(No Model.)

W. H. LEISTER.

LABELING MACHINE.

No. 507,372. Patented Oct. 24, 1893.

Fig. 1

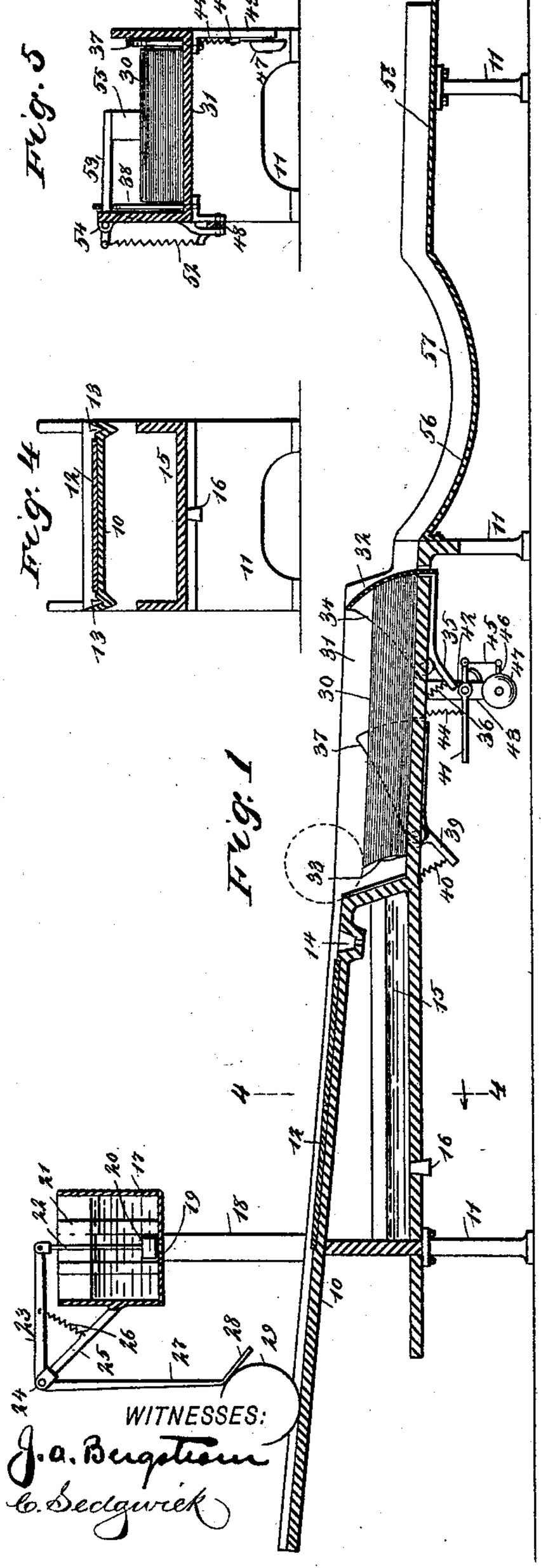

Fig. 2

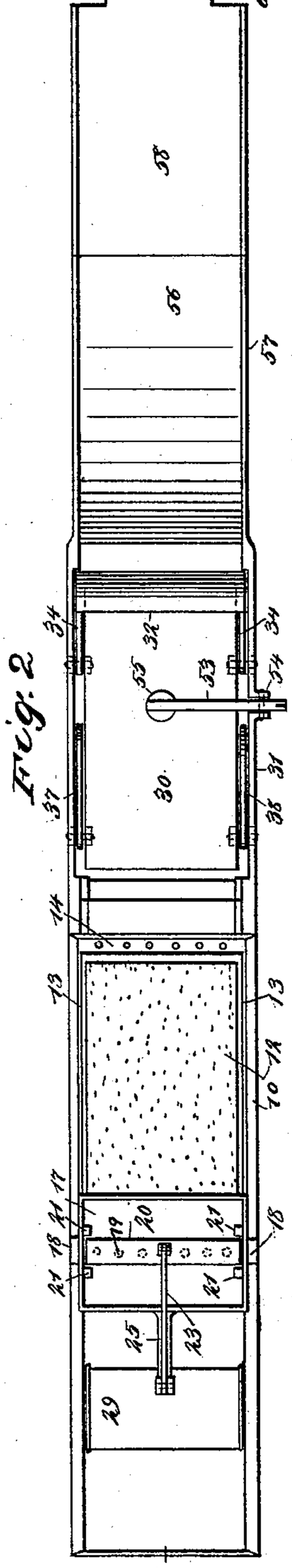

Fig. 3

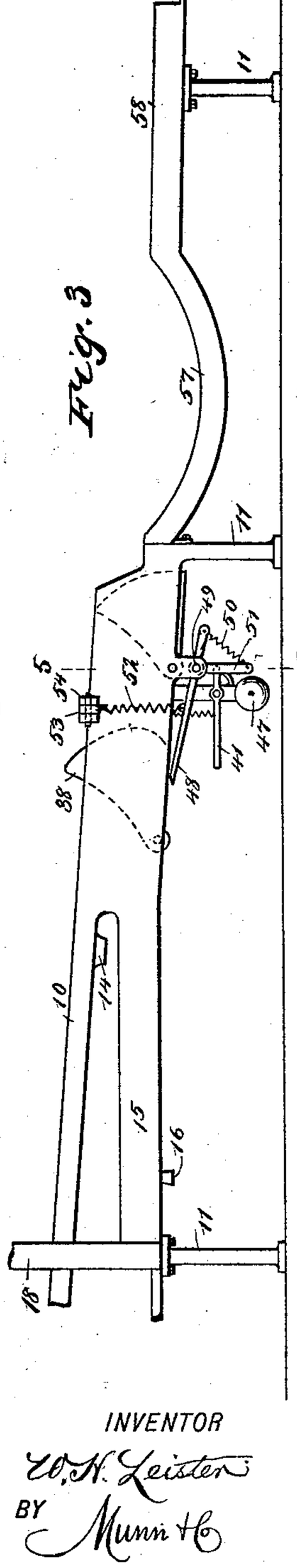

Fig. 4

Fig. 5

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LABELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,372, dated October 24, 1893.

Application filed March 21, 1893. Serial No. 467,004. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HAMMOND LEISTER, of Westminster, in the county of Carroll and State of Maryland, have invented a new and Improved Labeling-Machine, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of machines which are used for pasting labels upon cans, and the object of my invention is to produce an extremely simple apparatus by means of which the cans may be rapidly and nicely labeled, and also to arrange the apparatus so that the paste will be properly applied and the labels economically used.

To these ends, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a vertical longitudinal section of the entire apparatus, on the line 1—1 in Fig. 2. Fig. 2 is a plan view of the same. Fig. 3 is a broken side elevation. Fig. 4 is a vertical cross section, on the line 4—4 in Fig. 1; and Fig 5 is a vertical cross section, on the line 5—5 in Fig. 3.

The machine is provided with an inclined bed 10, down which the cans run, this being supported together with the rest of the framework on suitable legs 11, and the bed has on its central portion a paste pad 12, to which the paste is applied, and by which the paste is applied to the cans. The width of the paste pad 12 corresponds nearly to the width of the label, and to the length of the can, so that the paste will be applied evenly to the can body when the latter rolls over the pad, and without sticking any paste upon the end portions of the can. On the sides of the pad 12 are longitudinal grooves 13, which serve to convey the surplus paste downward to the transverse trough 14, which is arranged at the foot of the pad, and in which the surplus paste accumulates and from which it drops into the vessel 15, which is arranged beneath the bed. The vessel 15 is open at the top, and is also provided with a removable plug 16, in the bottom, to facilitate cleaning it out.

The paste is supplied to the paste-pad 12 from a fountain 17, which is supported on posts 18 above the paste pad, and in the bottom of the fountain are holes 19, through which the paste drops, these holes being normally closed by a valve 20, which moves vertically between guides 21 on the ends of the fountain, and which is actuated by a rod 22, this being secured to the valve and to the upper arm 23 of a bell crank lever 24, which is fulcrumed on a supporting arm 25 on the side of the fountain, and is pressed by a spring 26 so as to hold the valve closed. The other arm of the bell crank extends downward toward the bed 10, and terminates in a bent end 28, which is adapted to be engaged by a can 29, as the latter rolls down the bed 10. When the can passes the arm 27, it tilts the bell crank, lifts the valve 20, and permits paste to drop through upon the upper end of the pad 12. This arrangement causes the paste to flow only while the cans are running through the machine.

At the foot of the inclined bed 10 are held the labels 30, these being carried in a label holder or box 31, which is closed at its lower end by a swinging curved plate 32, the curve of the plate causing the pile of labels as it is held against it to be curved at the front end, as shown at 33, and thus the upper label will always project a little in advance of the next one beneath it, and the pasted can which rolls upon the labels will pick up the top label without causing any paste to touch the next one beneath. The labels should be slightly more than long enough to reach around a can, to cover the paste which would otherwise be squeezed from the ends of the labels, and the pile of labels may be given the required shape to fit the label box and plate 32 before placing them in the box.

The label-holding plate 32 is adapted to swing downward through a slot in the box bottom, so as to permit the cans to pass, and to this end it is provided with inclined ends or sides 34, which are pivoted on the box bottom, and one of them has a prolonged end 35

which is pressed by a spring 36, thus holding the plate 32 in a raised position. When a can rolls across the labels, however, its extreme ends will strike the side pieces 34 of the plate, and running up said side pieces, will depress the plate and pass smoothly over the same.

The labels are held between depressible guides 37, 38 which are also adapted to be struck by the ends of the cans, and these guides are inclined like the side pieces 34 just described, and they are pivoted to the box bottom so that their wider ends will extend upward above the label. The guide 37 has a tongue 39, which is pressed by a spring 40, so as to hold the guide raised, and when the guide is depressed, it swings against a lever 41 which is fulcrumed, as shown at 42, on the hanger 43 beneath the label box, and one end of the lever 41, connects by means of a wire 45 with the hammer 46 of a gong 47, so that when the guide is sufficiently depressed it will tilt the lever 41 and ring the gong. The lever 41 is held raised by a spring 44. The gong mechanism is not shown in detail, and the tilting of the lever may be made to ring the gong in any customary manner. The guide 37 is arranged so as not to strike the lever 41 until the labels are nearly all consumed, and at this time the reduced pile of labels will permit the can to depress the guide far enough to tilt the lever and sound the gong, thus giving notice that the labels are nearly all consumed, so that they may be replenished without waste of time. The guide 38 is inclined like the guide 37, and it swings downward against a lever 48, which is fulcrumed on a lug 49 on the side of the machine frame, and is pressed by a spring 50, which is secured to the extension 51 of the lug so as to hold the long end of the lever in a raised position. The lever 48 connects by a relatively stiff spring 52 with the outer end of a vertically-swinging presser bar 53, which is fulcrumed as shown at 54 on the top of the label box, and which extends transversely across a portion of the box in a nearly horizontal position. The presser bar has on its inner end a foot 55, which presses upon the labels and prevents them from shifting. When, however, a can rolls over the labels it depresses the guide 38, thus throwing it against the lever 48, and depressing the longer end of the lever, and this action on the spring 52 and presser bar 53, raises the presser bar so as to permit a can to pass, after which the bar swings back into place.

As a can passes the label-holding plate 32, it rolls over a downwardly-curved table 56, which is provided with side flanges 57, and which delivers upon a straight bed or table 58, which is also provided with the side flanges referred to, and the delivery table 58 has the flanges cut away at its lower end, as shown at 60, and terminates in an upturned end flange 59, against which the can strikes and is stopped. This arrangement provides for the easy removal of the labeled can; and the curved bed causes the can to roll the label firmly into position before the can is left upon the delivery table 58.

I have found by experiment, that a curved bed is superior to a straight one in applying labels to cans. This result I attribute mainly to the fact that as the cans roll down one incline and up the other, their speed being progressively accelerated, and their direction of motion being then suddenly changed, it results in partial arrest of momentum and a consequent force of impact whereby their pressure upon the second incline is increased much beyond the degree due to the mere gravity of the cans. This increased pressure being applied directly to the labels, they are caused to adhere firmly and smoothly. It is also apparent, that some advantage is derived from the fact that a curved bed presents a longer travel-bed for the cans than a straight one of the same length over all.

The table 56 should be provided at its edges with grooves substantially like the grooves 13, so that cans which have flanges or widened ends may have such ends enter the grooves and enable the body portion of the can to roll firmly on the rolling table 56.

It will be seen that when a can rolls over the paste pad 12, it will be coated with paste, and when it rolls over the bunch of labels the upper label will adhere to the can, after which the label will be rolled firmly to place on the rolling table 56, and the can will be delivered properly labeled on the table 58. The construction described enables a continuous series of cans to be rolled readily down the bed 10, and each can will be automatically and nicely labeled.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A labeling machine, comprising an inclined bed having a paste pad thereon, a label holder or box arranged at the foot of the bed, a depressible curved or inclined label-holding plate extending transversely across the foot of the label box, means in the path of the can for depressing the said plate and a curved rolling table behind the label holder, all substantially as described.

2. A labeling machine, comprising an inclined bed adapted to receive a coat of paste, a label-holding box at the foot of the bed, and a curved label-holding plate at the lower end of the box, the plate having inclined sides to contact with the ends of a can and being arranged to swing downward through the box bottom, substantially as described.

3. A labeling machine, comprising an inclined pasting bed having a transverse trough near its lower end adapted to catch the surplus paste, longitudinal grooves arranged in

the sides of the bed and delivering into the trough, and a label-holding box arranged at the foot of the bed, substantially as described.

4. A labeling machine, comprising an inclined bed having a pasting pad thereon, a vessel arranged beneath the bed, a transverse trough arranged at the foot of the pad and delivering into the vessel beneath, longitudinal grooves on the sides of the pad delivering into the trough, and a label-holding box at the foot of the pad, substantially as described.

5. A labeling machine, comprising an inclined pasting bed, a label-holding box at the foot of the bed, a swinging depressible curved plate at the lower end of the box, a curved rolling table adapted to receive the cans from the label box, and a delivery table at the lower end of the rolling table, substantially as described.

6. The combination of the inclined bed, the label-holding box, the swinging depressible inclined guides in the sides of the box, and a gong sounding mechanism actuated by the depression of one of the guides, substantially as described.

7. In a labeling machine, the combination of the inclined pasting bed, the label-holding box at the foot of the bed, the swinging depressible inclined guides in the sides of the box, a transverse swinging presser bar fulcrumed on one side of the box and adapted to press upon the labels, and an operative connection between the presser bar and one of the guides, whereby the depressing of one of the guides will lift the bar, substantially as described.

8. The combination of the inclined pasting bed, the fountain arranged above the bed and adapted to deliver directly thereon, the vertically-movable valve controlling the outlet of the fountain, and a swinging lever adapted to operate the valve, the lever extending downward into the path of the cans on the bed, in advance of the said outlet; whereby the valve will discharge paste upon the bed before the cans reach it substantially as described.

9. The combination with the bed on which the labels are placed, of a vertically movable can-operated inclined or curved plate extending across the lower end or foot of the bed to cause the upper label to project a little in advance of the next one, substantially as set forth.

10. The combination with the label holding box or bed of a transverse vertically swinging arm extending over the bed and having on its inner end a foot to press on the labels and prevent them from shifting, and a device in the path of the can for elevating the bar, substantially as set forth.

WILLIAM HAMMOND LEISTER.

Witnesses:
FRANK THOMAS MYERS,
HAMMOND SPENCER LEAS.