

(No Model.)

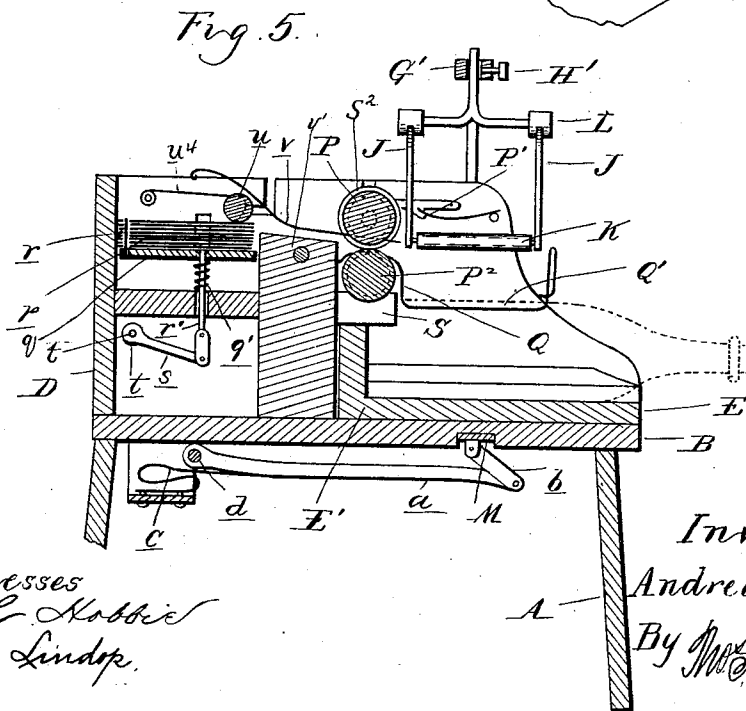
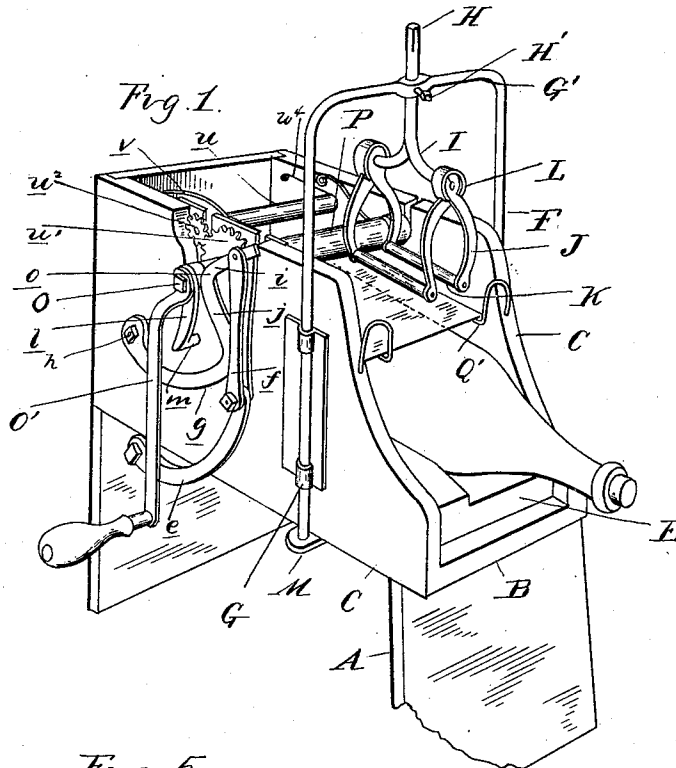
2 Sheets—Sheet 1.

A. EYMER.

MACHINE FOR PASTING LABELS ON BOTTLES.

No. 479,209.

Patented July 19, 1892.



Witnesses
A. L. Kobbie
A. L. Lindop.

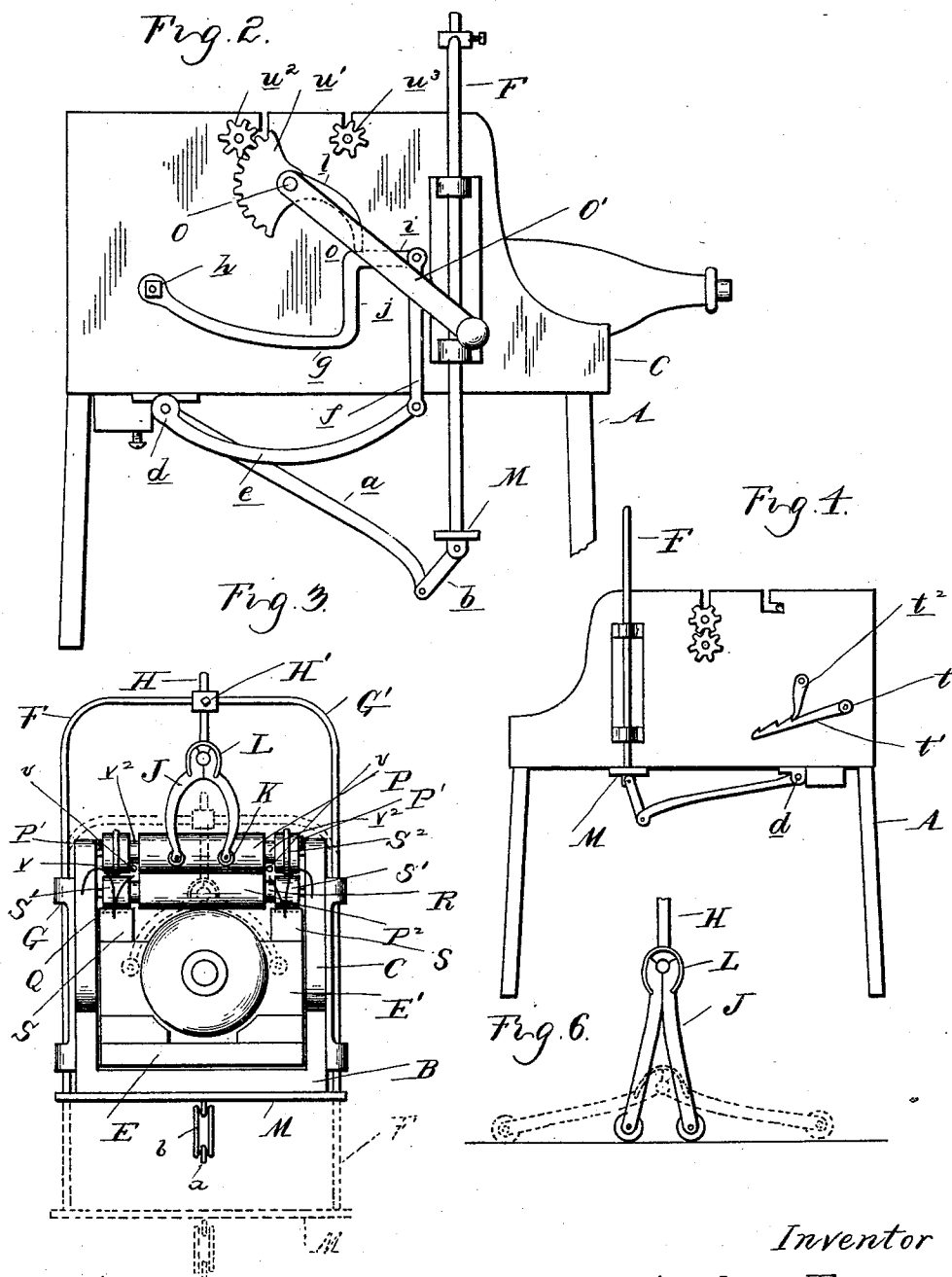
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MACHINE FOR PASTING LABELS ON BOTTLES.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR PASTING LABELS ON BOTTLES.

SPECIFICATION forming part of Letters Patent No. 479,209, dated July 19, 1892.

Application filed November 16, 1891. Serial No. 411,988. (No model.)

To all whom it may concern:

Be it known that I, ANDREW EYMER, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Machines for Pasting Labels on Bottles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in labeling-machines especially designed for applying labels to cylindrical bodies, such as bottles, cans, &c.; and the invention consists in the peculiar construction of the label-pasting mechanism and feeding and gumming mechanism, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a perspective view of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a front elevation. Fig. 4 is a side elevation showing the opposite side from that shown in Fig. 2. Fig. 5 is a vertical central longitudinal section. Fig. 6 is an elevation of a modified form of pasting-rollers for flat or square packages.

A are supporting-standards.

B is a base-plate. C are side pieces extending vertically above said base, and D is an end piece between the sides at one end, the whole forming a substantially box-shaped open frame in which the operating mechanism is supported.

At one side of the frame and within the same is secured a holder E of suitable shape to support the bottle or can to which the label is to be affixed, the end E' forming a stop against which the end of the bottle or can may be abutted.

F is a frame slidably secured in the bearing G on both sides of the main frame of the machine, the upper ends of the frame F being connected together by a cross-bar G', which extends across the frame above the holder E for the bottle or can.

H is a vertical standard adjustably secured centrally to the cross-bar G', passing through an aperture therein and held in its adjusted position by means of a set-screw H'. This standard at its lower end has the horizontal head I extending lengthwise of the bottle or

can and carrying at each end the oppositely-curved arms J, pivoted to the ends of the head and carrying at their lower ends the pressing-rollers K.

L is a clamping-spring embracing the pivotal point of the arms J and adapted to hold them normally in a substantially vertical position, as shown in Fig. 1, in which the rollers are slightly separated, so as to be each to one side of the vertical axis of the bottle or can to which the label is to be affixed.

The frame F at its lower end is connected to the cross-bar M above the main frame of the machine, as shown in Fig. 3, and this frame is reciprocated vertically by means of the following mechanism.

a is a lever pivoted at the rear end of the base and extending forwardly beneath the same and connected to the cross-bar M by means of a link b, a spring c acting with its tension to hold this lever normally in line with the base, which also holds the frame F in its uppermost position. The shaft d, upon which the lever a is secured, extends to the side of the machine and is there provided with the curved crank-arm e.

f is a link pivotally connected to the outer end of the crank-arm e and at its upper end pivotally connected with the actuating-lever g, which is pivoted upon the shaft h near the rear of the frame. This lever is provided with a horizontal portion i at its forward end and the vertical portion j.

O is the main drive-shaft of the machine, journaled in suitable bearings and extending across the frame, being provided with a suitable crank-handle O' to actuate the same. If the machine is desired to be driven by power, a pulley may be substituted for this crank, connected with a suitable source of power by means of a belt or chain.

l is a crank-arm secured to the shaft O and provided with a laterally-projecting finger m. In the rotation of the shaft O by means of its crank-arm O' the finger m on the crank l will strike upon the end of the portion i of the lever g and depress that lever, in the meanwhile traveling toward the shoulder o between the portion i and the portion j, and in this downward movement it rocks the shaft d (through the link f and crank e) and carries with it a lever a, as plainly shown in Fig.

2, which also draws downward the frame F into the position shown in dotted lines in Fig. 3. As soon as the finger *m* reaches the shoulder *o* the lever *g* is free to rise and is carried upward by the tension of the spring *c* upon the lever *a*.

At the rear end of the main frame is a label-receptacle *p*, having a bottom *q*, pressed upward by means of the spring *q'*. *r* is a pin secured to said bottom *q* at the rear edge thereof and adapted to pass through the rear edge of the labels. *r'* is a rod connected to the bottom *q* at the upper end and at its lower end connected to the crank-arm *s*, secured to the shaft *t*, which outside of the casing is provided with a notched bar *t'*, with which a locking-pawl *t''* is adapted to engage, all so arranged that by drawing down the bar *t'* the bottom *q* may be lowered to fill the label-receptacle or to withdraw the labels out of contact with the feed mechanism, the pawl serving to retain the bottom in a lowered position during the act of filling.

u is a spring-pressed roller adapted to bear upon the forward end of the labels and intermittently rotated by means of the segmental gear *u'* upon the shaft *O* and meshing with the pinion *u''* upon the end of the shaft of the roller *u*, which latter is engaged by the spring *u'''*, secured to the side of the casing, as shown in Fig. 5.

v are guide-arms extending over the guideway or table *v'* in advance of the spring-pressed roller *u* and entering grooves *v''*, formed at each end of the roller *P*, which is located at the forward end of the guideway *v'*, the guide-arms *v* passing beneath and some distance in front of the roller *P*, as plainly shown in Fig. 5, for the purpose hereinafter described. The roller *P* is journaled in spring-bearings of any suitable construction. I have shown a spring-actuated lever *P'*, bearing upon the shaft of the roller *P* at each end thereof to hold it tightly in contact with the paste-roller *P''* directly below the roller *P*, which latter roller is preferably journaled in stationary bearings.

Q are guide-arms passing over the roller *P''* in grooves *R*, formed at each end of that roller. These guide-arms extend down in front of the roller *P''* and have the horizontal portions *Q'*, which form the label-support, directly above and on each side of the bottle or can to which the label is to be affixed, being secured at their outer ends to the forward edge of the frame. The label-holders are preferably formed of wire and are arranged some distance away from the sides of the frame, so that the label, if of thin paper, will not fall between them, and at the same time they are separated to allow the arms *J* to freely pass between.

S are paste-pans in which the end sections *S'* of the rollers *P''* dip in their rotation.

S'' are flanges formed upon the periphery of the roller *P* at each end thereof and held

tightly in contact with the section *S'* of the roller *P''* by means of the spring-actuated arms *P'*.

The parts being thus constructed and the label-receptacle filled with labels, the operation of the device is as follows: The operator turning the crank, the segmental gear *u'* will engage with the pinion *u''* and turn the feed-roller *u*, carrying forward a single label, which will be torn away from the pin *r* and fed upon the guideway *v'*. In starting the machine the first turn of the crank will not feed the label upon the label-holders, merely feeding it from the label-receptacles to the pasting and delivery rollers *P* *P''*. The next turn of the crank will engage the segmental gear *u'*, with the pinion *u''* upon the end of the shaft of the roller *P*, and rotate that roller to feed forward the label which had previously been fed upon the table *v'*, at the same time gumming the under side of the roller in two parallel strips beneath the flanges *S''*. To prevent the label from being carried up over the roller *P* or down over the roller *P''*, the guides *v* and *Q* are provided substantially as previously described. As the label leaves the rollers *P''*, gummed as described, it falls upon the label-holders *Q'* directly over the bottle, which is shown in position in Figs. 1, 3, and 5. Another label is fed forward in the first part of the turning of the crank by means of the pinion *u''* and roller *u*, as previously described. As soon as the segmental gear *u'* has passed out of engagement with the pinion *u''* and the label has been fed upon the label-holder, as described, the frame *F* is downwardly moved by the mechanism and in the manner described, carrying the arms *J*, with the rollers *K*, downward and striking the label, releasing it from the label-holders, from whence it falls upon the bottle. The rollers and arms are separated, being held close in contact with the bottle around the sides, smoothing out the label, and pressing the gummed edges thereof firmly in position upon the bottle. This will be accomplished about the time that the finger *m* passes over the shoulder *o*, and the arms *j* will be lifted by the spring *c*, as previously described, ready for the insertion of another bottle and another operation for attaching the label.

Instead of using the feed mechanism which I have described, any other feed mechanisms may be employed in connection with the pasting-rollers *K*, carried by the spring-arms *J*, and in place of gumming the label the gum may be applied upon the bottle itself with equally good results. I prefer, however, to use the mechanism in its entirety, as herein shown.

I can adapt my machine for the applying of labels to flat or square packages by the use of arms *J*, as shown in Fig. 6. The only difference between these arms and those shown in Fig. 1 is that they are straight or curved outward instead of inwardly, so that

the rollers run in a horizontal path as the jaws are spread in the downward movement of the head I.

What I claim as my invention is—

5 1. In a labeling-machine, the combination, with sides and holder, of a vertically-disposed frame movably secured on the sides, consisting of two side bars and a top cross-bar having an aperture therein, a vertical standard 10 passing through the aperture, a set-screw carried by the cross-bar engaging the standard, a horizontal head on the standard, spring-arms on the opposite ends of the heads, and means for actuating the frame, substantially 15 as described.

2. In a labeling-machine, the combination, with a frame having a label-receptacle therein, of a feed-roll, gumming-rolls, guide-arms between the feed and gumming rolls, pressing- 20 rolls, and means for actuating the feed and gumming rolls and pressing-rolls, substantially as described.

3. In a labeling-machine, the combination, with the frame and means for pressing the 25 labels on the articles, of a label-receptacle in the frame, a spring for normally forcing the bottom of the receptacle up, and means for holding the bottom down against the pressure of the spring, substantially as described.

30 4. In a labeling-machine, the combination, with the frame, of a label-receptacle therein having a movable bottom, a spring below the bottom engaging the same, means for holding the bottom in a lowered position against the 35 tension of the spring, a feed-roll, gumming-rolls, and reciprocating presser-rolls, substantially as described.

5. In a labeling-machine, the combination, with the actuating mechanism, of the feed- 40 roller *u*, the table *v'*, and the rolls *P P*², of the guides *v*, extending above the table *v'* and beyond the roller *P*, passing through grooves

formed in said roller, substantially as and for the purpose described.

6. In a labeling-machine, the combination, 45 with the label-receptacle, of the bottom board *q*, the spring *q'* for raising the same, the rod *r'*, lever *s*, shaft *t*, notched crank-arm *t'*, and the pawl *t''*, engaging therewith, substantially as and for the purpose described. 50

7. In a labeling-machine, the combination, with the feed-roller and its drive-pinion, the delivery and gumming rollers, and a drive- 55 pinion therefor, of a main drive-shaft between said pinions and a segmental gear thereon adapted to successively engage with said pinions to intermittently actuate the same, substantially as described.

8. In a labeling-machine, the combination, with a frame, of a reciprocating label-attaching 60 device, a label-receptacle formed in the frame, a feed mechanism for moving the labels from the label-receptacle, a single driving-shaft and actuating connection between said shaft, feed mechanism, and attaching device, substan- 65 tially as described.

9. In a labeling-machine, the combination, with the label-attaching mechanism, of means 70 for reciprocating the same intermittently, consisting of the crank-shaft *O*, crank-arm *l* thereon, the actuating-lever *g*, having the portions *i j* separated by a shoulder *o*, the lever *e*, linked to said actuating-lever at one end, the shaft *d*, to which the other end of the lever 75 is secured, the lever *a*, secured to the shaft *d*, and links to the reciprocating frame, and the spring *c*, the parts arranged and operating substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW EYMER.

Witnesses:

M. B. O'DOGHERTY,
N. L. LINDOP.