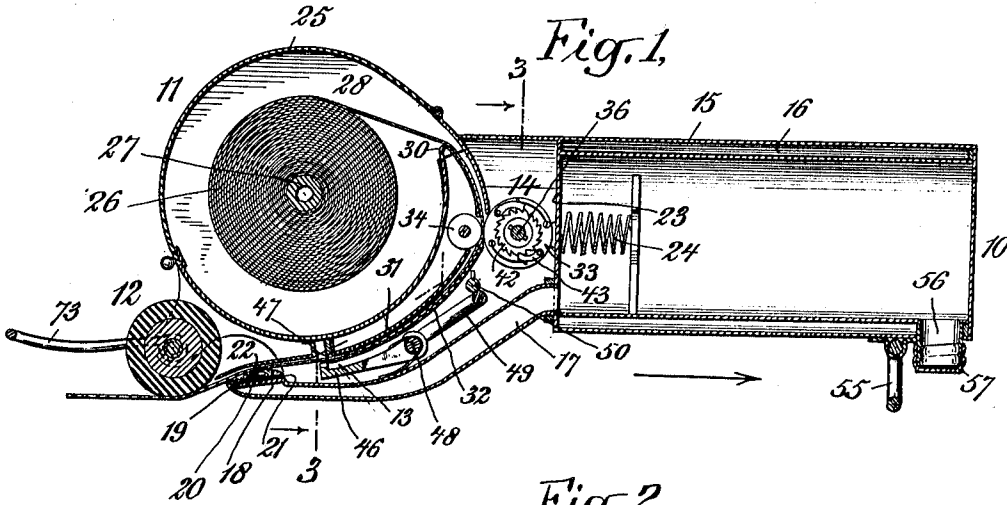


H. F. MAYNES.
MACHINE FOR APPLYING LABELS.
APPLICATION FILED JUNE 16, 1910.

1,019,719.

Patented Mar. 5, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

J. C. Hartmann
Eugene S. Andrews Jr.

INVENTOR

H. F. Maynes

BY

Chapin & Maynes
ATTORNEYS

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2 SHEETS—SHEET 2.

Fig. 5,

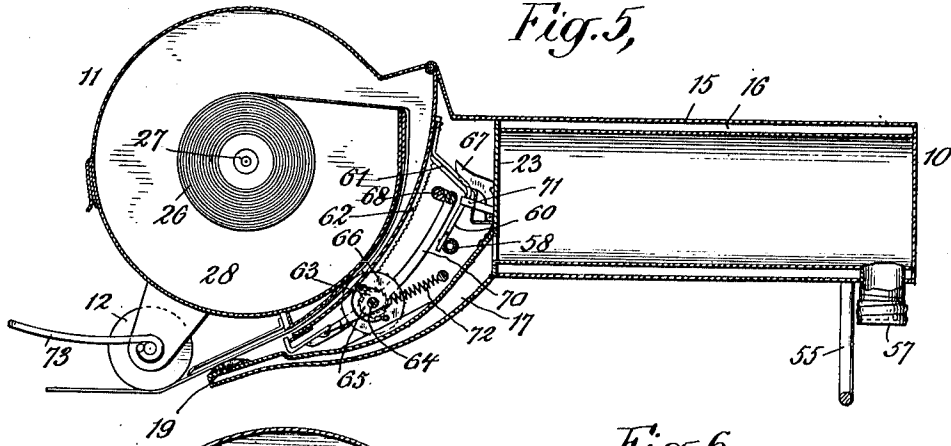


Fig. 6,

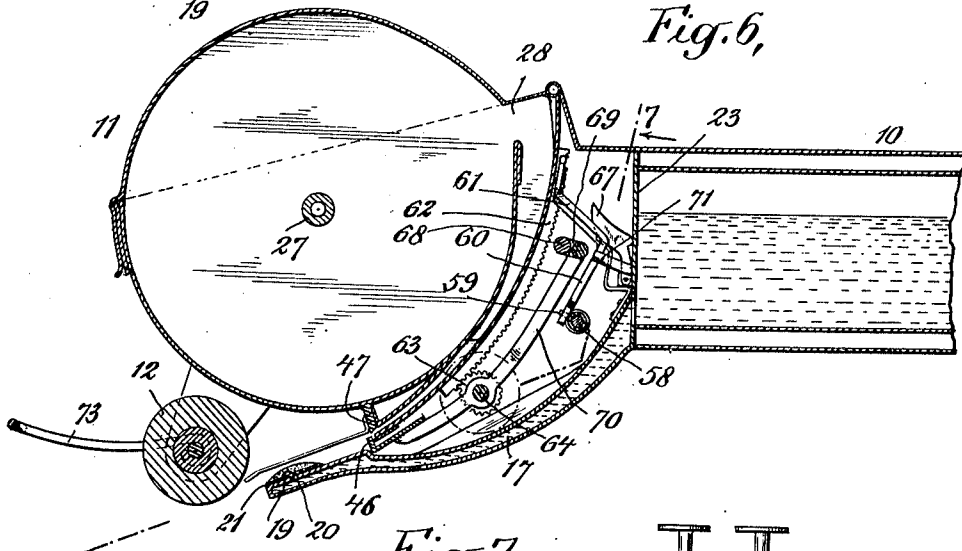
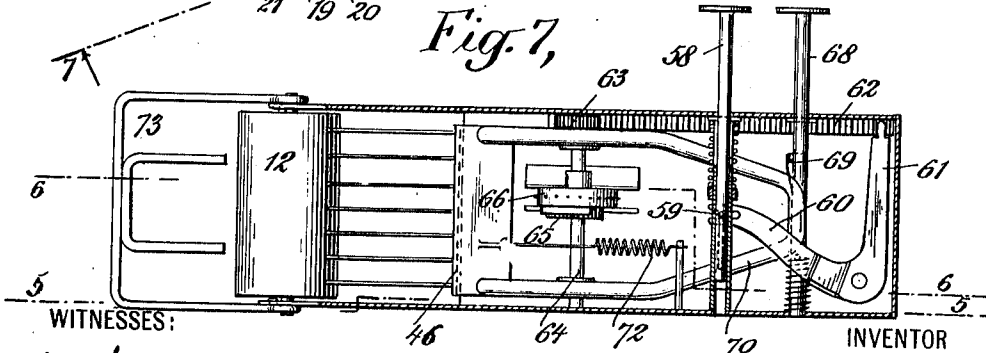


Fig. 7,



WITNESSES:

INVENTOR

J. L. Hartmann
Herman Andrews

H. F. Maynes
BY
Chapin Maynard
his ATTORNEYS

UNITED STATES PATENT OFFICE.

HYLA F. MAYNES, OF GAINES, PENNSYLVANIA.

MACHINE FOR APPLYING LABELS.

1,019,719.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed June 18, 1910. Serial No. 567,125.

To all whom it may concern:

Be it known that I, Hyla F. Maynes, a citizen of the United States of America, and a resident of Gaines, Tioga county, and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Applying Labels, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to machines for applying labels, and particularly to means whereby labels of any desired length may be applied to surfaces designed to receive them, and caused to adhere thereto.

My invention consists in a magazine for containing the labels to be applied, such labels being preferably in the form of a continuous strip, means for applying moisture to the strip, which may be in the form of water if the strip employed be pre-gummed, or adhesive material if an ungummed strip be employed, together with manually operated means for feeding forward a portion of the said strip, and manually operated means for severing the strip after the required quantity has been fed forward. I also preferably employ a label applying roller toward and beneath which the end of the strip is fed by means of the said manually operated means whereby a further quantity of the strip may be withdrawn from the magazine by the act of pressing the label against the surface to which it is to be applied and moving the machine longitudinally with respect to the said surface, the said roller being also employed to press down the entire label after it has been severed.

The object of my invention is to provide a simple, inexpensive form of machine in which a strip of any desired length may be readily applied to a surface without it being necessary for the operator to touch the strip in any way or by any means except through the action of the machine.

In carrying out my invention I employ many novel details of construction and combinations of parts, such as will be fully pointed out hereinafter, and in order that my invention may be thoroughly understood, I will now proceed to describe certain structures constituting embodiments thereof, having reference to the accompanying drawings illustrating the same, and will then point out the novel features in claims.

In the drawings: Figure 1 is a view in

central vertical longitudinal section through a machine constructed in accordance with my invention. Fig. 2 is a partial top view and partial horizontal section of the same, the label magazine and the label applying roller being removed. Fig. 3 is a view in vertical transverse section upon an enlarged scale, the plane of section being substantially upon the line 3—3 of Fig. 1. Fig. 4 is a detail view in horizontal section through the label magazine. Fig. 5 is a view in longitudinal vertical section of a modified form of the machine the plane of section being taken substantially upon the line 5—5 of Fig. 7. Fig. 6 is a detail view in longitudinal section upon an enlarged scale upon the line 6—6 of Fig. 7. Fig. 7 is a developed sectional view upon the plane of the line 7—7 of Fig. 6.

The machine, as a whole, comprises a reservoir 10, a label magazine 11, a label applying roller 12, separating mechanism 13 for cutting off the label, and feeding means 14 for the label strip. The reservoir 10 is conveniently of cylindrical form so that it constitutes a handle for the machine as a whole, and in order to prevent the warmth of the hand from heating the fluid contained in the reservoir such as might cause an excess of liquid to be expelled therefrom, I conveniently provide an outer jacket 15 therefor whereby a dead air space 16 is inclosed such as constitutes an effective heat insulating medium. The liquid contained in the reservoir 10 may be of any desired character. If the strip employed is pre-gummed then this liquid may conveniently be clear water, while if an ungummed strip be employed the liquid may be an adhesive material. For simplicity of description I will refer to the liquid therein as water, but it will be understood that the same is not to be considered in any way as a limitation. The reservoir is provided with a forwardly projecting conduit 17 which terminates just behind the label applying roller 12, and is provided with a platform 18 upon which is mounted a pad 19. The platform is provided with one or more openings 20 there-through by which the water may flow from the conduit to the pad. I conveniently provide a strip of wire gauze 21 between the platform and the pad so as to permit the ready distribution of the water throughout the pad. In some instances I provide a small tube 22 which passes through the pad

and communicates with the interior of the conduit which will form a return passage for air to take the place of the water fed from the reservoir, but I find that in all cases the same is not necessary as the air finds a passage through the discharge opening or openings 20. The forward wall 23 of the reservoir 10 is preferably made flexible, a spring 24 at the rear thereof forcing the same forward. Exterior pressure applied to this wall tends to slightly reduce the cubical area of the interior of the reservoir and hence to force out a small quantity of water through the opening or openings 20 in the same manner as oil is forced from the spout of an ordinary squirt can. The means by which pressure is applied to this wall will be presently explained.

The magazine 11 for the labels is conveniently of cylindrical form and provided with a hinged cover 25 by which ready access may be had to the interior thereof. A roll 26 of the label material is adapted to be mounted in the said magazine upon an arbor 27 conveniently supported therein. In order that different width labels may be employed, I conveniently provide a removable plate or partition 28 having projecting portions which are arranged to be received in slots 29 (see particularly Fig. 4) in the walls of the magazine, a plurality of the slots being disposed at the proper distances apart in accordance with the different width labels desired to be used. The end of the label strip passes from the roll down over a guide 30, thence to the feeding mechanism 14, thence between guiding strips 31—32 to and past the severing mechanism, thence over the pad 19 to and beneath the label applying roller 12.

Referring now more particularly to the form of my invention shown in Figs. 1 to 4 inclusive, the feeding mechanism 14 includes a feed roller 33 and a presser roller 34, the label strip being arranged to pass between the feed and the presser rollers and to be forced into close frictional engagement with the feed roller by engagement with the said presser roller. The feed roller is mounted loosely upon a hub 35, the said hub being in turn mounted upon a spindle 36. The said spindle is exteriorly threaded with a quick pitch thread and the interior of the hub 35 is correspondingly threaded as will be readily understood by reference to Fig. 3. The inner end of the spindle 36 beyond the threaded portion is provided with laterally projecting pins or projections 37 which pass through guiding slots 38 in a guide tube 40 in which the inner end of the said spindle is mounted. A coil spring 39 surrounds the said sleeve, bearing at one end against a portion of the casing and at the other end against the said pins or projections 37. The engagement of the

pins or projections 37 prevents the spindle 36 from turning while the spring opposes a yielding resistance against the inward movement of the said spindle and tends to return it to a normal position if forced inwardly. The outer end of the spindle is provided with a thumb or finger piece 41 by which the said spindle may be forced inward against the pressure of the said spring. Secured to the said hub 35 is a ratchet wheel 42, the teeth of which are engaged by pawls 43 carried by the said feed roller 33. When the spindle 36 is pressed inward it will, by its threaded engagement with the hub 35, cause the same to rotate, and rotary movement thereof in one direction will be imparted through the ratchet wheel 42 and pawls 43 to the feed roller 33, such being in a direction to feed the end of the label strip forward as will be readily understood by reference to Fig. 1 of the drawings. Upon the return movement of the spindle 36 under the action of the spring 39, the hub 35 will be rotated in the opposite direction and the ratchet wheel 42 will be rotated therewith, but no movement will be imparted to the feed roller 33, the teeth of the ratchet wheel at this time passing freely beneath the pawls 43. The hub 35 of the ratchet wheel is also provided with a cam-like projection 44 arranged for engagement with a roller 45 carried by the front wall 23 of the reservoir. In the rotation of the hub 35 the cam projection 44 will apply the necessary pressure through the roller 45 to the front wall 23 of the reservoir to force out a small quantity of liquid therefrom for the purpose and in the manner heretofore explained.

The separating mechanism 13 includes a movable cutting knife 46 and a stationary cutting blade 47 for co-action therewith. The movable knife 46 is mounted upon an arm carried by a rock shaft 48 suitably journaled in the casing of the machine, the said spindle also carrying an operating arm 49 by which the said movable cutting knife may be operated. This operation is effected by means of a transversely arranged spindle 50 conveniently arranged near the operating spindle 36 of the feeding mechanism, the said spindle being arranged to slide longitudinally in the casing and having a cam projection 51 (see particularly Figs. 2 and 3) for engagement with the operating arm 49. A coil spring 52 surrounding the said spindle opposes inward movement of the spindle and acts to return the spindle to a normal position after it has been forced inward, a thumb or finger piece 53 being provided at the outer end thereof by which the said spindle may be forced inward. The movable cutting knife is conveniently provided with a spring 54 by which it is returned to its normal position

after it has been operated by the spindle. It will be readily understood that when the spindle 50 is forced inward the cam projection 51 will engage the operating arm 49 to swing the cutting knife 46 about the axis of its supporting rock shaft 48, to thereby effect a shearing cut between the movable and stationary blades 46—47. As the label strip passes between these two blades it will follow that such an operation severs the label strip at this point.

The operation of the machine is as follows: The normal condition of the parts is with the extremity of the label strip just at the point of engagement between the stationary and movable cutting blades, because at a previous operation this strip would have been severed at this point. Then in order to apply the label by means of the label applying roller 12, it is necessary to feed the end of the label forward to a point beneath the label applying roller and for this purpose the operating spindle 36 is depressed by manipulation of the thumb or finger piece 41. This causes a rotation of the feed roller 33 in the manner aforesaid and feeds the end of the strip forward to a point where it may be engaged by the label applying roller 12 and applied to the surface upon which the strip is to be received. The operation of forcing the end of the label strip forward also causes a small quantity of water to be forced on to the pad 19 in the manner aforesaid whereby moisture will be applied to the gummed surface of the label strip as it passes the said pad in reaching the roller 12. The end of the strip is now applied to the surface to which it is to be received, and a light pressure being applied to the roller 12 by pressing the machine as a whole in a downward direction, the machine is now drawn backward in the direction of the arrow in Fig. 1, until the required quantity of the label strip has been withdrawn from the magazine,—then the severing device is operated by manipulation of the thumb or finger piece 53, the label is severed between the blades 46 and 47, and the movement of the machine in the direction of the arrow is continued until the entire severed label is applied. Thereafter the label applying roller may run backward and forward several times over the label to press it firmly into place and squeeze out surplus moisture, this being permitted by the fact that the label applying roller is entirely free and unconnected with the feeding mechanism. After the label has been applied another label may be again applied in a similar manner by the proper manipulation of the two operating spindles 36—50 by which the fresh cut end of the strip is first fed forward to the label applying roller, and after a predetermined quantity of the label has been fed out the label is

again severed and so on. It will be readily understood from the foregoing that labels of any desired length may be employed, entirely under the will of the operator, for he has it entirely within his control as to at what point the label strip shall be severed. If desired, the entire length of this strip may be applied or substantially any portion thereof. When the label is being applied the machine will be preferably held at a slight angle from that shown in Fig. 1 of the drawings, the end of the reservoir being slightly elevated, and in order that the machine may rest in a position wherein the reservoir is substantially horizontal when not in use, I have provided a rear support 55 near the rear end of the reservoir which constitutes one of the supports for the machine, the label applying roller 12 forming the support therefor at the other end. I have also shown the reservoir 10 as provided with a suitable filling orifice 56, a screw cap or closure 57 being employed for closing the same. For some purposes it is desirable to employ a gage which may register with marks upon the label, such as will serve as a guide to the operator whereby he may readily sever the label at the proper point. For this purpose I have shown a gage 73 suitably supported by the casing and extending forward and across the front of the label applying roller. By noting the moment when the predetermined point in the label strip comes just beneath this gage, the label severing device may be operated at the proper time, as will be well understood.

In Figs. 5, 6, and 7 I have shown a machine somewhat modified in form, the specific means for feeding the strip forward being somewhat different. Furthermore, I have also shown in this construction means whereby the operation of the cutting mechanism will also act upon the flexible wall of the reservoir to feed the liquid. I find this convenient in some instances because it is sometimes necessary after the machine has been out of use for some time to operate against the flexible wall several times in order to force a greater quantity of the liquid out of the reservoir than would result from a single operation of the feeding means. The operation of the cutting mechanism prior to the feeding forward of the label strip will not affect the label strip in any way and thus by manipulation of this cutting means at this time, a sufficient quantity of the liquid may be forced out to saturate the pad prior to the normal operation of the machine. The feeding means for the label strip includes a longitudinally depressible spindle 58 corresponding to the spindle 36, but having no threaded exterior. In lieu thereof it is provided with a pin 59 which engages one arm 60 of a bell crank lever, the other arm 61 of which is in en-

gagement with a longitudinally movable tooth rack 62. The teeth of the rack 62 are arranged in mesh with a pinion 63 mounted upon a shaft 64 which carries a ratchet wheel 65 corresponding to the ratchet wheel 42 in the other structure, a feed wheel 66 carrying pawls for engagement with the said ratchet wheels being loosely mounted upon the said shaft 64. In this structure I have also done away with the presser roll 34 and in lieu thereof I have provided the feed roller 66 with a plurality of peripheral pins or projections which enter the label strip and so cause the positive forward feeding of the same. The arm 60 of the bell crank lever is arranged to engage a detent 67 carried by the flexible front wall 23 of the reservoir and so to depress the front wall at each feeding operation in the same manner as was effected through the cam projection 44 and the roller 45 in the other structure.

The operating spindle 68 for the cutter is quite similar to that of the other structure, being provided with a cam projection 69 corresponding with the cam projection 51 of the spindle 50 and arranged to engage the operating arm 70 of the movable cutting knife. The flexible wall 23 of the reservoir 10 is, however, provided with a second projection 71 arranged in close proximity to the extremity of the operating arm 70 of the cutting mechanism, whereby when the said operating arm is depressed it will bear against the said projection 71 and so force the flexible wall of the reservoir inward to effect a feeding operation of the liquid therein. I have also provided the movable cutting knife with a spring 72 so disposed that it will not only tend to return the knife to its normal position after a cutting operation, but it will also exert a tension to keep the face of the movable cutting blade against the face of the stationary cutter blade so as to insure an effective cutting operation. In other respects this structure is similar to the structures shown in Figs. 1 to 4 except that the shapes of the parts are somewhat different.

What I claim is:

1. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes, the said machine including a label applying element having a fixed axis, and adapted to be employed for applying a label by and in a complete movement of the whole machine, means for supporting a label strip, a reciprocating manual element located in proximity to the handle part, and means operated thereby for feeding a free end of the label strip to the said label applying element.

2. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes,

the said machine including a label applying roller, a magazine for labels, a reciprocating manual operating element in proximity to the handle part, and means operated thereby for feeding a free end of the label to a point beneath the said label applying roller, the portion of the said machine directly beneath the said roller being unobstructed whereby the machine may be moved as a whole into position to cause the roller to press the label upon an object to be labeled, and the roller may thereafter be rotated, through its engagement with the labeled object, by a further movement of the machine parallel with the face of the object.

3. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes, the said machine including a freely mounted label applying roller, a magazine for labels, a reciprocating manual operating element in proximity to the handle part, a feeding device for the labels, and means directly connecting the said operating element with the said feeding device whereby a movement of the former will be transmitted to the latter to feed a free end of the label to a point beneath the label applying roller, the portion of the said machine directly beneath the said roller being unobstructed whereby the machine may be moved as a whole into position to cause the roller to press the label upon an object to be labeled, and the roller may thereafter be rotated, through its engagement with the labeled object, by a further movement of the machine parallel with the face of the said object.

4. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes, the said machine including a label applying roller, a magazine for labels, a reciprocating manual operating element in proximity to the handle part, and means operated thereby, and wholly unconnected with the said label applying roller, for feeding a free end of the label to a point beneath the said label applying roller, the portion of the said machine directly beneath the said roller being unobstructed whereby the machine may be moved as a whole into position to cause the roller to press the label upon an object to be labeled, and the roller may thereafter be rotated, through its engagement with the labeled object, by a further movement of the machine parallel with the face of the object.

5. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes, the said machine including a label applying roller, a magazine for labels, a severing device arranged to the rear of the said roller, a reciprocating manual operating member in proximity to the handle part, and means operated thereby for feeding a free end of

the label from the said severing device to a point beneath the label applying roller, the portion of the said machine directly beneath the said roller being unobstructed whereby the machine may be moved as a whole into position to cause the roller to press the label upon an object to be labeled, and the roller may thereafter be rotated, through its engagement with the labeled object, by a further movement of the machine parallel with the face of the object.

6. A hand label-applying machine having a part constituting a handle by which it may be grasped for operating purposes, the said machine including a label applying element having a fixed axis, and adapted to be employed for applying a label by and in a complete movement of the whole machine, means for supporting a label strip, a severing device arranged to the rear of the said label applying element, a reciprocating manual operating element located in proximity to the handle part, and means operated thereby for feeding a free end of the label strip from the said severing device to a point beneath the said label applying element.

7. Label applying means comprising a label applying roller, means for supporting a label strip, a severing device for severing labels from the strip, the said severing device being arranged to the rear of the said roller, means for applying a liquid to the label at a point between the severing device and the label applying roller, a manual operating element, and means operated thereby for feeding the severed end of a label past the point at which the liquid is applied to the label, to the label applying roller.

8. Label applying means comprising a label applying roller, means for supporting a label strip, a severing device for cutting off the labels, a manual operating element for the severing device, a reservoir for liquid, and means operated by the manual operating means for the severing device, for forcing liquid from the reservoir.

9. Label applying means comprising a label applying roller, means for supporting a label strip, a severing device, a reservoir for liquid, feeding means for conveying the same to a point between the severing device and the label applying roller, a manual operating element, means operated thereby for feeding the end of the label strip past the point at which liquid is delivered from the reservoir, to the label applying roller, a manual operating element for the severing

device, and means operated thereby for forcing liquid from the reservoir through the conduit to its point of delivery.

10. Label applying means comprising a label applying roller, means for feeding a label strip thereto, severing means for the label strip, and a gage having a part located in advance of the said label applying roller.

11. Label applying means comprising a label applying element, means for feeding a label thereto, a liquid containing reservoir, and means for feeding liquid from the reservoir to the label, the said reservoir constituting a handle for the machine, and provided with exterior heat insulating means.

12. Label applying means comprising a label applying element, means for feeding a label thereto, a liquid containing reservoir, and means for feeding liquid from the reservoir to the label, the said reservoir constituting a handle for the machine, and provided with an air jacket and constituting heat insulating means.

13. In a gummed strip serving apparatus, the combination with a tank adapted to serve as a handle for operating the device, of damping means carried by said tank and supplied therefrom with means for making the strip adhesive, a presser roller arranged in advance of said damping means or pad, feeding means having an indeterminate quantity of movement, arranged rearwardly of said pad, and means for serving a section of strip from a continuous roll, arranged between said damping pad and said feeding means.

14. In a gummed strip serving apparatus, the combination with a tank adapted to serve as a handle for operating the device, of a feed roller journaled adjacent to the forward end thereof, a damping pad carried by said tank forwardly of said feed roller, said pad being supplied with moistening fluid from said tank, a presser roller journaled in bearings arranged forwardly of said pad, guide strips extending from adjacent to said feed roller to adjacent to said presser roller whereby the moistened strip is delivered below the said presser roller, shears arranged between said feed roller and said damping pad, means actuating said shears, and means whereby air is admitted to said tank to insure the continued feed of fluid to said pad.

HYLA F. MAYNES.

Witnesses:

F. GRAVES,

J. C. HARTMANN.