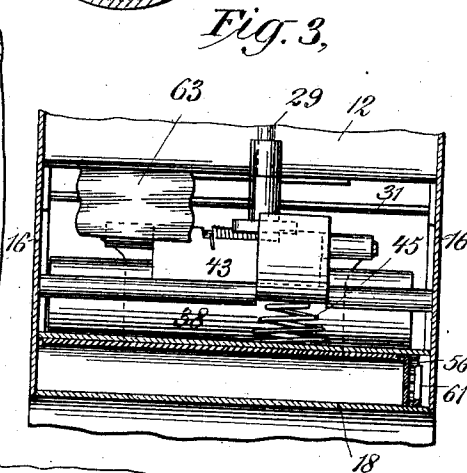
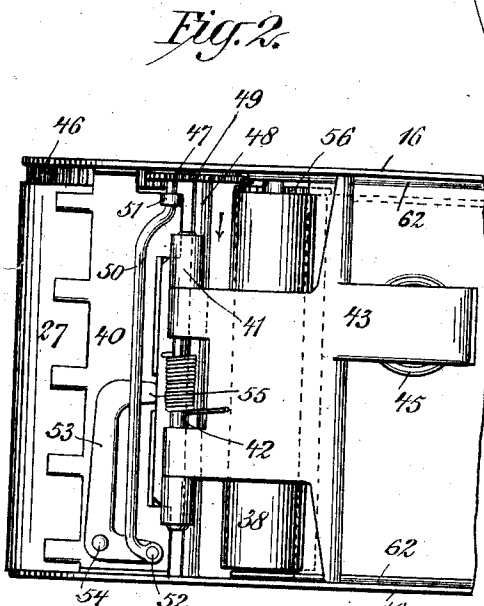
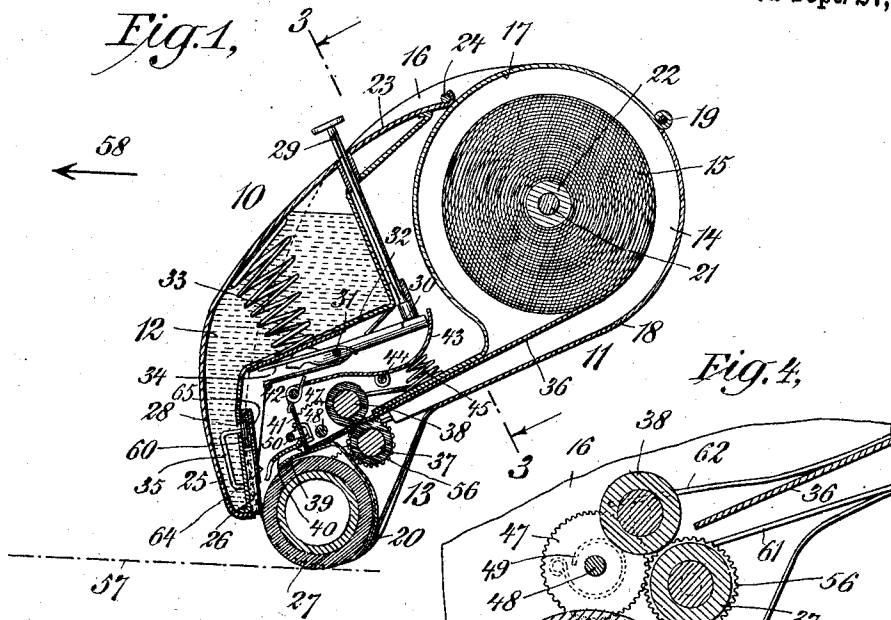


H. F. MAYNES.
MACHINE FOR APPLYING LABELS.
APPLICATION FILED MAY 20, 1910.

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MACHINE FOR APPLYING LABELS.

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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 a machine having a label applying roller therein by which the label may be pressed upon the surface upon which it is to be received with a rolling pressure.

The main objects of my invention are, first, to provide means whereby the label may not only be applied by the label applying roller, but the said roller may be run backward and forward over the label several times after the label has been initially applied, so as to cause the label to adhere firmly in position; second, to render the machine substantially automatic in its action so that a minimum amount of work will be imposed upon the operator other than that of merely moving the machine backward and forward to cause the roller to roll over the surface to which the label is to be applied; third, to provide a simple means for feeding labels, one at a time, from a continuous strip and severing them therefrom; fourth, to provide a simple means for applying moisture to the label applying element; fifth, to provide a simple, compact structure, inexpensive to build, and of such a character as to be unlikely to get out of order, and sixth, to render the various parts readily accessible for adjustment, replacement, and repairs.

To the foregoing ends, my invention consists in many novel details of construction and combinations of parts such as can be best understood from a description of a specific device constituting an embodiment of my invention, and hence I will now proceed to describe such an embodiment, 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 transverse section through a label applying machine constructed in accordance with my invention. Fig. 2 is a top view of the front part of the lower portion

of the machine, the part of the machine carrying the reservoir being removed. Fig. 3 is a detail sectional view upon the plane of the line 3—3 of Fig. 1. Fig. 4 is an enlarged detail view in transverse section of certain parts of the machine, including particularly the label applying roller, the feed roller and the gearing connecting them. Fig. 5 is a detail view in perspective of a portion of the label strip.

The machine, as a whole, comprises two main portions 10—11, the former including a tank or reservoir 12, and the latter the label applying means 13 and a chamber 14 for a coiled strip or roll of labels 15. The framework of the portion 11 includes side or end members 16, a stationary wall 17 connecting them, and a movable wall 18 hinged to the stationary portion at 19, as shown. The extremity of the movable wall 18 engages a stationary abutment 20 by which it is held in place. By swinging the movable wall 18 upon its hinge, access may be had to the chamber 14. Centrally disposed within the chamber 14 is an arbor 21 which forms a support for the roll 15. A hub 22 constituting a core for the roll is conveniently provided which finds a bearing upon the arbor 21. The frame of the part 10 and which in general contains the walls of the reservoir 12, has a rearwardly extending portion 23, the extremity of which engages a pin 24 disposed longitudinally between the end walls 16 of the portion 11, and by which the portion 10 is removably fitted to the said portion 11. The portion 10 is of a size to fit with some accuracy between the end wall 16 of the part 11 so that it is normally held in the position which is shown in Fig. 1, by friction, though other means may be provided to secure it in position if desired. When it is desired to remove the part 10 it may be swung about the pin 24 as a center, and the extremity of the part 16 thereby disengaged from the pin 24. The tank or reservoir 12 has a downwardly extending portion 25 at the forward end thereof, the extremity of which is fitted at the inner side with a pad 26 of absorbent material such as felt. This pad is partially contained in a housing 64, the extremity thereof extending forward into proximity to the periphery of a label applying roller 27 which is suitably journaled in and carried by the portion 11 of the machine.

The portion 10 carries an operating member 29, conveniently in the form of a finger piece which extends upward from the upper wall of the said part 10, and the lower end of which is in engagement with a rocking lever 30 pivoted on a bar 31. The outer extremity of the lever 30 bears against the under side of the lower wall 32 of the reservoir whereby when the finger piece 29 is depressed the said wall will be forced inward, the said wall being so constructed as to be sufficiently flexible to permit of this. A spring 33 within the reservoir opposes this movement, and a light spring 34, engaging the said lever 30, tends to return it to a normal position and to lift the finger piece 29. The forcing of the wall 32 inward by pressure applied to the finger 29, will have the effect of slightly reducing the area inclosed by the reservoir walls and hence to force liquid contained therein out of the orifice 28, in the same manner as oil is ordinarily forced out of the ordinary small oil can (commonly known as a "squirt-can") used for applying lubricating oil. The liquid thus forced through the orifice 28 will reach the pad 26 thereby supplying the required amount of liquid thereto so that it will impart moisture to anything coming in contact therewith. The housing 64 is shown as provided with a small opening 65 to which a small air valve 60 is fitted, the latter being carried by a spring finger 35 and normally held in a position to close the opening 65. After a small amount of liquid has been expelled from the reservoir, and upon release of pressure upon the wall 32 of the reservoir, there will be a slight suction tendency in the reservoir. This valve and the opening guarded thereby, is provided for the purpose of permitting air to be drawn into the reservoir to take the place of the liquid expelled.

The label strip is brought into proximity to the pad so that liquid from the reservoir may be applied thereto in the following manner: The extremity 36 of the label strip as it leaves the roll 15, passes between two feed rollers 37-38 suitably journaled in the frame of the portion 11, and thence forward in a direction between stationary guide pieces 39-40, the forward end, however, coming in contact, just as it reaches the rear end of the guide piece 40, with a hinged flap or tripping piece 41. This flap or tripping piece is pivotally connected at 42 to a lever 43 which is in turn pivotally connected at 44 to the frame of the portion 11, the said flap being spring actuated in a direction toward the feed roller 38, and the said strip in its forward movement, as will presently be explained, moves the said flap 41 in a direction away from the roller to the point shown in Fig. 1, wherein it is stopped by the rear end of the guide piece 40. The

lever 43 is spring actuated by means of a spring 45 in a direction to lift the rear end of the lever 43 and to depress the end which carries the flap 41. It is limited in its movement by the fact that the lower extremity of the said flap 41 rests upon the upper face of the guide strip 39. The rear end of the lever 43 comes into close proximity to the rear end of the lever 30 and the lower end of the finger piece 29. When the finger piece 29 is depressed, the lever 43 is rocked upon its support and the flap 41 thereby lifted. Being so lifted its lower end will be released from engagement with the forward end of the strip 36, and the light spring around the pivot 42 will then operate to swing the flap inward in a direction toward the roller 38 as has been above described.

The label applying roller 27 is provided at one end thereof with a spur gear 46, the teeth of which are arranged in mesh with the teeth of an idle pinion 47. The said idle pinion 47 is mounted upon a shaft 48, the extremities of which are journaled in the frame of the portion 11, but which is allowed some slight longitudinal movement therein. It is normally spring-pressed, by means of a light twisted spring 49 disposed between the said pinion and one of the walls 16 of the frame of the portion 11, in the direction of the arrow shown in Fig. 2, but it is held normally in its opposite position, viz., that in which it is shown in Fig. 2, by the engagement therewith of a shipper bar 50, the forward end of which slides in a bearing 51, and the rear end of which is pivoted at 52 to a latch 53, the latter being in turn pivoted at 54 to the guide piece 40, and provided with a finger 55 which is in normal engagement with the face of the flap 41. When the flap is in the position shown in Fig. 1 the latch 53 will have been moved to the position shown in Fig. 2. The feed roller 37 is provided at one end thereof with a pinion 56, the teeth of which are arranged under certain conditions to intermesh with the teeth of the pinion 47, but in the latter said position of the pinion 47 there will be no such engagement. When the hinged flap 41 moves inward toward the roller 38 by reason of the operation of the finger piece 29 as has just been described, the latch 53 will be relieved, thereby permitting the longitudinal withdrawal of the shipper rod 50 and the consequent movement of the pinion 47 and its shaft 48 in the direction of the arrow shown in Fig. 2, the extent of movement permitted being such as will cause the teeth of the pinion 47 to intermesh with the teeth of the pinion 56. It will be noted that the teeth of the spur gear 46 are sufficiently wide to maintain the teeth of the pinion 47 in engagement therewith in either of its said positions. From the

foregoing it will be seen that in the latter said position of the pinion 47 there will be a continuous train of gearing between the label applying roller 27 and the feed roller 37.

When it is desired to apply a label to such a surface as is indicated by the line 57 in Fig. 1, the machine is presented with respect to the said surface at about the angle shown in Fig. 1, the periphery of the label applying roller 27 being in engagement with the surface to which the label is to be applied. Some slight pressure being applied to the machine, and the finger piece 29 being manipulated as above described so as to release the flap 41, the machine is moved in the direction of the arrow 58 in Fig. 1, thereby rotating the label applying roller 27 in an anti-clockwise position as viewed in Fig. 1. A similar movement will be imparted therefrom to the feed roller 37 to feed the extremity of the label strip 36 forward. As the extremity moves forward it will pass beneath the guide strip 40 and by its engagement with the latter will be forced downward upon the periphery of the roller 27 so as to pass between the said roller and the pad 26. The pad 26 will now be in a moist condition and liquid from the tank will be applied to the rear face of the said strip 36. If an initially gummed strip is employed this liquid may be clear water, but if an ungummed strip be applied, this liquid may comprise adhesive material. Continued movement of the machine in the direction of the arrow 58 will cause the label to reach the surface 57 and thereafter as it continues to be fed forward, to be pressed between the surface of the roller 27 and the surface 57. The peripheral speeds of the rollers 27 and 37 are substantially the same so that a uniform feeding movement is applied. The strip is partially severed as is shown at Fig. 5, the lines of partial severance including slots 59, the portion of the strip occupied between two of those slots constituting a single label. In the continued forward movement of the machine one of the slots 59 will finally reach the lower end of the pivoted flap 41, and the pivoted flap will then drop through the said slot; and in the continued movement of the strip the said flap will then be carried forward until it again reaches the position shown in Fig. 1. This movement of the flap 41 will, by its engagement with the latch 53, force the shipper rod 50 over so as to cause the disengagement of the pinion 47 from the pinion 56 and further feeding movements of the feed roller 37 will then cease. By a slight continued movement of the machine such as will impart a slight continued movement of rotation to the roller 27, the label being applied will be severed from the strip, and by a final forward movement of the machine the severed

end will be pressed down upon the surface 57. By reason of the fact that the label applying roller 27 is now entirely free from engagement with the feed roller 37, the whole machine may now be moved backward and forward several times over the label so that the roller 27 in its engagement with the upper face of the label just applied, will press the label firmly into place, squeeze out any excess moisture between the label and the surface 57, and cause the label to firmly adhere, as will be well understood. As has been before stated, the forward end of the strip 36 prevents the return of the flap until the finger piece 29 is again manipulated.

From the foregoing it will be readily understood that in order to apply a succession of labels, one at a time, a single manipulation of the finger piece 29 is necessary for each label to be applied; that each label is applied individually, and that the machine will not feed another label, no matter how much rotational movement is given to the roller 27, until the finger piece 29 is again pressed down. It is, of course, not necessary or desirable, when applying labels one at a time, that the finger piece be kept down in its depressed position. It should be momentarily depressed and then relieved of pressure, and not again depressed until another label is to be applied. On the other hand, it will of course be understood that should it be desired to apply a strip, instead of a single label, then the finger piece should be held depressed until the desired amount of this strip has been applied. A pawl may be disposed for engagement with the teeth of the pinion 56 to prevent accidental rearward movement of the feed roller 37, during the subsequent backward and forward movements of the label applying roller, and in the drawings I have shown a short strip of spring metal 61, such as will act as a pawl for this purpose. I have also shown a spring 62 for pressing the feed roller 38 against the feed roller 37. There is no gear connection for the feed roller 38, but it will be understood that it will rotate by its frictional movement with the label strip as the same is fed forward by the feed roller 37.

A fresh roll 15 may readily be inserted in the chamber 14 when a previously employed roll has been used up, access being had to the said chamber by swinging open the movable wall 18 as above described, and the reservoir 12 may be recharged through a charging opening conveniently closed by a screw cap 63 as shown in Fig. 3.

What I claim is:

1. A label applying machine comprising a freely mounted roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, means for connecting the two said rollers in rotative engagement,

whereby the first said roller may constitute an operating element for the said feed roller, and releasing means for disconnecting the rollers from such rotative engagement, whereby at such times the first said roller may rotate freely.

2. A label applying machine comprising a freely mounted roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, gearing for connecting the two said rollers in rotative engagement, whereby the first said roller may constitute an operating element for the said feed roller, and tripping means for disengaging the gearing, whereby at such times the first said roller may rotate freely.

3. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, means for connecting the two said rollers in rotative engagement, and releasing means automatically operated by the movement of the label for disconnecting the rollers from such rotative engagement.

4. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, gearing for connecting the two said rollers in rotative engagement, and tripping means automatically operated by the movement of the label for disengaging the gearing.

5. A machine for applying labels from a continuous strip, comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding the label strip, means for connecting the two said rollers in rotative engagement, a tripping piece for engagement with the said label strip, and means operated by the movement of the tripping piece when so engaged by the label strip, for disconnecting the said rollers from their rotative engagement.

6. A machine for applying labels comprising a reservoir for containing a liquid, a feed roller for the label, a label applying roller, normally disengaged means for connecting the feed roller and the label applying roller, a manual operating member, and means operated by the manual operating member for ejecting a small quantity of the liquid from the reservoir and for causing the engagement of the connecting means between the feed and the label applying rollers.

7. A machine for applying labels comprising a reservoir for containing a liquid, a feed roller for the label, a label applying roller, normally disengaged means for connecting the feed roller and the label applying roller, a manual operating member, means operated by the manual operating member for ejecting a small quantity of the liquid from the reservoir and for causing the en-

gagement of the connecting means between the feed and the label applying rollers, and means operated by the movement of the label for again causing the disengagement of the said connecting means.

8. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, means for connecting the two said rollers in rotative engagement, releasing means for disconnecting the rollers from such rotative engagement, and a manually operated means for causing the reengagement of the disconnecting means to again connect the rollers in rotative engagement.

9. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, means for connecting the two said rollers in rotative engagement, releasing means automatically operated by the movement of the label for disconnecting the rollers from such rotative engagement, and a manually operated means for causing the reengagement of the said connecting means to again connect the rollers in rotative engagement.

10. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, gearing for connecting the two said rollers in rotative engagement, tripping means for disengaging the gearing, and a manually operated means for re-setting the said tripping means.

11. A label applying machine comprising a roller for engagement with the surface to which the label is to be applied, a feed roller for feeding a label to the first said roller, gearing for connecting the two said rollers in rotative engagement, tripping means automatically operated by the movement of the label for disengaging the gearing, and a manually operated means for re-setting the said tripping means.

12. In a machine of the character described, the combination with a label applying roller and label feeding means normally operated by the said label applying roller, of means automatically operated after a predetermined movement of the feeding means for disengaging the said feeding means from connection with the said label applying roller, the said label applying roller being at such times arranged for entirely free rotation.

13. In a machine of the character described, the combination with a label applying roller and feeding means for feeding a label thereto, of manually operated means for connecting the said feeding means with the said roller, and means automatically operated after a predetermined movement of

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the feeding means for disengaging the said feeding means from connection with the said label applying roller.

14. In a machine of the character described, the combination with a label applying roller and label feeding means normally operated by the said label applying roller, of means automatically operated by the movement of the label for disengaging the said feeding means from connection with the said label applying roller.

15. In a machine of the character described, the combination with a label applying roller and feeding means for feeding a label thereto, of manually operated means for connecting the said feeding means with the said roller, and means automatically operated by the movement of the label for disengaging the said feeding means from connection with the said label applying roller.

16. In a machine of the character described, the combination with a roller for feeding a continuous label strip, the said strip having openings therein partially severing the said strip into individual labels, of a label applying roller, means for connecting the two said rollers in rotative engagement, a pivoted tripping piece for engagement with the said strip arranged to enter the openings therein and to be moved forward by the said strip in its feeding movement when received in the said openings, means operated by the said tripping piece in its said forward movement for disconnecting the said rollers from rotative engagement, and a manual operating member

for lifting the said tripping piece away from the said strip to relieve it from engagement therewith and thereby to permit the said connecting means between the two said rollers to again operatively engage them.

17. In a machine of the character described, the combination with a label applying element, of a closed reservoir for containing liquid, a pad located in proximity to the said reservoir and to the said label applying element, the said reservoir having an opening therein for supplying liquid therefrom to the said pad, and one of the walls of the said reservoir being flexible, and means for depressing the flexible wall of the reservoir to expel liquid through the said opening to moisten the pad.

18. In a machine of the character described, the combination with a label applying element, of a closed reservoir for containing liquid, a pad located in proximity to the said reservoir and to the label applying element, the said reservoir having an opening therein for supplying liquid therefrom to the said pad, and one of the walls of the said reservoir being flexible, means for depressing the flexible wall of the reservoir to expel liquid through the said opening to moisten the pad, and means for admitting air to the said reservoir to take the place of liquid expelled therefrom.

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Witnesses:

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