

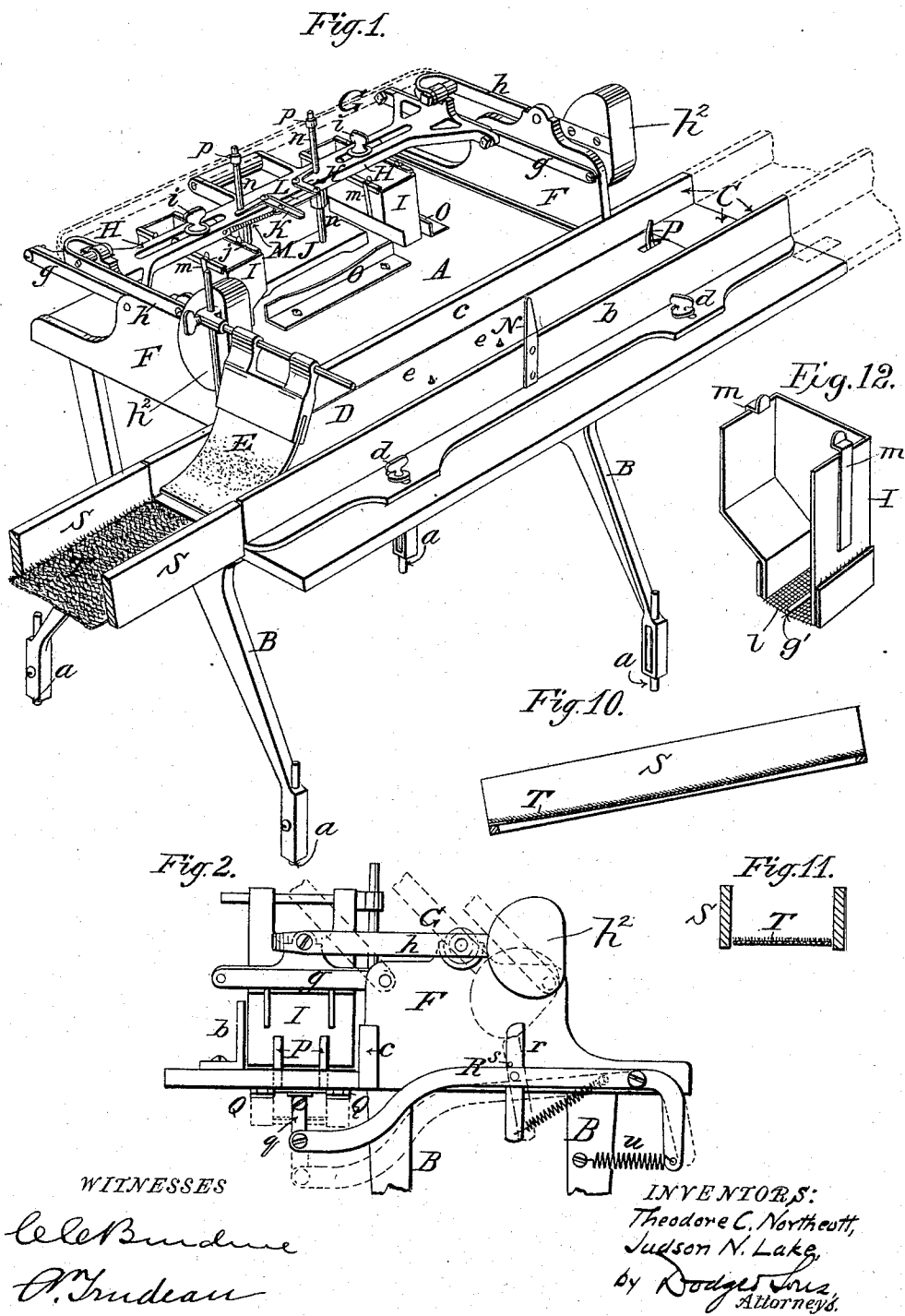
(No Model.)

3 Sheets—Sheet 1.

T. C. NORTHCOTT & J. N. LAKE.
CAN LABELING MACHINE.

No. 540,363.

Patented June 4, 1895.



(No Model.)

3 Sheets—Sheet 2.

T. C. NORTHCOTT & J. N. LAKE.
CAN LABELING MACHINE.

No. 540,363.

Patented June 4, 1895.

Fig. 3.

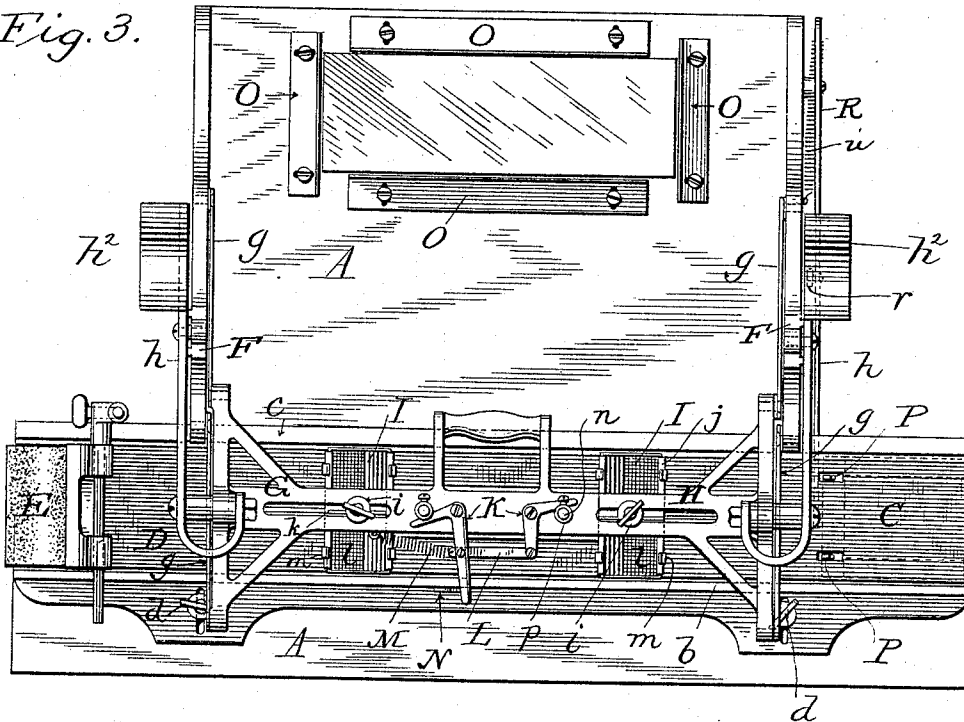


Fig. 4.

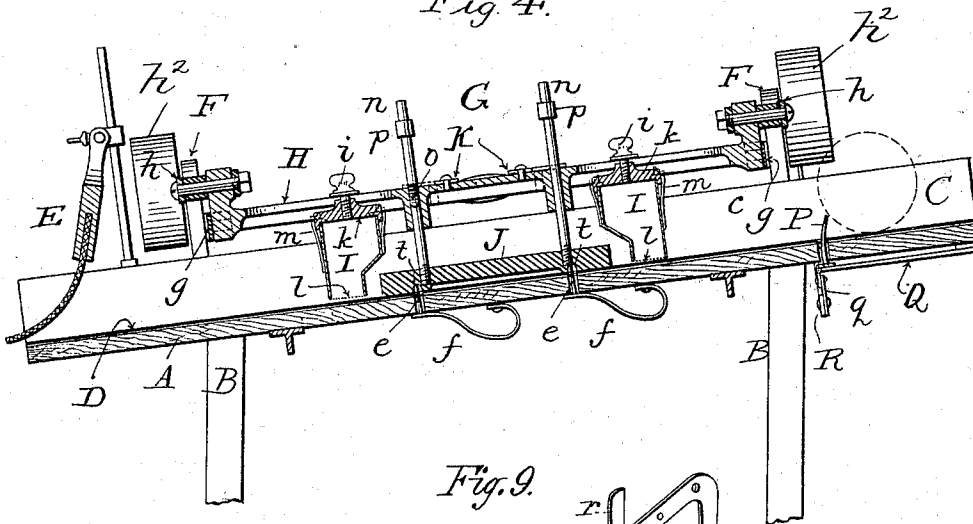
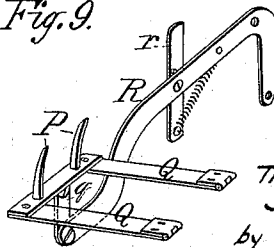


Fig. 9.



WITNESSES
Chas. Burdine
A. Trudeau

INVENTORS:
Theodore C. Northcott,
Judson N. Lake,
by *Dodger & Sons,*
Attorneys.

UNITED STATES PATENT OFFICE.

THEODORE C. NORTHCOTT AND JUDSON N. LAKE, OF ELMIRA, NEW YORK.

CAN-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,363, dated June 4, 1895.

Application filed July 13, 1894. Serial No. 517,468. (No model.)

To all whom it may concern:

Be it known that we, THEODORE C. NORTHCOTT and JUDSON N. LAKE, citizens of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Can-Labeling Machines, of which the following is a specification.

Our invention consists in a novel apparatus for applying labels to cans and other vessels.

The machine comprises a movable perforate receptacle for paste or other adhesive, and a runway over which the cans or vessels roll or pass, the labels being carried to and deposited in the runway by the paste receptacle.

It further comprises means for releasing the cans one by one; for detaching the labels from the paste receptacle, and other details and features hereinafter set forth.

In the drawings, Figure 1 is a perspective view of the preferred form of machine; Fig. 2, an end view of a portion of the machine, showing the can-releasing devices; Fig. 3, a plan view showing the swinging frame in the position it occupies when depositing a label in the trough; Fig. 4, a longitudinal sectional view on the line *xx* of Fig. 2; Figs. 5 and 6, vertical transverse sectional views showing the swinging frame in different positions; Fig. 7, a perspective view of the paste-receptacle and its carrier or supporting frame; Fig. 8, a perspective view illustrating the construction and operation of the label-detaching or throw-off devices; Fig. 9, a perspective view of the device by which the cans are held back during pasting and transfer of the label and then released; Figs. 10 and 11, detail views of a trough or runway extension hereinafter described, and Fig. 12 a sectional perspective illustrating a detail of the paste-receptacle.

The main frame of the machine comprises a top *A* supported in an inclined position by means of the legs *B B*, which latter have adjustable feet *a*, by means of which the inclination of the table may be varied. At the rear side of the top there is a trough or runway *C*, one of the walls or sides *b* of which is adjustable relatively to the fixed wall *c* by means of screws *d* passing through slots in

the parts *b*, in order that the machine may be adapted to cans or vessels of different sizes. In the bottom of the runway there is a strip *D* of rubber, cloth, or other suitable material, which as shown, is of a width less than the runway, so that when the cans roll down the latter, this strip will hold the label against the body of the can between the ends, which are slightly larger than the body.

Projecting up through the bottom of the runway are one or more points or spurs *e*, which are designed to stick into and hold the label when deposited in the runway, the said points or spurs being carried preferably at the ends of spring arms *f* so as to be capable of yielding, and not interfere with the rolling of the can thereover.

At the lower end of the runway there is a hinged or pivoted gate *E*, the lower end of which, being designed to be struck by the can, is made of a flexible material, such as cloth or carpet, and is adapted not only to insure the proper lapping of the label, but also to remove any paste that may be on the outside of the label. This wiper or gate will be made adjustable in position, and will be varied in its length and weight so as to insure the perfect lapping of the ends of the label.

On the top *A* there are two brackets *F F*, between and to which is pivoted, by means of links *g g*, the swinging frame *G*, which frame is counterbalanced by means of weighted levers *h*, connected at one end to the frame and pivoted between their ends to the brackets. To counterbalance the frame, the levers *h* are each provided with a weight *h*².

Frame *G* comprises a bar *H* provided with paste boxes *I, I*, and presser plate *J*, the boxes being adjustable longitudinally of the bar by means of screws *i* which pass through slots in the bar *H* and engage the box-holders. The box-holders consist merely of two parallel arms *j* connected by a yoke or cross bar *k*, which latter is threaded to receive the clamping screw *i*. The paste boxes are open at the top and closed at the lower end or bottom by a piece *l* of wire gauze or other suitable material which, while preventing the paste from running out too fast, permits it to ooze through the perforations in quantities sufficient to properly coat the label.

If the paste boxes were made with merely

a flat perforate bottom, the bottom would be liable to be pressed upward and to become set in concave form, so that the paste would be applied only along the outer boundary of the bottom. To prevent this, there is placed within each box a spring g' , which, pressing upon the bottom, holds it flat and level, or causes it to bulge slightly downward, as indicated in Fig. 12. The spring may be of any desired form, but is preferably made of a single elastic wire, in order to cover as little as possible of the perforate bottom.

These boxes are held in place upon their frames or holders by clamps or arms m which engage the arms or bars j so that when it is desired to adjust or remove the boxes it is only necessary to move them lengthwise, the arms or clasps sliding along the bars and holding the boxes wherever set.

By making the paste boxes adjustable relatively to the frame, we are enabled to readily adapt them to labels of different lengths. Where labels are used which are wider or higher than the paste boxes, the boxes may be readily removed and replaced by larger boxes.

Presser plate J is made heavy and is adapted to bear upon the labels close to the paste boxes. It is provided with one or more,—preferably two,—stems n , which are notched as at o , and pass up through the bar H. To the upper face of the bar we pivot two elbow levers K in position to engage the notched stems n ,—the said levers being connected by a link L and held normally in engagement with the notched stems by means of a spring M.

When the frame G is raised, with the label adhering, the plate J is held in a fixed relation to the frame by the elbow levers as just described, but when the label is deposited in the runway, and it is desired to detach the label from the frame, the levers are released by means of a lug or projection N secured to the wall b of the runway. This lug engages one of the levers K, whose arm is extended for the purpose, and as the lug extends upward above the table, it will be seen that the levers K will be rocked and the presser plate released just before the frame G reaches the limit of its movement. The presser plate being thus released, falls by its own weight and carries the label away from the bottoms of the paste pots and deposits it upon the bottom of the runway.

When the frame G is first raised from off the bottom of the runway, the presser plate still remains upon the label just deposited, levers K being prevented from engaging the stems by reason of the lug N; but after the frame has been raised a sufficient distance to insure the separation of the label from the paste boxes, collars p on the stem n are engaged by the bar H and thereby insure the lifting of the presser plate.

The presser plate or take-off is provided with two holes t , or other suitable recesses, arranged in such relation to the pins or spurs e

that when the presser plate is carried into the trough or runway, these pins may pierce the label and enter the holes or recesses in the take-off.

The parts should be so constructed that the labels will be placed in the trough or runway when the frame carrying the paste boxes is at or near the termination of its movement through an arc of one hundred and eighty degrees, for if this be not so, then in drawing the boxes away from the trough, off the label deposited, the friction of the take-off would tend to move the label out of position.

Upon the top A is a holder for the labels comprising four angular plates O, adjustable toward and from each other by means of suitable slots and screws, to adapt the holder to labels of varying size.

In order to hold the cans in position, and to release them at the proper time, we provide one or more arms or fingers P, which project up through the runway at its upper end. These fingers are carried by a hinged plate or lever Q which is connected by means of a link q to a lever R pivoted to the side of the main frame. Lever R is provided with a pivoted pawl r adapted to be struck by the counterweight of frame G and thereby to depress the lever when the frame is moved from the runway back to the table. This pawl is free to move in one direction without affecting the lever, that is, when the counterweight strikes the pawl during the travel of the frame from the table to the runway, but when the motion of the frame is reversed, and just at the instant that the paste boxes have been raised high enough to be cleared by the can, the counterweight strikes the pawl (which cannot swing backward, owing to the presence of a pin s thereon), and depresses the lever and the fingers P, thereby freeing the can and allowing the same to roll down the inclined runway over the coated label.

S indicates an extension of the trough C, the sides of which extension are made of wood or other suitable material, while the bottom is formed of a strip T of flexible material, such as rubber, canvas, or preferably, woven fabric having a long nap or pile. Moquette carpet answers quite well. The band or strip T is attached at its ends to suitable supporting bars or cross pieces, but is free at its edges. It is left somewhat slack so that it may sag more or less, and by wrapping about or adapting itself to the surface of the can, insures the smoother and tighter wrapping of the label about the can or vessel. The long pile or nap also insures contact and pressure at every point, and thereby further contributes to the smooth application of the label.

The operation of the machine is as follows: The labels are applied face downward in the holder on the top of the table A, and the paste boxes being filled with paste, are brought down upon the labels as represented in Fig. 1. By pressing down upon the swinging frame and bringing the open mouths of the paste boxes

upon the labels, the paste oozing from the said boxes, coats the ends of the label. While in this position the presser plate or take-off is either barely in contact with the labels or is slightly above the same. Now as the swinging frame is raised to bring it to the position shown in Fig. 3, the label which was coated will adhere to the paste boxes and will be carried over and deposited in the runway or trough as the swinging frame is carried over to the position shown in Fig. 3. Just before the swinging frame reaches the limit of its movement, the lug N striking upon the extended end of one of the levers K, releases the presser plate or take-off and causes the latter to disengage the label and deposit it in the trough,—the said presser plate forcing the label down with sufficient force to insure the penetration of the pins or spurs *e*. As the swinging frame is now raised preparatory to returning it to the position it first occupied, the presser plate remains upon the label until the paste boxes are raised above the top of the trough, whereupon the collars on the stems of the presser plate are engaged by the cross bar H of the swinging frame, and thereby cause said presser plate to move with the swinging frame. During this return movement of the swinging frame the counterweight on the levers strikes the dog *r* and depresses the lever R, thereby withdrawing the fingers P and permitting a can to roll down over the label deposited in the trough or runway. As the can thus rolls down the trough, it rolls over the coated label, which adheres to the surface of the can, and as the can with the label attached passes beneath the wiper at the lower end of the runway, the said wiper smoothes out the edge or end of the label and insures the proper lapping thereof upon the can, the flexible strip T finally pressing it smoothly and closely against the can at all points. A small spring *u* returns the detent lever R to its normal position immediately after being depressed by the counter-weighted lever of the swinging frame so as to insure the return of the detent or finger P to proper position to intercept and hold the next can.

The machine may be provided at the upper end of the trough with a suitable supply hopper adapted to hold a number of cans, and will also advisably be provided with a suitable spout or conveyor for carrying away the cans to which the labels have been applied.

We do not mean to restrict ourselves to the special construction of paste boxes herein shown and described, nor do we intend to limit ourselves to a trough or runway arranged in an inclined position, for it is obvious that the trough or runway may be horizontal, and that special means may be provided for giving sufficient motion to the can to enable it to roll over the label within the trough.

In practice, it will be found advantageous to form the arms *h h* integral with a cross bar or connecting portion, as indicated by dotted lines in Fig. 1, such construction being cheap,

and adding to the stiffness of the swinging frame.

While we have spoken of the throw-off for detaching the labels from the paste-receptacles as a plate, it is to be understood that the precise form of this part is not material; and while a plate or head is found to work well in practice, a block or blocks, or simply a rod, stem, or bar may be employed, and the term plate is to be understood in the claims as applying to a throw-off of any suitable form. So too, the terms trough and runway are meant to include any suitable support for the cans, whether inclined or horizontal, and the term perforate as applied to the paste receptacles is intended to include porous bodies, such as cloth or sponge, as well as perforated sheet metal, gauze, and the like.

The paste receptacle may be larger or smaller, and cover a greater or less portion of the label as desired. It may be in one section or in several sections according to the particular work to be performed.

Having thus described our invention, what we claim is—

1. In a machine for attaching labels to cans, the combination with a main frame; of a trough or runway for the cans; a holder or support for the labels; and a movable paste-receptacle constituting a combined paste-applying and transfer device to take the labels from the holder and deposit them in the trough.

2. In a machine for attaching labels to cans, the combination with a main frame; of a trough or runway for the cans; and a frame carrying a paste-receptacle adapted to swing through an arc of about one hundred and eighty degrees and to transfer the labels to the trough.

3. In a can-labeling machine, the combination with a main frame; of a trough or runway for the cans; and a movable paste-receptacle, to perform the two-fold function of applying paste to the labels, and transferring the pasted label to the runway or trough.

4. In a can-labeling machine, the combination with a main frame and a fixed runway or trough; of a transfer device for placing the labels one at a time in the trough, with the pasted side uppermost; a can holder in the trough; and intermediate connections between said can-holder and the transfer device for releasing the cans one at a time after the placing of the label in the trough.

5. In a machine for attaching labels to cans, the combination with a main frame; of a trough or runway for the cans; a swinging frame provided with paste-boxes and a presser-plate; and pins or spurs in the trough to pierce the label and enter a recess formed in the presser plate.

6. In a machine for attaching labels to cans, the combination with a main frame; of a trough or runway for the cans; a swinging frame provided with paste-boxes and a presser-plate; means for holding the presser

plate out of action; and a lug or projection to release the presser plate and allow it to hold the label while the paste-boxes rise therefrom.

5 7. In a machine for attaching labels to cans, the combination with a main frame; of a trough or runway for the cans; and a swinging frame provided with perforate paste boxes to coat the labels and to transfer them from their
10 holder to the trough.

8. In a machine for attaching labels to cans, the combination with a main frame; of a trough for the cans; and a swinging frame provided with two separated paste-boxes to
15 apply paste to the ends of the label and to transfer the labels to the trough.

9. In a machine for attaching labels to cans, the combination with a main frame; of a trough for the cans; a swinging frame provided with paste-boxes; a presser-plate having notched stems; the elbow levers or dogs
20 engaging the stems, and a lug or projection to engage and move the levers and thereby release the presser plate.

10. In a machine for attaching labels to cans, 25 the combination with a main frame; of a trough provided with an adjustable wall; a swinging frame provided with paste-boxes and with a presser-plate having notched stems; levers or dogs to engage the stems; 30 and a projection secured to the movable wall of the trough to engage the dogs or levers.

11. In a can-labeling machine, the combination with the main frame provided with brackets F F; of a swinging paste-applying frame; 35 links g g connected at one end to the brackets and at the other end to the swinging frame; and the counterweighted levers h h connected at one end to the swinging frame and pivoted to the brackets. 40

In witness whereof we hereunto set our hands in the presence of two witnesses.

THEODORE C. NORTHCOTT.
JUDSON N. LAKE.

Witnesses:

HIRAM H. BICKFORD,
L. D. SHOEMAKER.