(No Model.)

2 Sheets—Sheet 1.

S. L. SALOMON.

LABELING MACHINE.

No. 447,907. Patented Mar. 10, 1891.

Fig. 1.

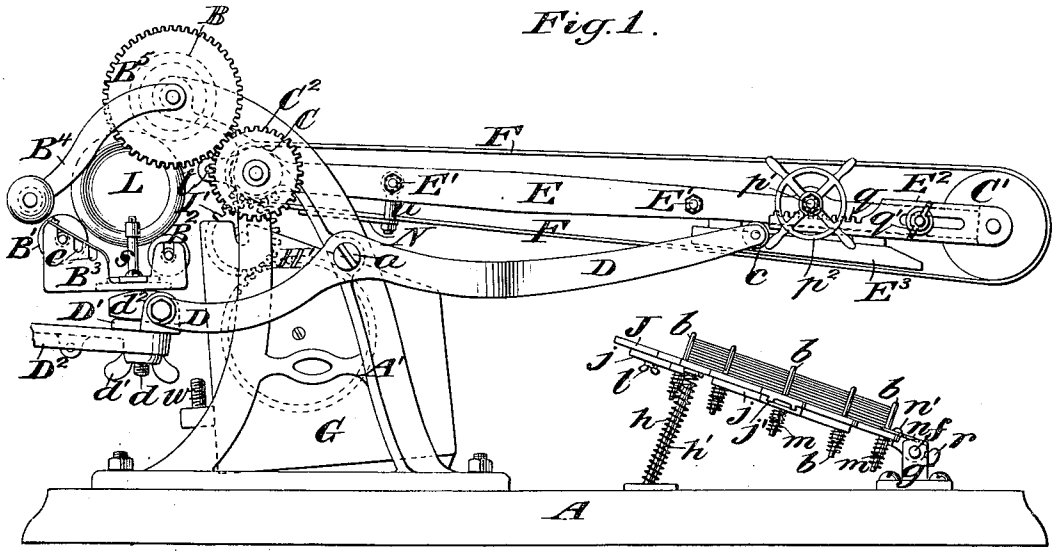
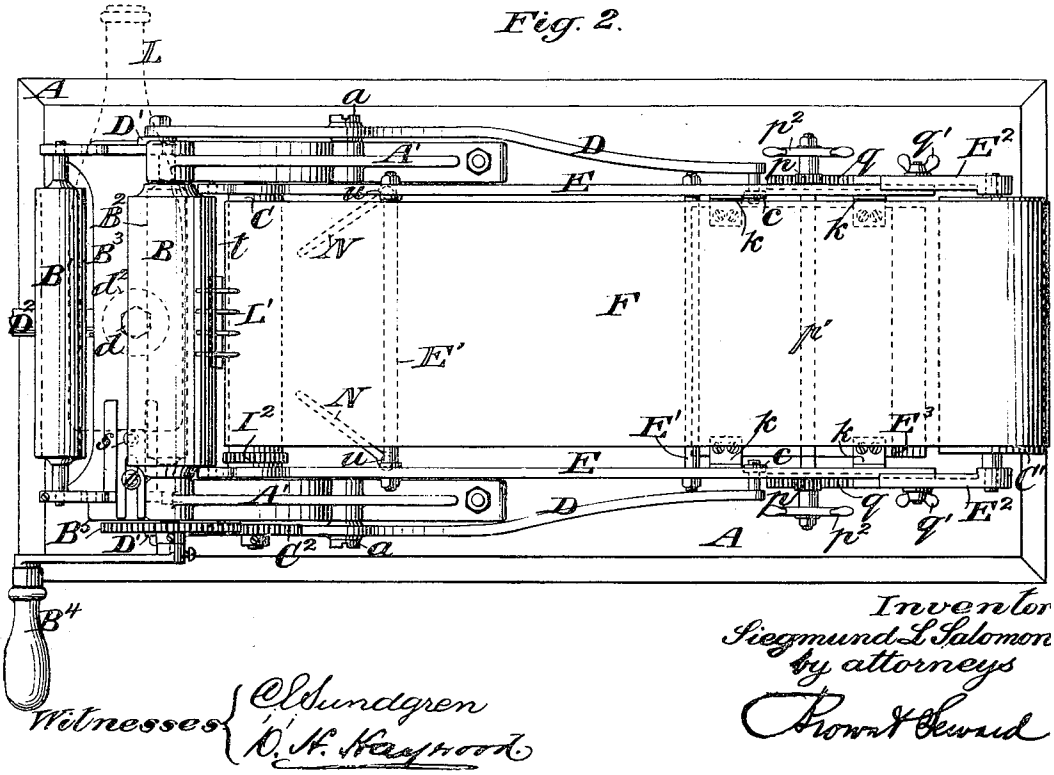


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

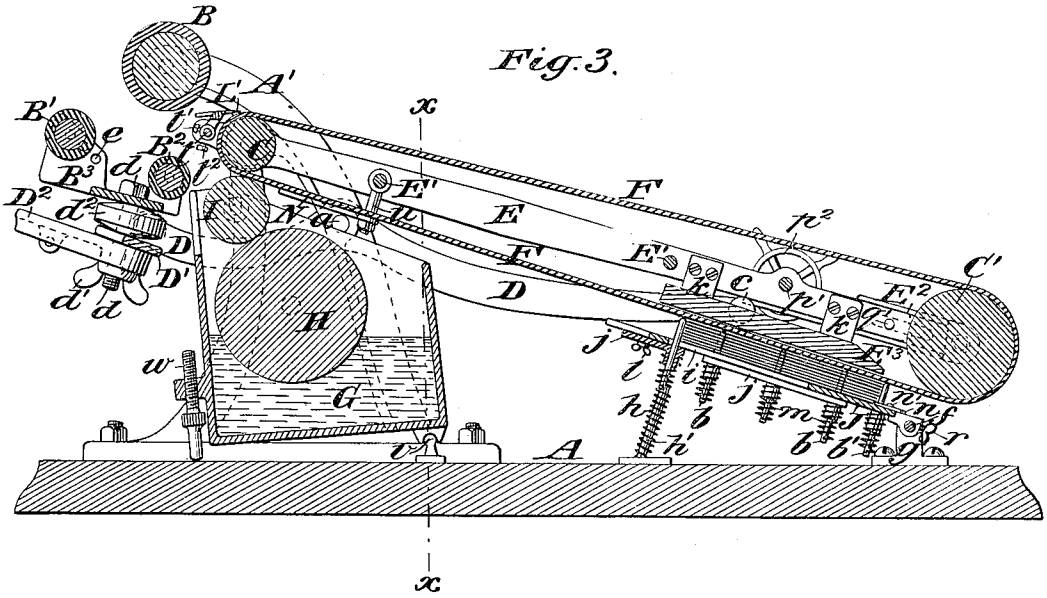


Fig. 4.

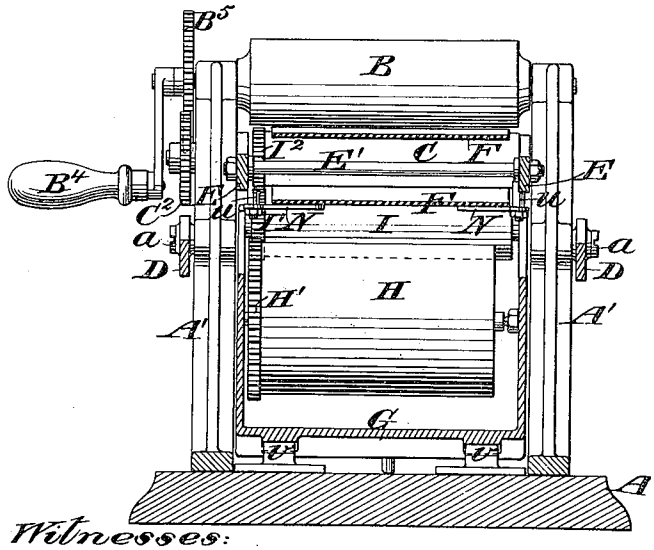
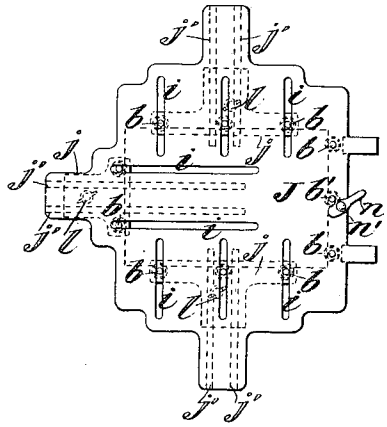


Fig. 5.



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UNITED STATES PATENT OFFICE.

SIEGMUND L. SALOMON, OF NEW YORK, N. Y.

LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 447,907, dated March 10, 1891.

Application filed October 22, 1890. Serial No. 368,931. (No model.)

To all whom it may concern:

Be it known that I, SIEGMUND LEYSER SALOMON, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Labeling-Machines, of which the following is a specification.

My improvement relates especially to labeling-machines for labeling bottles and other cylindrical vessels or packages, and more particularly to machines in which the labels are pasted and carried to the bottles or packages by means of a traveling apron, to which paste is applied.

I will first describe my invention in detail with reference to the accompanying drawings, and afterward point out its novelty in claims.

Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 represents a central longitudinal section of the same. Fig. 4 represents a transverse section taken about on the line *x x* of Fig. 3. Fig. 5 is a plan view of the label-receptacle.

Similar letters of reference designate corresponding parts in all the figures.

A A′ designate a frame consisting of a bed-plate or base A and fixed standards A′, in which are journaled a roller B and a roller C, and in which a lever D is fulcrumed at *a*.

E E′ designate a frame, the front end of which is pivoted upon the journal or shaft of the roller C, and in the rear end of which is journaled a roller C′. The two rollers C C′ carry a traveling apron F. The said rollers may be of wood or other suitable material and the apron of india-rubber or other suitable fabric. The frame E E′ and the apron F are capable of a swinging or rising and falling motion about the axis of the roller C.

Under the roller C is arranged a paste-box G, in which runs a paste-supplying roller H and a paste-transferring roller I, the latter roller being between the roller H and apron-roller C to transfer paste from the roller H to the apron close to where the apron is supported by the said roller C. Under the part of the apron-frame E E′ near the other roller C′ is arranged a label-receptacle, consisting principally of a plate or table J and a series of adjustable spring-supported pins *b b′*. The lever D, fulcrumed on the frame A at *a*, as hereinbefore mentioned, is duplex, there being one member on each side of the machine, and its two members are connected together at their outer ends by a cross-bar D′, so that they work in unison. Their inner ends are arranged to operate upon the under side of the apron-frame E E′ for the purpose of lifting the same, the said ends being furnished with anti-friction rollers *c* below the said frame.

The lever D, besides serving the purpose of lifting the apron-frame E and apron F, serves to carry two rollers B′ B^2, which, together with the roller B, hereinbefore mentioned, constitute a holder with rolling surfaces, which I will hereinafter speak of as the "bottle-holder," though it may be used for holding cans or any cylindric bodies or packages to which it may be desired to apply labels. In Fig. 1 a bottle L is shown in the holder. The rollers B B′ B^2 may have their bodies made of wood, metal, or other rigid material, and their surfaces of vulcanized india-rubber or other yielding material, so that they will adapt themselves to any irregular surfaces of the bodies to be labeled, and in the case of glass bottles will obviate breakage. The rollers B′ B^2 are journaled in a yoke B^3, which is secured to the cross-bar D′ of the lever D by means of a screw-bolt *d* and a nut *d′*, and an elastic collar or cushion d^2, of india-rubber or other suitable material, being applied around the said bolt between the yoke and cross-bar to enable the yoke and the rollers B′ B^2 to adapt themselves to the longitudinal profile of any slightly-tapered bottle or other article to be labeled. The cross-bar D′ has attached to it a handle D^2, by the depression of which the rollers B′ B^2, constituting a seat or resting-place for the bottle or other article, are lowered to permit the introduction and removal of the bottle or other article, the same movement of the handle serving to raise the inner end of the lever D, and so lift up the apron-frame E and apron F. The yoke B^3 has provided in it several sets of holes *e* to constitute different bearings for the journals of the roller B′, and provide by the shifting of said roller between said bearings for adapting the holder to bottles or articles of different sizes.

The plate or table J of the label-receptacle

has its rear edge secured to a rock-shaft f, fitted to bearings in boxes g upon the fixed plate or table A. Its forward end is supported by springs h, which are coiled around fixed posts h'. The said plate or table J is slotted, as shown at $i\ i$ in Fig. 5, for the passage through it of the spring-supported pins $b\ b'$, which are carried by plates j, which are fitted to dovetailed guides j' on the bottom of the said table or plate, and which are capable of being secured to the said plate or table by binding-screws and nuts l when adjusted to bring the said pins $b\ b'$ to the proper position, according to the form and size of the labels. The said pins $b\ b'$ form the sides of the label-receptacle. They pass through bosses provided on the plates j, and are connected with the said plates by springs m, which act to press them upward that they may project above the table J as high as may be required for the highest pile of labels which it may be desired to place in the receptacle. The table J is represented as having an inclination downward and rearward. By this arrangement the labels will adjust themselves against the lowermost pins $b\ b'$.

In order to provide for labels of circular or oval form so adjusting themselves, provision is made for depressing the central pin b' and holding it depressed, so that the labels may pass over it and adjust themselves against the two pins b on opposite sides of the said pin b'. This provision is represented in Figs. 1, 3, and 5 as consisting of a small flat button n, pivoted to the table by a pin n'. When the pin b' is depressed below the table, this button may be turned over the top of it, and will thus hold it down.

Above the label-receptacle there is provided within the apron F a platen E^3, which is rigidly secured at $k\ k$ to the apron-frame, and the under face of which is parallel with and nearly close to the lower run of the apron to press the latter closely upon the top label of the pile, so that paste may be applied by the apron to the whole surface of the label and that the picking up of the so-pasted label may be insured.

In order to provide for the taking up of the labels on the proper part of the width of the apron and placing it in a proper position lengthwise of the bottle or other article, the label-receptacle is bodily movable lengthwise of its rock-shaft f, and is capable of being secured in any position thereon by means of set-screws r, and in order to enable the attendant to place the bottle or other article in the bottle-holder in proper position lengthwise to receive the labels an adjustable gage-pin s, furnished with an anti-friction roller, against which one end of the said article is to be placed, is provided upon the holder-yoke B^3.

L′ is the stripper for stripping the pasted labels from the apron, consisting of a series of tines and a suitable stock, which is fitted to a shaft t, the ends of which are secured in portions of the sides of the apron-frame, which project beyond the roller C toward the bottle-holder. This stripper is adjustable about the axis of the shaft t to bring its points in suitable proximity to the apron to strip off the labels without tearing the apron. This adjustment may be effected by turning the stock of the stripper on the shaft t or by turning the said shaft in its bearings in the apron-frame, and the adjustment may be secured by set-screws t' or t^2, as will be readily understood by reference to Fig. 3. The stripper being attached to the apron-frame moves with it and injury to its points by the apron and to the apron by its points when the apron is lifted is prevented.

In order to provide for the removal of the paste from all parts of the width of the apron but those which are to paste and receive the label, and thus prevent the pasting of those portions of the bottle or other article not to be covered by the label, I provide a scraper N for either or each edge of the apron. I have represented one on each side. These scrapers consist of blades which lie close against the under part of the belt over the paste-box, and they are represented as pivoted to small posts u, which are firmly secured to the sides E of the frame, the said blades being pivoted on the lower ends of the said posts so that they may be set at different angles across the apron, as may be understood by reference to Fig. 2, and thereby be made to reach across a greater or less portion of the width of the apron.

To provide for the proper adjustment of the tension of the apron, the bearings for the journals of the roller C′ are provided in sliding pieces E^2, which are movable lengthwise on the sides E of the apron-frame by means of pinions p and toothed racks q, the said racks being upon the said sliding pieces and the said pinions on a shaft p', which works in bearings in the sides E of the frame and which is capable of being turned by a hand-wheel p^2. The adjustment may be secured by set-screws and nuts q', as shown in Figs. 1 and 2.

To provide for giving just as thick a coating of paste to the apron as may be desired, I make the paste-box and the roller H within it adjustable toward and from the apron. This I have represented as accomplished by supporting the rear side of the box on fixed bearings v, on which it may be tilted, and supporting its rear end on an adjusting-screw w. By turning this screw the box and the roller H are raised or depressed, and so caused to produce greater or less pressure between the rollers H I and between the latter roller and the apron. By allowing the roller I to run loosely between the roller H and the apron a copious supply of paste is given to the apron, and by pressing it more closely a less copious supply is given.

The roller B is furnished with a hand-crank

B^4, by which to turn it, and is also furnished with a spur-gear B^5, gearing with a spur-gear C^2 on the apron-roller C. On the shaft of the apron-roller C is another gear I^2, which gears with a gear I' on the paste-transferring roller I, the said gear I' gearing with one II' on the paste-supplying roller II. By turning the crank the roller is caused to turn a bottle or other cylindrical article in the holder, and the gearing just described is at the same time caused to produce the rotation of the roller C and the travel of the belt, and also caused to produce the rotation of the two paste-rollers.

To operate the machine, the paste-box having been supplied with paste and the receptacle J *b b'* having been supplied with labels, the attendant depresses the handle D^2 to lift the apron out of contact with the labels, and he then turns the crank B^4 long enough to give the apron sufficient movement to paste a suitable portion of its length to reach over the labels. He then raises the handle and allows the apron to drop upon the top label, as shown in Fig. 3, and afterward depresses the handle low enough to permit the introduction of the article to be pasted, which I will suppose to be a bottle. This movement causes the pasted apron to pick up the top label. He next places the bottle on the holder, as shown in Fig. 1 and in dotted outline in Fig. 2, with its bottom against the gage *s*, and then allows the handle to rise high enough to clamp the bottle between the rolling surfaces of the holder—viz., the rollers B B' B^2. He then, while holding the apron clear of the pile of labels by the handle D^2, turns the crank to simultaneously produce the rotation of the bottle and the movement of the apron by which the pasted and picked-up label is carried to the bottle, the said label being stripped from the apron by the stripper L' just as it arrives at the bottle, and then taken up by the bottle and rolled closely thereon by the action of the roller B, which produces the rotary movement of the bottle, the latter in turn producing by its friction the rotation of the rollers B' B^2, which assist in pressing the label tightly onto the bottle. The handle may then be depressed to open the holder, and after the removal of the bottle the handle is allowed to rise to let down the apron to take a new label and the several operations are repeated, as herein described.

In the operation of pasting the label and picking it up from the apron it is obvious that the apron must come down close to the whole surface of the label in order to properly apply the paste thereto. This would hardly be possible in case the label-receptacle should be supported with absolute rigidity, as the angle at which the apron would strike the top label would vary according to the height of the pile. It is to enable the top label to adjust itself to the angle of the apron that the receptacle is pivoted, as by supporting it on the rock-shaft *f* at its rear end, and supported on a yielding bearing, as the springs *h*, at its front end.

It is obvious that a treadle may be applied to the lever D instead of the handle D^2.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a bottle-holder having rolling surfaces, a receptacle for labels having an open top, and a traveling paste-carrying apron capable of a rising and falling motion for the purpose of pasting the labels in said receptacle, picking them up therefrom, and carrying them to a bottle or package in said holder, substantially as herein described.

2. The combination of a bottle-holder having rolling surfaces, a receptacle for labels having an open top, a traveling paste-carrying apron and rollers therefor, and a frame for said rollers arranged to swing to and fro about the axis of one of said rollers toward and from said receptacle, substantially as and for the purpose herein set forth.

3. The combination of a bottle-holder having rolling surfaces, a receptacle for labels having an open top, a traveling paste-carrying apron and rollers therefor, a frame for said rollers arranged to swing to and fro about the axis of one of said rollers toward and from said receptacle, a paste-reservoir, a paste-receiving roller running in said reservoir, and a paste-transferring roller situated between said paste-receiving roller and the said apron-roller, about the axis of which the said frame swings, substantially as herein set forth.

4. The combination, in a labeling-machine, with a paste-carrying apron and rollers for carrying the same, and a frame containing the said rollers and apron, arranged to swing from the axis of one of said rollers, of a label-receptacle and a fixed pivotal support therefor at one end thereof and a yielding support for the other end of said receptacle, substantially as and for the purpose herein set forth.

5. The combination, in a labeling-machine, with a traveling paste-carrying apron and a frame for said apron, of a scraper pivoted to said frame on either side of said apron and adjustable on its pivot for removing paste from a greater or less portion of the width of the said apron, substantially as herein described.

6. The combination, in a labeling-machine, of a label-receptacle, a traveling paste-carrying apron and a swinging frame for said apron for pasting and picking up labels from said receptacle, and a stripper supported in said frame for stripping the labels from said apron, substantially as herein described.

7. The combination, in a labeling-machine, with a label-receptacle and a traveling paste-carrying apron and a swinging frame for said apron for pasting and picking up labels from said receptacle, of a stripper and a shaft for carrying the same, supported in said frame and movable therewith to preserve the proper

relation of the stripper to the apron during the swinging movements of the latter and the said frame, substantially as herein set forth.

8. The combination, with the rising and falling paste-carrying apron, of a label-receptacle consisting of a table and a series of spring-supported pins working through said table, substantially as and for the purpose herein set forth.

9. The combination, with the rising and falling paste-carrying apron, of a receptacle consisting of a table and a series of spring-supported pins working through said table, and a stop for retaining one of said pins below the surface of the table, substantially as and for the purpose herein set forth.

10. The combination, with a labeling-machine, a paste-carrying apron, a swinging frame and rollers therefor for carrying said apron, a label-receptacle, and a lever for operating said frame, of a bottle-holder consisting of a roller occupying a fixed position and rollers supported in said lever, substantially as herein described.

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