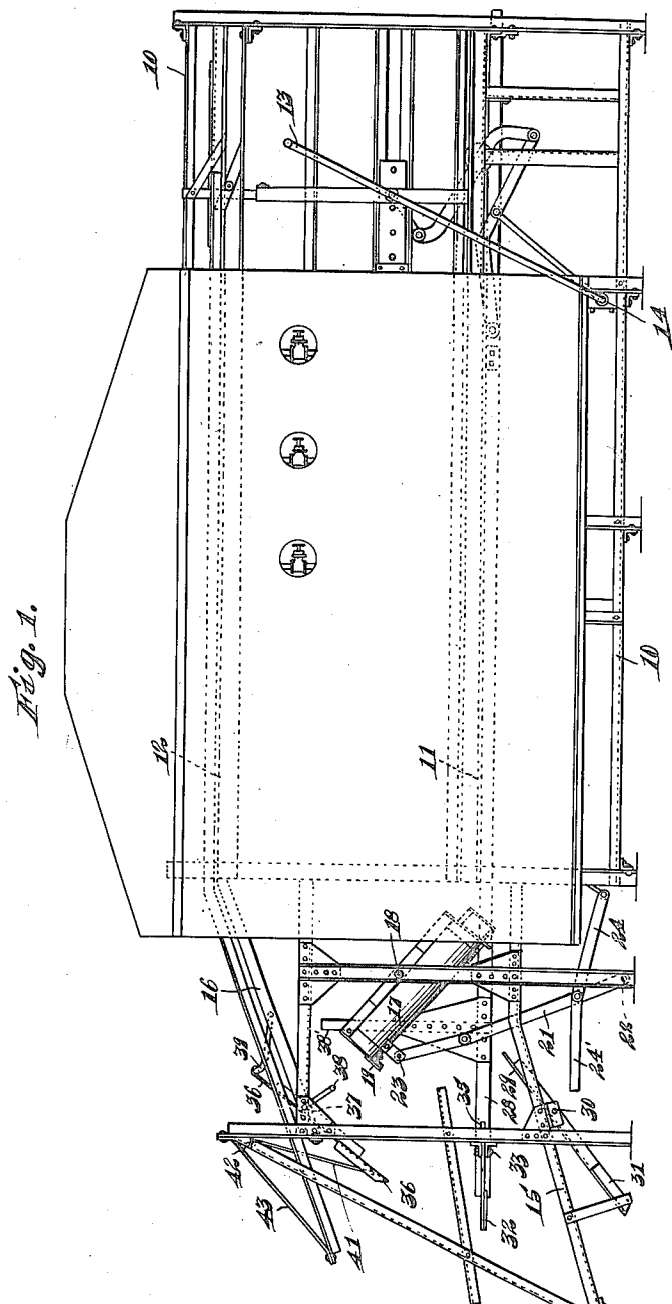


H. D. LATHROP & W. H. PAULSON.
COVER APPLYING MECHANISM FOR CAN WASHING MACHINES.
APPLICATION FILED FEB. 16, 1917.

1,247,692.

Patented Nov. 27, 1917.

5 SHEETS—SHEET 1.



WITNESSES:

C. E. Wessels.
A. A. Olson

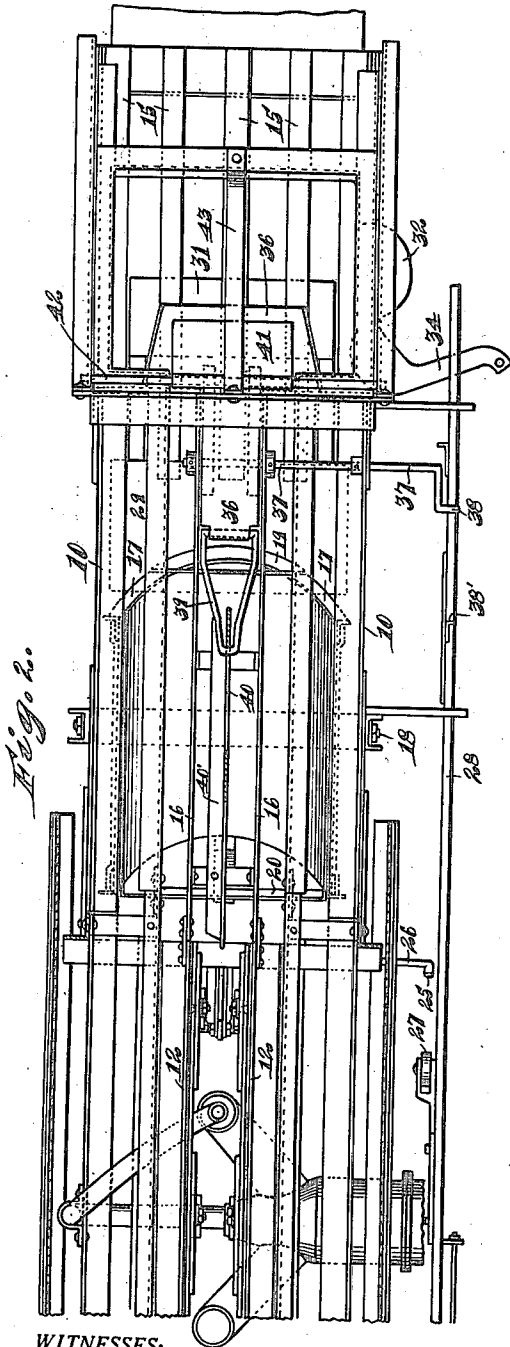
INVENTORS:
Harry D. Lathrop,
Walter H. Paulson,
BY *Joshua H. Foss*
their ATTORNEY.

H. D. LATHROP & W. H. PAULSON.
COVER APPLYING MECHANISM FOR CAN WASHING MACHINES.
APPLICATION FILED FEB. 16, 1917.

1,247,692.

Patented Nov. 27, 1917.

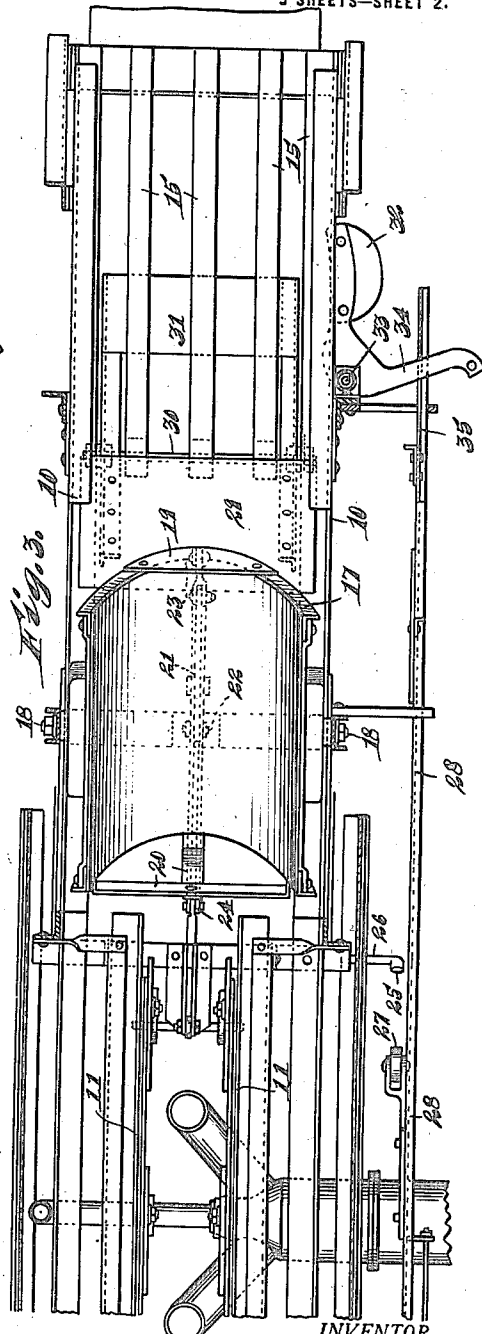
5 SHEETS—SHEET 2.



WITNESSES:

C. E. Wessels.

A. A. Olson



INVENTOR.

and Harry D. Lathrop,
Walter H. Paulson,

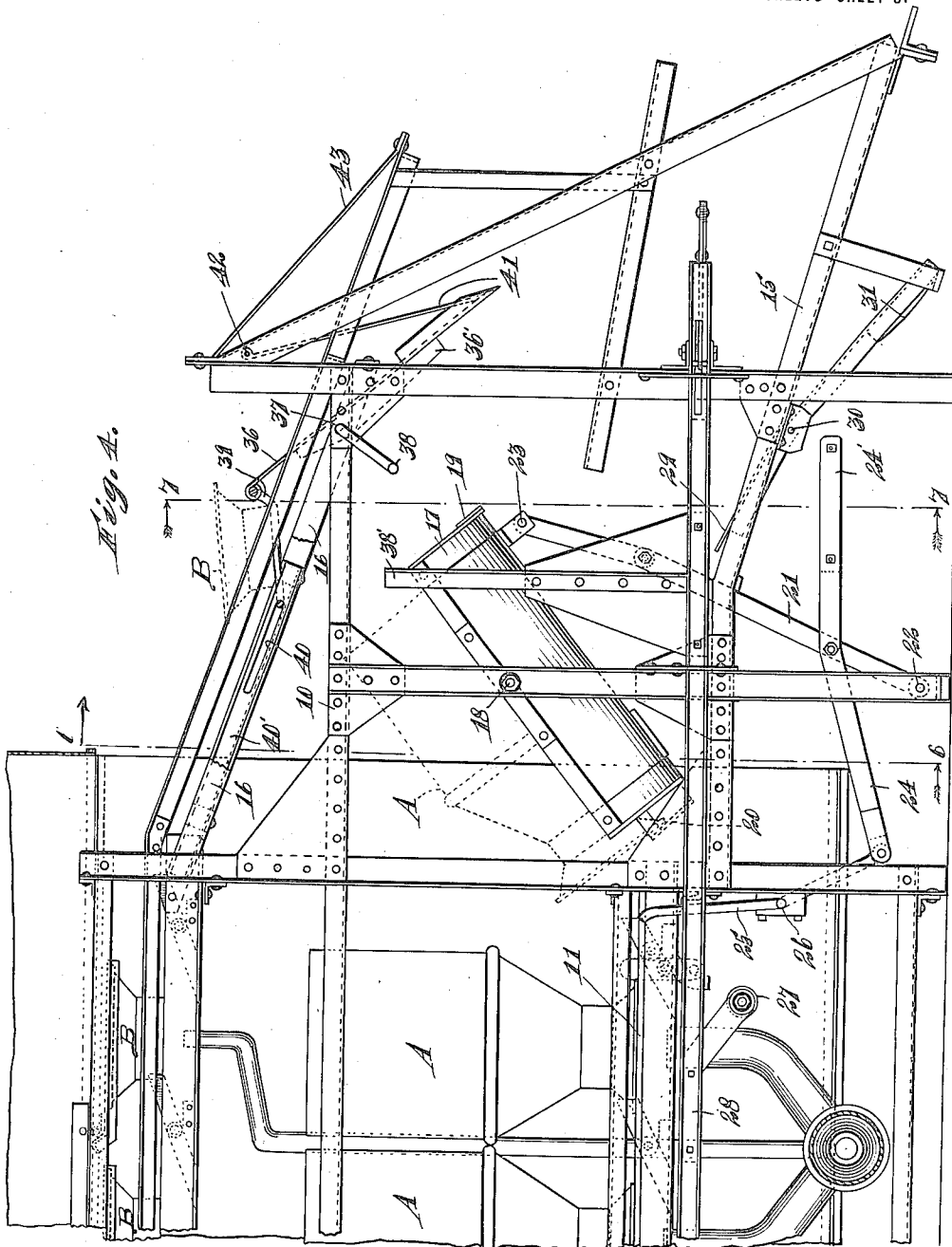
BY

Joshua H. Lathrop
their ATTORNEY

H. D. LATHROP & W. H. PAULSON.
COVER APPLYING MECHANISM FOR CAN WASHING MACHINES.
APPLICATION FILED FEB. 16, 1917.

1,247,692.

Patented Nov. 27, 1917.
5 SHEETS—SHEET 3.



WITNESSES:
C. E. Wessels.
A. A. Olson.

INVENTOR.
Harry D. Lathrop,
Walter H. Paulson,
BY *Joshua R. H. H.*
their ATTORNEY.

H. D. LATHROP & W. H. PAULSON.
COVER APPLYING MECHANISM FOR CAN WASHING MACHINES.
APPLICATION FILED FEB. 16, 1917.

1,247,692.

Patented Nov. 27, 1917.

5 SHEETS—SHEET 4.

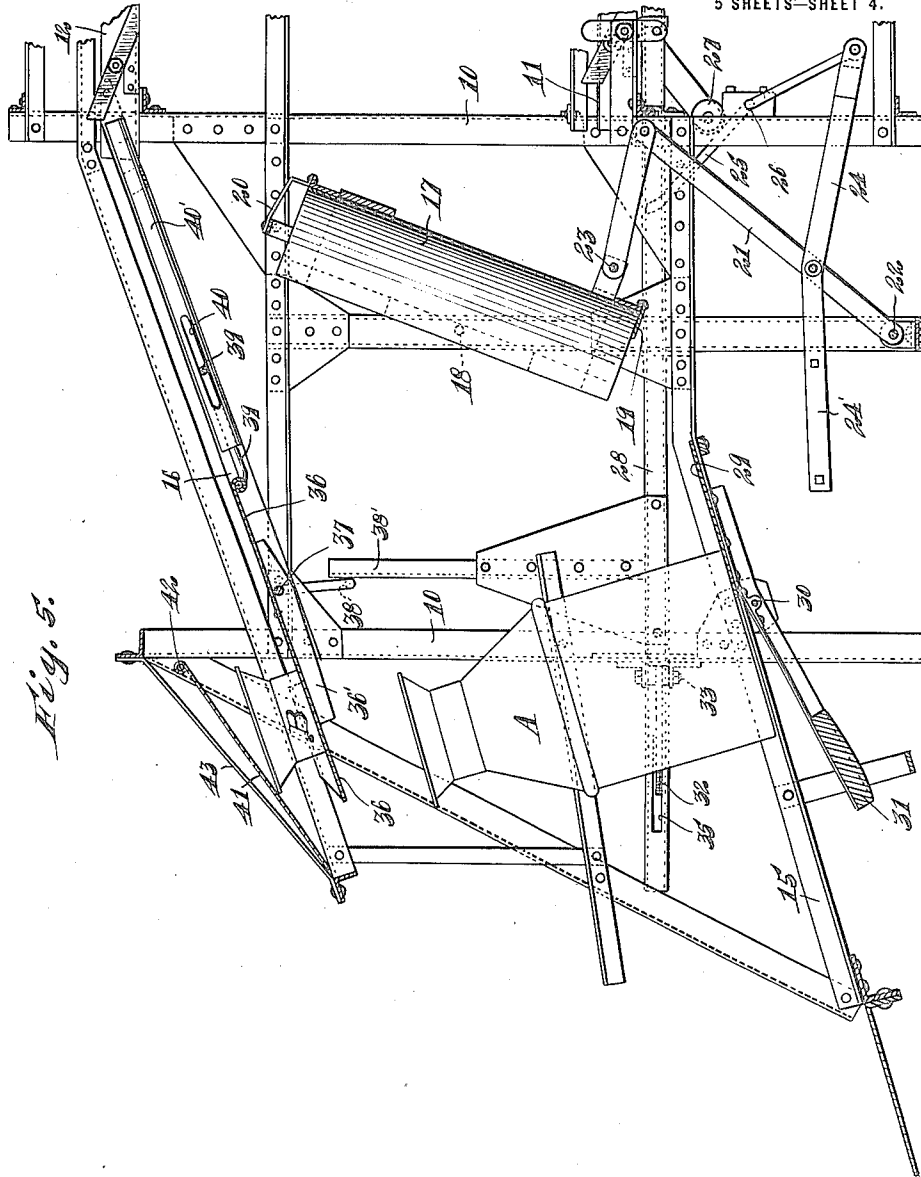


Fig. 5.

WITNESSES:

C. E. Wessels
A. A. Olson

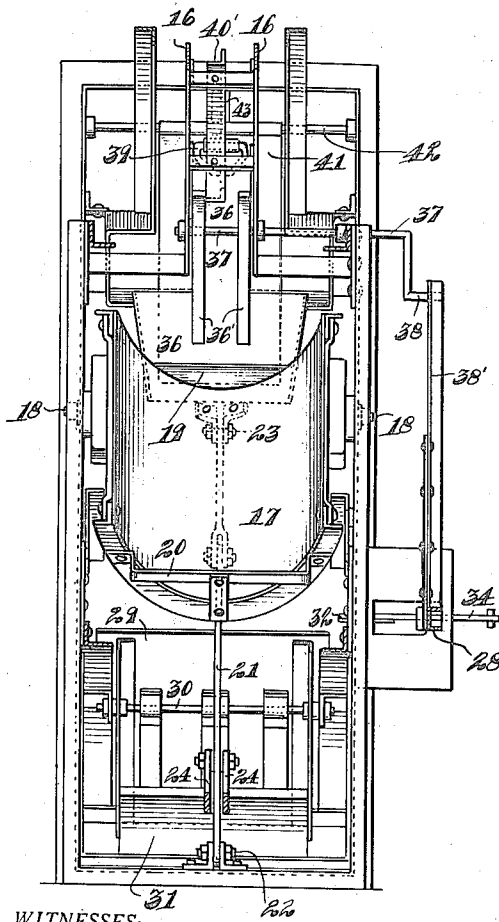
INVENTORS
Harry D. Lathrop,
Walter H. Paulson,
BY *James M. Harkness*
their ATTORNEY.

H. D. LATHROP & W. H. PAULSON.
COVER APPLYING MECHANISM FOR CAN WASHING MACHINES.
APPLICATION FILED FEB. 16, 1917.

1,247,692.

Patented Nov. 27, 1917.
5 SHEETS—SHEET 5.

Fig. 6.

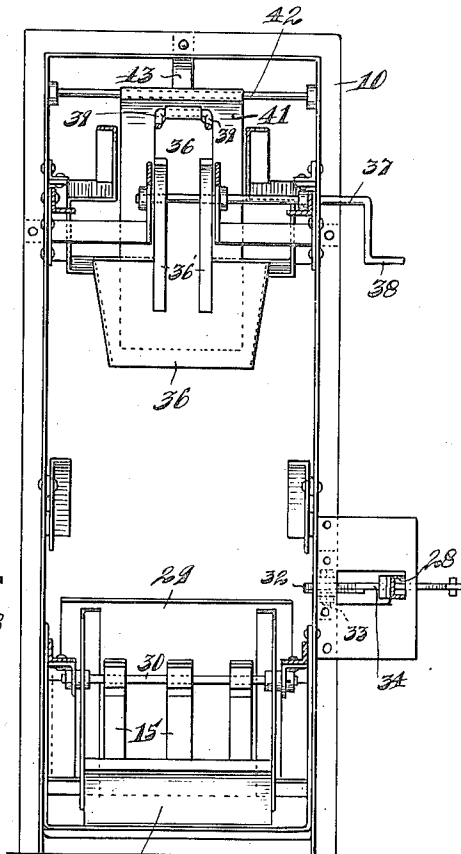


WITNESSES:

C. E. Weissel

A. A. Olson

Fig. 7.



INVENTORS.
Harry D. Lathrop,
Walter H. Paulson,
BY Joshua H. H. H.
their ATTORNEY.

UNITED STATES PATENT OFFICE.

HARRY D. LATHROP AND WALTER H. PAULSON, OF CHICAGO, ILLINOIS.

COVER-APPLYING MECHANISM FOR CAN-WASHING MACHINES.

1,247,692.

Specification of Letters Patent.

Patented Nov. 27, 1917.

Application filed February 16, 1917. Serial No. 149,102.

To all whom it may concern:

Be it known that we, HARRY D. LATHROP and WALTER H. PAULSON, citizens of the United States, and residents of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Cover-Appling Mechanism for Can-Washing Machines, of which the following is a specification.

Our invention relates to improvements in can washing machines designed for use particularly in connection with milk cans, the present improvement being particularly directed at the mechanism for handling the cans and covers after the same have passed through the cleaning operation and are ready for discharge from the machine.

The object of our invention is the production of improved can-reversing and cover-applying mechanism, whereby the cans and covers will be positively and expeditiously handled to effect discharge of the cans in upright position and with the covers applied thereto.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of a can washing machine embodying the invention,

Fig. 2, a partially sectional top plan view of the discharge end of the machine, the position of the machine as here shown being reversed as compared with Fig. 1,

Fig. 3, a view similar to Fig. 2, except that the cover guiding and handling mechanism is omitted in order to expose underlying parts,

Fig. 4, a side elevation of the discharge end of the machine, as seen in Figs. 2 and 3, one side of the housing of the machine being removed to expose underlying parts,

Fig. 5, a vertical longitudinal section of the discharge end of the machine viewing the same from the same side as Fig. 1, and showing the position of the parts after the can has been reversed and just prior to the application of the cover thereto, and

Figs. 6 and 7, sections taken on substantially lines 6—6 and 7—7, respectively, of Fig. 4.

The preferred form of construction as illustrated in the drawings comprises a suitable frame work 10 in which are provided superposed horizontally extending longitudinal guides 11 and 12 for the cans and covers to be cleaned. Suitable mechanism is provided, operable by an oscillatory manually operable lever 13, fulcrumed at 14, for effecting intermittent feeding or advancing of the cans and covers through the machine on guides 11 and 12. In this intermittent feeding or advancing of the cans and covers, through the machine, the same are subjected to a cleansing, sterilizing and drying process, the mechanism for effecting such treatment of the cans and covers and for advancing or feeding the same through the machine, not being claimed in this application, and hence detail description thereof is omitted.

After the cans and covers have passed through the cleansing process, as mentioned, the same are ready for discharge from the machine and to this end are passed from the guides 11 and 12 on to inclined guides 15 and 16, respectively, down which said cans and covers are adapted to slide by gravity. The cans which are designated by the letters "A," in the passage of the same along the guide 11, are in an inverted position, and as each can is discharged or pushed from the guide 11, the same drops to position in a substantially semi-cylindrically formed can reversing member 17, pivotally mounted at 18 at the discharge end of said guide, as clearly seen in Fig. 4. The member 17 is of a size to snugly receive the can, end pieces 19 and 20 being adapted to engage with the opposite ends of the can to hold the same against relative longitudinal movement. The can reversing member 17 is so balanced that normally the same assumes the position shown in Fig. 4, or one in which the same is adapted to receive a can discharged from guide 11. Actuation of the member 17 to effect reversal of the can is effected by means of a toggle 21, fulcrumed at 22, the opposite end of said toggle being connected at 23 with one end of said member 17. Actuation of said toggle is effected by means of a link 24 which is pivotally connected at one end with the lower end of an oscillatory arm 25, fulcrumed intermediate its ends as at 26. The upper end of arm 25 is arranged in the path of a roller 27 carried

by a reciprocatory rod 28 having operative connection with the actuating lever 13, the arrangement being such that upon oscillation of said lever 13, rod 28 will be reciprocated to carry the roller 27 into engagement with the upper end of arm 25, causing oscillation of the same to the right, as seen in Fig. 4. When this occurs the lower link of toggle 21 will of course be rocked to the left causing breaking to the left of the knee joint of the toggle with the result of causing oscillation of the can reversing member 17 to the position shown in Fig. 5. When said member 17 reaches this position, the can drops by gravity therefrom on to the inclined guide 15. The fall of the can on to guide 15 is broken by a tiltable or yieldable plate 29 which is fulcrumed at 30, a weight 31 serving normally to hold said plate in an elevated or upwardly inclined position, as seen in Fig. 4, for engagement with the lower end of the can in the deposit of the same onto guide 15. The can thus deposited on the guide 15 slides down the latter by gravity, being arrested, however, in its downward movement by means of an arm 32 which is fulcrumed at 33, as clearly seen in Fig. 3. One end 34 of arm 32 extends laterally, engaging in a slot 35 provided in the actuating bar 28. The arrangement is such, that in the movement of the bar 28 to the terminal of its movement which brings the roller 27 into operative relation with the arm 25, as above described, the arm 32 will be rocked inwardly to traverse the path of the can to arrest movement of the same down the guide 15, as above mentioned.

At the same time that a can is discharged from the can guide 11, the cover B thereof sliding on the guide 12, will be pushed or discharged from the latter on to the inclined guide 16 down which the cover will slide by gravity. In order to arrest the movement of the cover during the can reversing operation, above described, a plate 36 is provided positioned between the spaced rails of which the guide 16 is comprised, said plate 36 being fixed to a transversely extending shaft 37, having an axis located substantially in or just below the plane of said guide rails, and located intermediate the ends of said plate, as seen in Fig. 4. The shaft 37 engages with spaced reinforcing ribs 36' provided on the under side of plate 36. One end of the shaft 37 is provided with a laterally projecting crank 38. Pivotaly connected with the rearward end of the plate 36 is a link 39, the rearward transversely extending bar of said link slidably engaging in elongated slots 40 provided in a supplemental longitudinally extending bar 40' arranged between the rails of guide 16, as clearly seen in Fig. 2. The arrangement is such that the plate 36 nor-

mally, by gravity, assumes a position as seen in Fig. 4, wherein the rearward end thereof projects above the guide 16, causing the link 39 to project horizontally from said guide, in which position of said member 39 the same is adapted to engage with a cover B in the descent thereof upon the guide 16 and arresting the movement of the same, as clearly seen in Fig. 4. Arising from the actuating bar 28 is an arm or contact post 38' which is adapted, upon actuation of said bar in the direction to cause actuation of the can reversing member 17, as above described, to contact with the crank 38 of shaft 37 and rock the same to the position shown in Fig. 5. When this is done the plate 36 is rocked into coplanar position relative to the cover guide 16, causing lowering of the link 39 and hence release of the cover so as to permit of continued travel of the latter upon the guide. When the cover is thus released the same slides to a position on to the lower or forward end of the plate 36, as seen in Fig. 5. In this position, the cover engages with a second plate 41 arranged above the plate 36 and pivoted at 42. Upward pivotal movement of the lower or free end of plate 41 is limited by a bar 43.

The cover will remain in this position above the can which is of course held by reason of the stop arm 32, until the bar 28 is retracted. When this is done the stop arm 32 will be released to permit of the travel of the can and the plate 36 will also be released, and under the weight of the cover will rock downwardly engaging against the upper end of the can on to which the released cover will be deposited, as will be readily understood. In this guiding or depositing of the cover on to the upper end of the can, the plate 41 of course cooperates with the plate 36, the cover being adapted to slide between said plates, as will be readily understood. To insure accurate guiding of the cover the plate 36 is channeled, as seen. This means of handling of the cover has been found extremely accurate and positive. The can with its cover thus applied of course continues down the guide 15 as the same is discharged from the machine.

Each subsequent can and cover is similarly handled, the operation of the parts, except for the reciprocation of the bar 28, being entirely automatic. In order to lock the reversing member 17 in can receiving position so as to adapt the same to withstand the rough usage to which the same is subjected by reason of the dropping of the can to position thereon, the arrangement and operation of the toggle 21 is such that the same passes beyond dead-center position in the return rocking of the reversing member 17. This movement of the toggle to a

position beyond the dead-center is insured by a weight 24' provided upon one end of link 24, as clearly seen in Fig. 4. With this arrangement it will be seen that the pressure or weight of a can upon the reversing member, cannot possibly effect swinging of the reversing member 17 to can reversing position. However, the arrangement is such that breaking of the knee joint of the toggle will occur upon tilting of the arm 25 as effected by movement of roller 24.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having described our invention what we claim as new and desire to secure by Letters Patent is:

1. In a machine of the class described, the combination of superposed can and cover guides; and means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned on said can guide, said last mentioned means comprising a pair of vertically movable members between which a cover is adapted to slide, substantially as described.

2. In a machine of the class described, the combination of superposed can and cover guides; and means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned on said can guide, said last mentioned means comprising a pair of coöperating vertically swinging members between which a cover is adapted to slide, substantially as described.

3. In a machine of the class described, the combination of superposed can and cover guides; means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned on said can guide, said last mentioned means comprising a pair of superposed spaced swingingly mounted members between which a cover is adapted to slide, said members normally assuming a downwardly inclined position; and means for holding said members in elevated position to arrest the movement of a cover positioned between the same and for releasing said members at a predetermined time to permit of downward swinging of the same to release the cover, substantially as described.

4. In a machine of the class described, the combination of superposed can and cover guides; means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned

on said can guide, said last mentioned means comprising a pair of superposed spaced swingingly mounted members between which a cover is adapted to slide, said means normally assuming a downwardly inclined position; means for holding said members in elevated position to arrest the movement of a cover positioned between the same and for releasing said members at a predetermined time to permit of downward swinging of the same to release the cover; and means for arresting the movement of a can on said can guide and releasing the can simultaneously with the release of said cover guiding members, substantially as described.

5. In a machine of the class described, the combination of superposed inclined can and cover guides down which the cans and covers are adapted to slide by gravity; means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned on said can guide, said last mentioned means comprising a plate tiltably mounted on a transverse axis arranged intermediate the ends of said member, in a plane substantially the same as the plane of said cover guide; a link pivotally connected with one end of said plates adapted, upon upward swinging of said end of said plate to assume a position adapting the same to arrest the movement of a cover traveling down said cover guide, said link upon downward rocking of said end of said plate being adapted to release the cover to permit of sliding of the same down the cover guide to a position on the opposite end of said plate; means for holding the cover on said end of said plate; and means for releasing said plate at a predetermined time to permit of descent of the cover on to a can positioned on said can guide, substantially as described.

6. In a machine of the class described, the combination of superposed inclined can and cover guides down which the cans and covers are adapted to slide by gravity; means for receiving a cover from said cover guide and delivering the same to and depositing the same on a can positioned on said can guide, said last mentioned means comprising a plate tiltably mounted on a transverse axis arranged intermediate the ends of said member, in a plane substantially the same as the plane of said cover guide; a link pivotally connected with one end of said plate adapted, upon upward swinging of said end of said plate to assume a position adapting the same to arrest the movement of a cover traveling down said cover guide, said link upon downward rocking of said end of said plate being adapted to release the cover to permit of sliding of the same down the cover guide to a position on the opposite end of said plate; a swingingly mounted plate for holding the cover on said end of said first mentioned plate; and means

for releasing said last mentioned plate at a predetermined time to permit of descent of the cover thereon onto a can positioned on said can guide, substantially as described.

5 7. In a machine of the class described, the combination of superposed inclined can and cover guides down which the cans and covers are adapted to slide by gravity; a
10 reverse a can and deposit the same on to said can guide; means for arresting the movement of a cover on said cover guide during the reversing operation of said reversing device; means for arresting the
15 movement of the can and cover on said guides in substantially superposed positions; and means for guiding the cover from said cover guide and depositing the same on to the can upon subsequent release of
20 the can and cover, substantially as described.

8. In a machine of the class described, the combination of superposed inclined can and cover guides down which a can and a cover are adapted to slide by gravity; means for
25 temporarily arresting the movement of the can and cover on said guides; and means adapted, upon release of said can and cover, to guide the latter from the cover guide and

deposit the same on to the can, substantially as described.

9. In a machine of the class described, the combination of superposed inclined can and cover guides down which a can and a cover are adapted to slide by gravity; a can reversing device adapted to receive and re-
35 verse a can and deposit the same on to said can guide; means for temporarily arresting the movement of the cover on said cover guide during reversing operation of said reversing device; means for arresting the
40 movement of the can and again arresting the movement of the cover and simultaneously releasing the same; and means adapted, upon said last mentioned release of the cover to guide the same from the cover guide
45 and deposit the same on to the can, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HARRY D. LATHROP.
WALTER H. PAULSON.

Witnesses:

JOSHUA R. H. POTTS,
ARTHUR A. OLSON.