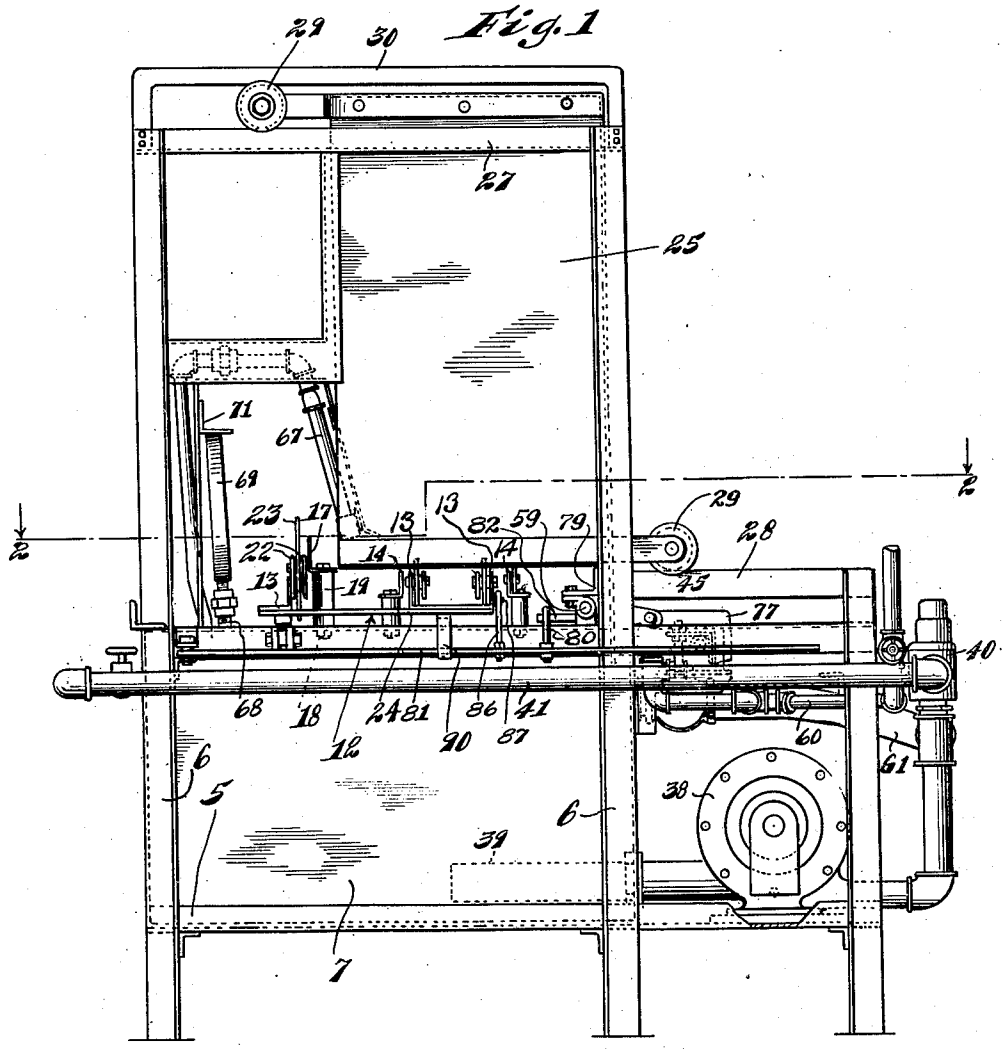
July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 1

Fig. 1



Witnesses:
C. E. Wessels
F. C. Appleton

Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 2

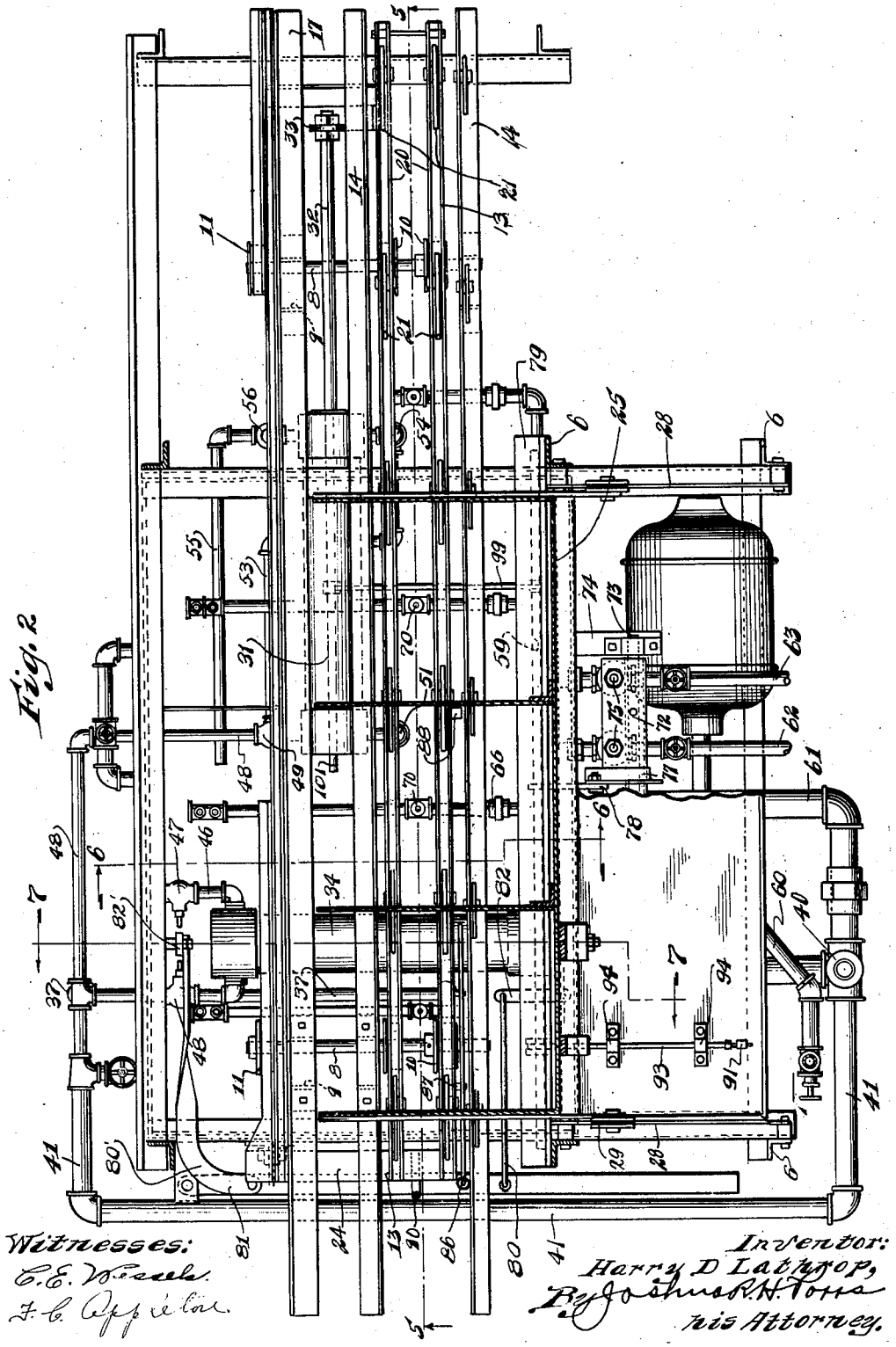


Fig. 2

Witnesses:
C. E. Wessels
F. C. Appleton

Inventor:
Harry D Lathrop,
By Joshua R. H. Toms
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 3

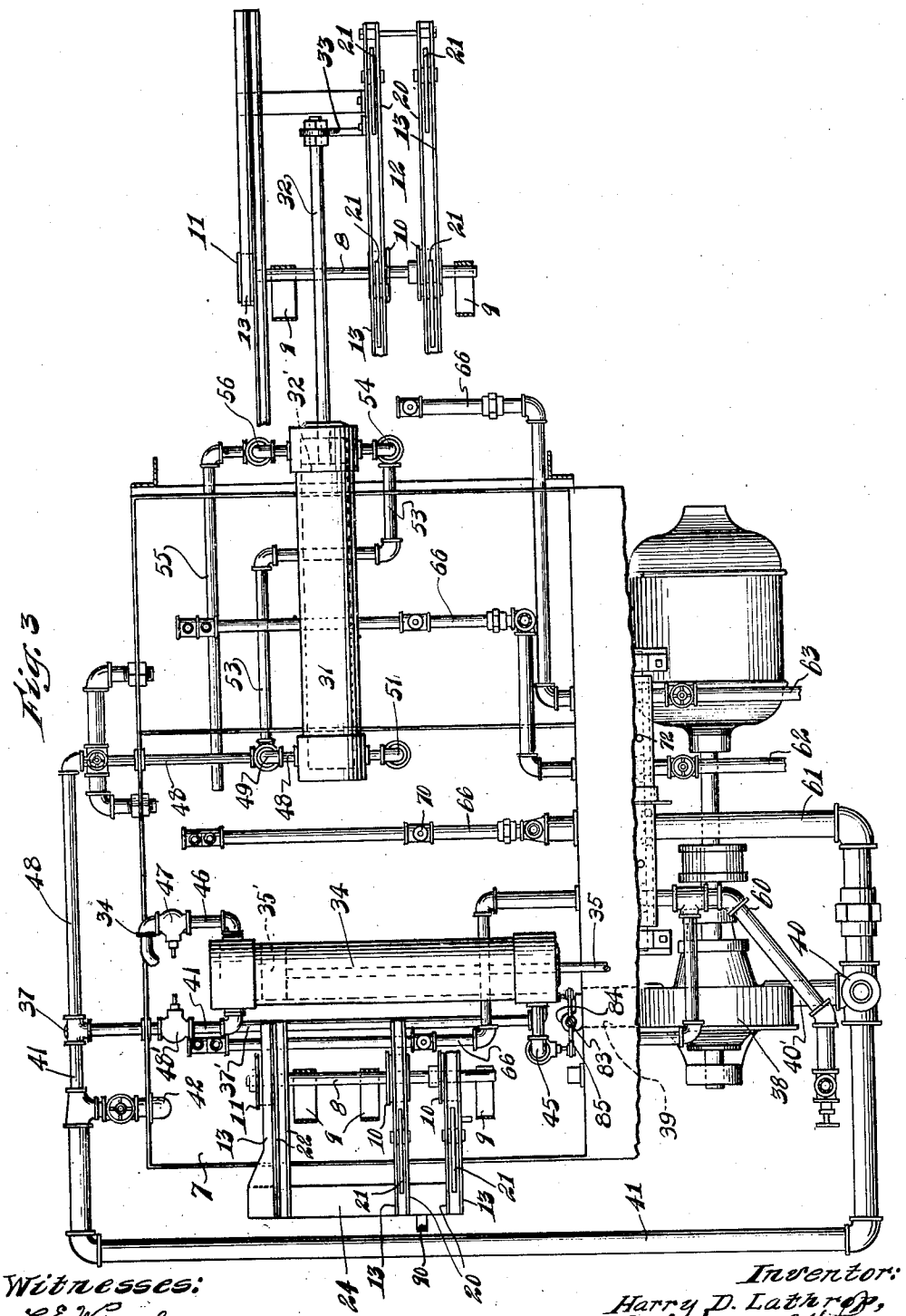


Fig. 3

Witnesses:
E. E. Wessels
F. L. Appleton

Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 4

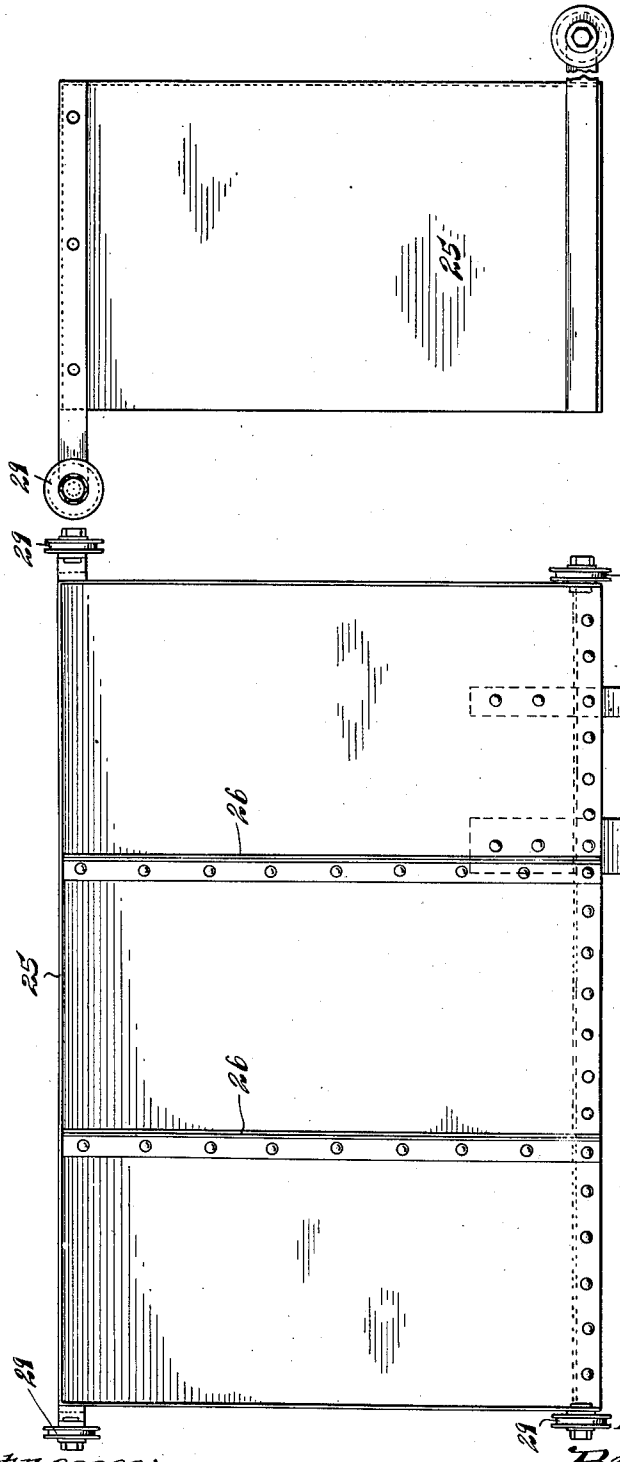


Fig. 8.

Fig. 4.

Witnesses:
E. E. Wilson
F. C. Appleton

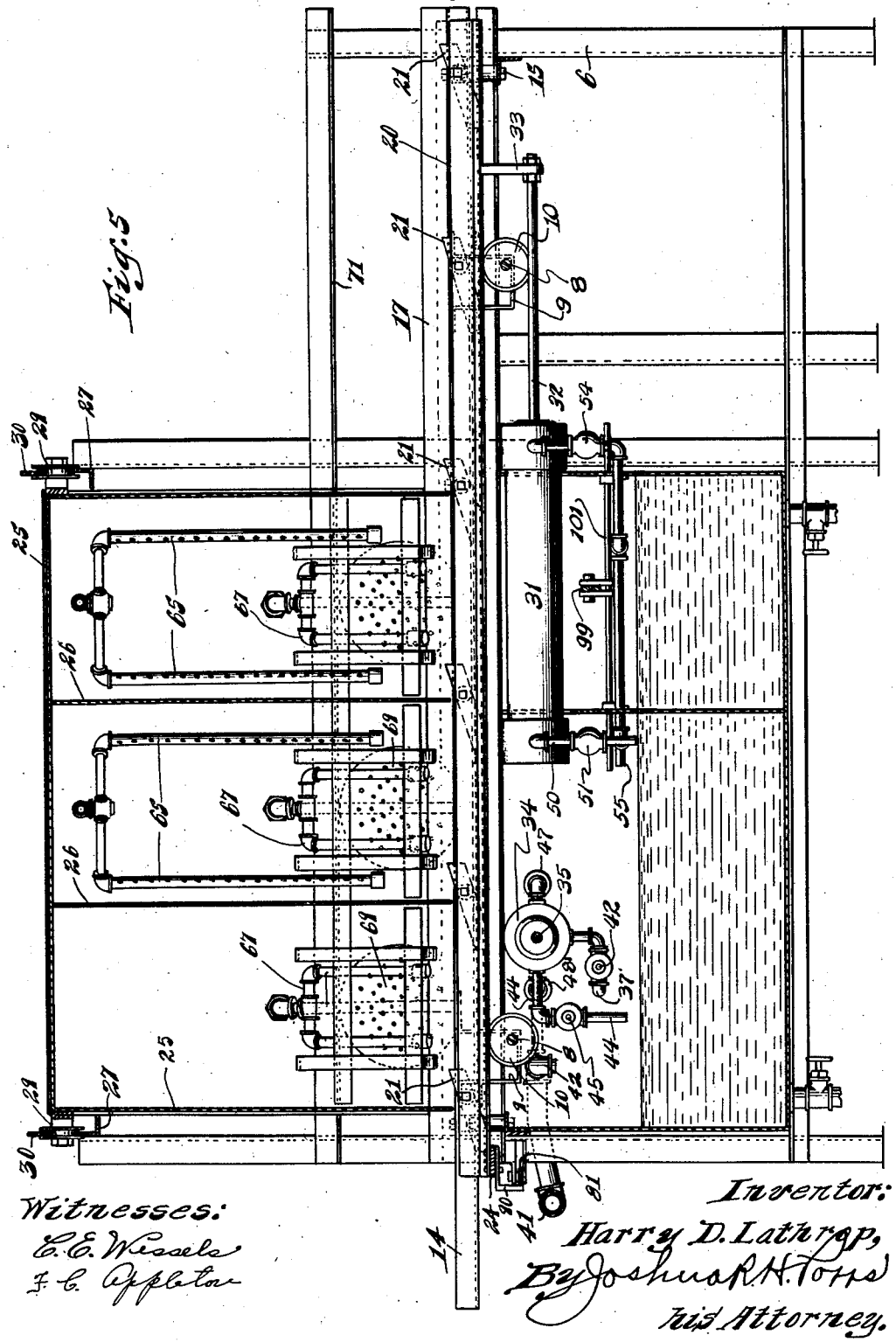
Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 5

Fig. 5



Witnesses:
E. E. Wessels
F. C. Appleton

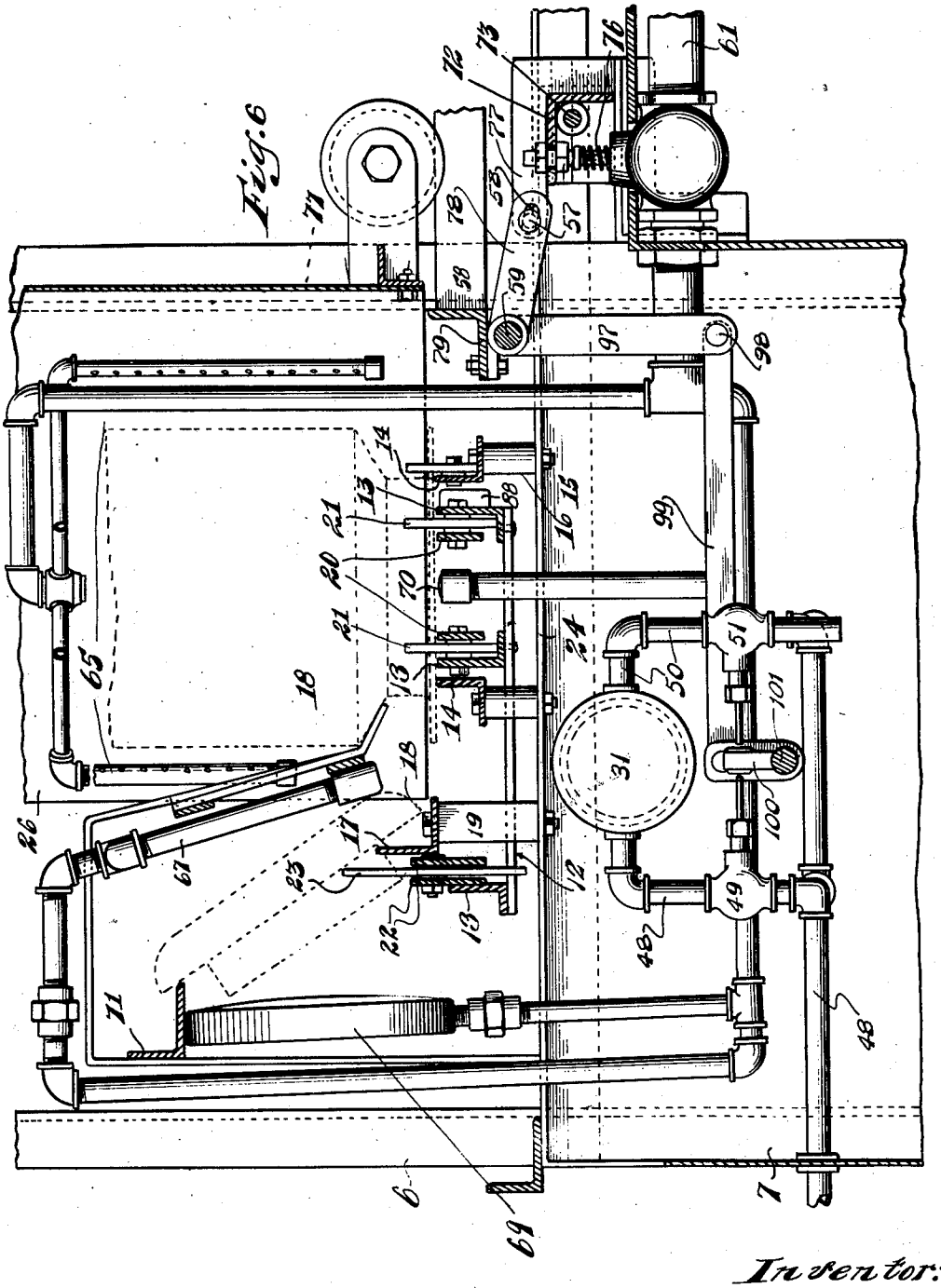
Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 6

Fig. 6



Witnesses:
E. E. Kassola
F. L. Appleton

Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

July 22, 1930. H. D. LATHROP 1,770,931

MILK CAN WASHING MACHINE

Filed May 27, 1927 7 Sheets-Sheet 7

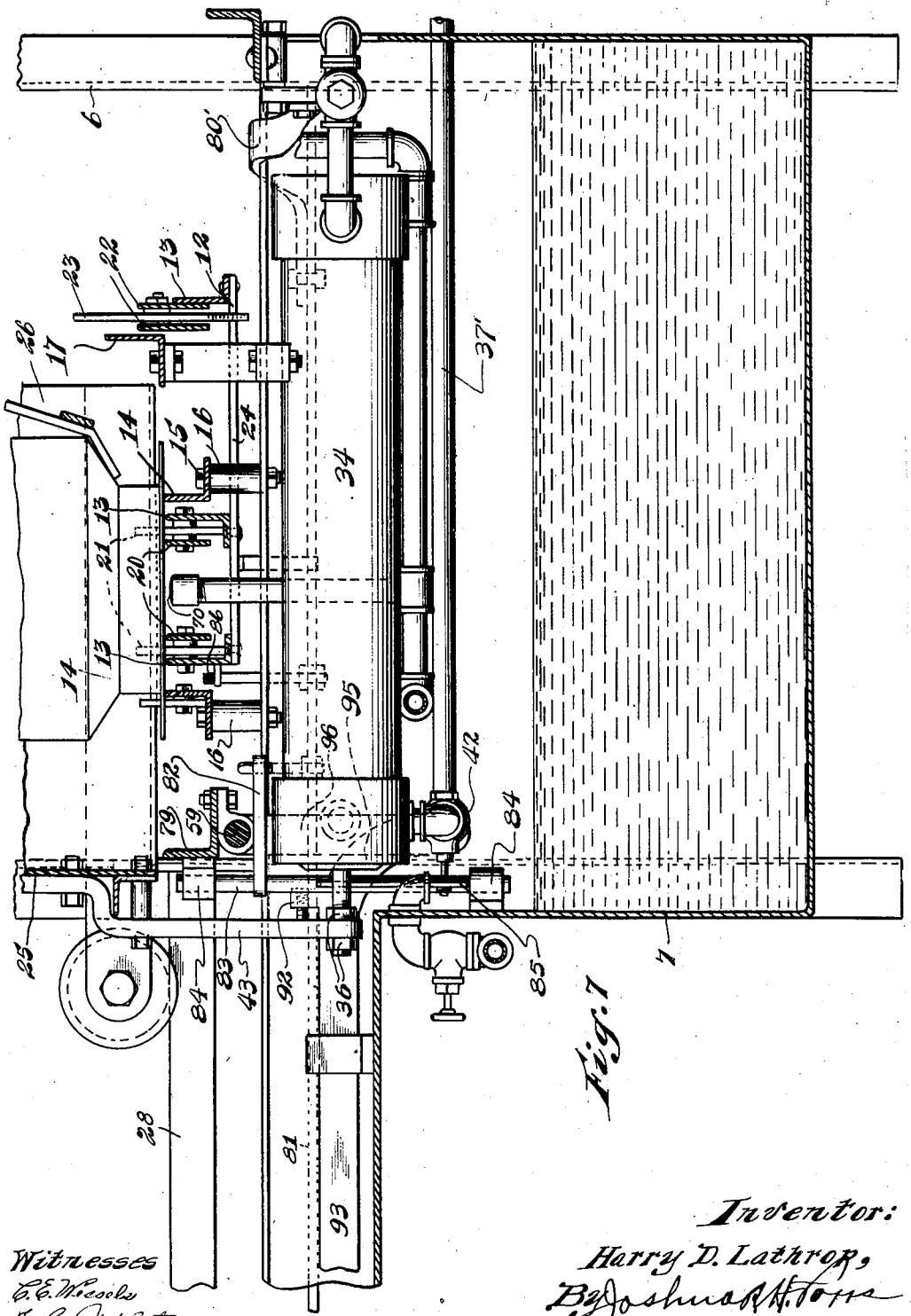


Fig. 1

Witnesses
C. E. Wescoln
F. C. Appleton

Inventor:
Harry D. Lathrop,
By Joshua R. H. Potts
his Attorney.

Patented July 22, 1930 1,770,931

UNITED STATES PATENT OFFICE

HARRY D. LATHROP, OF CHICAGO, ILLINOIS

MILK-CAN-WASHING MACHINE

Application filed May 27, 1927. Serial No. 194,598.

My invention relates to milk can washing machines and more particularly to that type of machine disclosed in my pending application, Serial Number 163,619, filed January 26, 1927.

The principal object of my invention is to provide a can washing machine, which is entirely automatic in operation, to convey and wash cans after they have been placed on the machine.

A further object of my invention is, to provide a machine of the above character having can conveying means for conveying the cans to the washing apparatus, and a hood for inclosing the cans while the washing operation is in progress, which is movable at right angles to the path of travel of the conveyer means, and is automatically actuated to operative and inoperative positions.

Another object of my invention is to provide a can washing machine embodying a common fluid operating mechanism for actuating the conveyer means and carriage together with a novel control mechanism timed to shift the carriage to operative and inoperative positions, incident to the movement of the conveyer means.

Another object of my invention resides in the provision of means for washing milk cans and their closures whether attached to the can or detached therefrom.

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

Figure 1 is an end elevation of my improved can washing machine.

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1.

Figure 3 is a top plan view of my invention, having parts shown in section.

Figure 4 is a rear elevation of the hood embodied in my invention.

Figure 5 is a longitudinal sectional view taken on line 5—5 of Figure 2.

Figure 6 is a transverse sectional view taken on line 6—6 of Figure 2.

Figure 7 is a similar view taken on line 7—7 of Figure 2.

Figure 8 is a side elevation of that disclosed in Figure 4.

In the drawings and for the purpose of illustration, I have shown the preferred embodiment of my invention in which 5 represents a skeleton frame being constructed of angle iron including pairs of vertical legs 6, arranged at the ends of the frame and between which a tank or reservoir 7 is supported. Extending transversely of the frame adjacent its opposite ends are shafts 8 whose ends are loosely mounted in U-shaped brackets or bearings 9. Fixed to each of these shafts, adjacent one end, is a pair of rollers 10, while a single roller 11 is fixed adjacent its opposite end (Figure 2).

A reciprocable carriage 12 is arranged for movement longitudinally of the frame and comprises parallel angle bars 13, resting upon and movable on the rollers 10. Transverse bars 24 are riveted or otherwise secured to the angle bars 13 for connecting them together. Disposed upon opposite sides of the two adjacent angle bars 13, which are the inner two employed in advancing the cans, are angle guide rails 14, being engaged by bolts 15 which pass through the frame 5. Spacing sleeves 16 are received upon each of these bolts and contact with the underface of the guide rails 14. A similar guide bar 17 is arranged along the other bar 13, and bolts 18 pass through the frame 5 and engage with said guide bar 17. Received on these bolts are spacing sleeves 19. Extending-longitudinally of each of the adjacent bars 13 and disposed in spaced relation thereto are bars 20, and between each angle bar 13 and the adjacent bar 20 there is pivotally mounted a dog 21. A pair of spaced bars 22 are attached to the remaining bar 13 which is employed in advancing the covers, and pivoted therebetween are a plurality of relatively long can top engaging dogs 23.

For the purpose of enclosing the cans while they are being carried through the washing apparatus, I have provided a reciprocable hood designated in its entirety as 25. Said hood 25 is constructed from sheet metal, is arranged along the reciprocable carriage in a manner to be hereinafter referred to. It is

substantially rectangular in form and open at the front to permit its passing over and enclosing cans while on said carriage. Transverse portions 26 are provided in the hood to accord individual can compartments. Supported by the upper ends of the legs 6 is a pair of trackways 27 while a similar pair of trackways 28 is attached to the frame at a point in substantially the same horizontal plane as the carriage 12. A pair of rollers 29 are carried by the upper and lower ends of the hood at the front and rear respectively and are movable on the trackways 27 and 28. U-shaped yokes 30 overlie the trackways 27 and have their ends attached to the legs 6 and serve to hold the upper rollers 29 against accidental derailment.

In order to reciprocate the carriage 12 and the hood 25 in timed relation, I have provided a fluid actuated mechanism, best shown in Figures 2, 3, 6 and 7. This fluid actuated mechanism comprises a cylinder 31 extended longitudinally of the frame 5 and suitably attached thereto. A piston 32′, reciprocable in the cylinder 31 is secured to a piston rod 32 which has its forward end rigidly attached to the carriage 12 by means of a lateral arm 33. A second cylinder 34 extends transversely of the frame and is suitably attached thereto. Mounted in cylinder 34 is a piston 35′ arranged to actuate a piston rod 35 which in turn actuates the hood 25 in a manner to be hereinafter described.

A motor driven pump 38 is supported on the frame 5 at one side of the tank 7 and has its inlet 39 adapted to receive water from said tank 7 and force it through the by-pass 40 communicating with the pump outlets 40′. The main supply pipe 41 leads from the by-pass 40, extends around one end of the tank 7, and communicates with the rear end of cylinder 34, through valve 48′. Fixed to and depending from the rear wall of hood 25 is a plate 43 to which the piston rod 35 is secured by suitable nuts 36, for the purpose of reciprocating the hood 25 when the piston 35 is reciprocated. A pipe 37 leads from the pipe 41 and has an extension 37′ which leads to the rearward end of cylinder 34 through the valve 42 as shown in Figure 7. An exhaust pipe 44 leads from the rearward end of cylinder 34 through the valve 45. From the forward end of piston 34 an exhaust pipe 46 (Fig. 3) exhausts into the tank 7 through the valve 47.

Leading from the pipe 41 is a similar pipe 48 which leads into one end of cylinder 31 through the valve 49. An exhaust pipe 50 leads from the same end of cylinder 31 and exhausts into tank 7 through the valve. 51. Leading from the pipe 48 is a pipe 53 which leads to the other end of cylinder 31 through valve 54. An exhaust pipe 55 leads from the last said end of cylinder 31 through the valve 56 and empties into the tank 7. The washing apparatus comprises a plurality of supply pipes 60, 61, 62 and 63 for supplying cold water, sodium water, hot water and steam respectively. T he pipe 61 is connected with the by-pass 40, and gets its supply of sodium solution from the tank 7 by way of pump 38. Said pipes 60, 61, 62 and 63 communicate with the overhanging needle sprays 65 arranged above the carriage along the length of the same and play upon the exterior of the cans as said cans are advanced in an inverted position through the machine. The washing apparatus also contemplates means for washing the interior and exterior of the can lids and for that purpose, branch pipes 66 lead from each of the pipes 60 to 63 inclusive and extend transversely across the frame 5, and from thence extend vertically to points above the carriage and to one side of the needle sprays 65 and communicate with U-shaped needle sprays 67. From each of the pipes 66 at points to one side of the carriage leads a short vertical pipe 68. Supported by and communicating with said pipe 68 are circular perforated spray heads 69. For washing the interior of the cans are provided vertical sprays 70 which lead from the pipes 66, and which are disposed between the rails 13 of said carriage 12. As shown in dotted lines in Figure 6, the cans are arranged in an inverted position on the carriage 12 with their open ends overlying said sprays 70. The can tops are supported in an angular position between the U-shaped sprays 67 and the spray heads 69. Upper can top supporting rail 71 and lower supporting rail or guide bar 17 are spaced vertically and horizontally from each other and extend longitudinally parallel of the frame as shown in Figure 6.

To control the flow through the various pipes and to the cylinder 34, I have provided an automatic control which consists of an angle plate 72 fixed to shaft 73 by any suitable means and whose ends are journalled in bearings 74 projecting from the tank 7 at points in close proximity to the supply pipes; said plate carries valve depressing heads 75 disposed in vertical alinement with spring seated valves 76 arranged in each of the pipes 60 to 63 inclusive. Plate 72 carries an extension 77 which is loosely connected with a rocker arm 78 by means of a pin 57 passing through a slot 58. The rocker arm 78 is rigidly secured to a longitudinally extending rock shaft 59 which is journalled to the lower side of an angle bar 79 in any suitable manner.

Extending transversely of the frame 5 at the rear end thereof is a lever 81 having one end pivoted to the frame and the other end movable in an oscillatory motion. Operatively connected with lever 81 intermediate of its ends is a rod 80 extending beneath the hood to an oscillatory lever 82 which is rigidly secured to an oscillatory shaft 83, journalled in bearings 84. A valve operating

plate 85 is secured to shaft 83 as shown in Figures 3 and 7, which is adapted to close valve 45 and simultaneously open valve 42 when the lever 81 is oscillated.

Secured near the pivoted end of lever 81 is a lever 80′, which is adapted to oscillate a lever 82′ for operating the valves 47 and 48 when lever 81 is oscillated. Another lever 86 is operatively connected with the lever 81 and is slidably supported on brackets 87 on the frame 5, and its forward end disposed in the path of movement of a lug 88 extending laterally from the carriage intermediate its ends; said lug 88 being adapted to engage said rod 86 upon the return movement of the carriage and thereby shift the lever 81 in the rearward direction which in turn shifts the rods 80 and 80′ rearwardly for operating the intake and exhaust valves of cylinder 34 as hereinbefore described. A stop shoe 90 is carried by the rear end of the carriage 12, which is adapted to engage the lever 81 upon the forward movement of said carriage.

Secured to the rear side of hood 25 is a downwardly extending bar 89 which is adapted to engage lugs 91 (Fig. 2) and 92 (Fig. 7) on a reciprocal bar 93 slidably mounted in brackets 94 as shown in Figure 2. Said bar 93 is provided with a downwardly curved forward end 95 which is pivotally secured to a downwardly extending arm 96, which is rigidly secured to the oscillatory shaft 59. Extending downwardly from shaft 59 and rigidly secured thereto is a lever 97 pivoted at 98 with a cross bar 99 which is adapted to oscillate valve operating members 100, secured to the oscillatory shafts 101, when said shaft 59 is oscillated, for operating the intake and exhaust valves of cylinder 31.

In the opertion of my invention, sodium solution is pumped from the tank 7 through the by-pass 40 and through the pipe 41. Let us assume the carriage 12 to be in its rearward position and the lug 88 in engagement with bar 86 which holds the lever 81 rearwardly. When in this position the lever 80′ causes the member 82′ to open valve 48′ which admits fluid from pipe 41 to the cylinder 34. The valve operating member 82 holds the valve 47 closed when the valve 48 is held open so as to prevent the exhaust of water from that end of the piston. With the lever 81 in the rearward position the rod 80 is holding the lever 82 in a rearward position which through the medium of shaft 83 and the valve operating plate 85, causes the exhaust valve 45 to open and the intake valve 42 to close, thereby permitting fluid pressure from pipe 41 to force the piston 35′ in such a direction as to remove the hood 25 from its normal position over the carriage 12.

When the hood 25 reaches its extreme limit in the direction away from carriage 12 the bar 89 engages a lug 91 on the bar 93 which causes said bar 93 to oscillate, the downwardly extending arm 96 and the shaft 59 to which said bar 96 is rigidly secured. The arm 97 is likewise rigidly secured to the rock shaft 59 and therefore operates the lever 99 which through the medium of the valve operating member 100 opens the valve 49 permitting fluid pressure to pass from the pipe 41 through pipe 48 through the valve 49 and to the rear end of cylinder 31. The fluid coming into cylinder 31 forces the piston 32′ forwardly and pushes the carriage 12 forwardly by means of the arm 33. The milk cans to be washed are in position on the carriage 12 as indicated in Figures 6 and 7 and when the carriage moves forwardly the dogs 21 engage the cans and move them forwardly along with the carriage, and at the same time the dogs 23 engage the can tops and move them forwardly. The hood 25 is now ready to be closed upon the cans and as the carriage 12 reaches its extreme forward limit the member 90 on the rearward end of the carriage engages the bar 81, moving it forwardly which moves the levers 80 and 80′ forwardly thereby reversing the valve action and permitting water to exhaust into the tank 7 through valve 47 closing the valve 48′ and the valve 45 and opening the valve 42 which permits fluid pressure from the pipe 41 to pass into cylinder 34 through the valve 42 and force the piston 35′ in such a direction as to close the hood about the cans on the carriage 12. The piston rod 35 being rigidly secured to the depending bar 43 on the hood 25 causes said hood to reciprocate with the piston rod 35.

When the hood 25 reaches its closed position the depending bar 89 engages a lug 92 on the bar 93 and oscillates the shaft 59 as previously described and thereby oscillates the arm 78 which in turn oscillates the angular member 77 about the shaft 73 which causes the valve operating plate 72 to be oscillated so as to open the valves 75 and permit fluid to pass through the pipes 66 and wash the cans which are under the hood. The shaft 59 having oscillated as just described causes the bar 99 to reverse the operation of the valves on cylinder 31, that is the valve 49 is closed and valve 51 opened, which permits fluid to exhaust from the rearward end on cylinder 31. Valve 54 is opened, permitting fluid pressure to enter the forward end of cylinder 31 and the exhaust valve 56 is closed. While in this position fluid enters the forward end of piston 31 and forces the piston 32′ and piston 32 rearwardly, moving the carriage 12 rearwardly with it, and while the carriage is being moved from its extreme forward to its extreme rearward positions, the washing process is continued.

When the carriage 12 reaches its extreme rearward position the valves of cylinder 34 are again positioned as they were at the beginning of this operation and the piston 35

is again moved in such a direction as to remove the hood 25 from its position over the cans on the carriage, and the valves 75 are again closed so that the spraying and washing operation is discontinued while the hood is removed from over the carriage. It is obvious that the cans being washed do not return rearwardly with the rearward movement of the carriage, but are moved forwardly by the dogs on the carriage when said car is moved forwardly, and the cans are washed during the rearward movement of the carriage and the hood moves out of the way in order that the cans may be advanced again on the next forward movement of the carriage.

Having described my invention in its preferred form of construction, it is capable of variation without departing from the spirit of the invention. I therefore do not wish to be limited to the exact details of construction illustrated and described but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted on said frame to move into and away from a position enclosing said washing means and the articles to be washed, and means timed with the operation of said conveyor for alternately moving said hood into and away from enclosing position during the pause in the movement of said conveyor.

2. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted on said frame for movement at right angles to the path of travel of the articles to be washed into and away from a position enclosing said washing means and said articles, means for alternately moving said hood and conveyor, valves for controlling the operation of said washing means and means on said hood for operating said valves while said articles are enclosed by said hood.

3. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor, supported above said conveyor for cleaning articles carried thereby, a hood mounted on said frame to move into and away from a position enclosing said washing means and the articles to be washed, and means timed with the operation of said conveyor for alternately moving said hood into and away from enclosing position during the pause in the movement of said conveyor.

4. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted on said frame to move into and away from a position enclosing said washing means and the articles to be washed, means for imparting intermittent motion to said conveyor and means timed with the operation of the conveyor for moving said hood to enclose the articles to be washed, subsequent to each forward movement of the conveyor.

5. An article washing machine comprising a frame, a reciprocating conveyor mounted thereon for conducting receptacles along a predetermined path, washing means along the path of the conveyor for cleaning receptacles carried thereby, a reciprocating hood mounted on said frame, and movable at right angles to said conveyor for intermittently enclosing said washing means and the receptacles to be washed, mechanism for alternately advancing the conveyor and moving the hood to enclosing position and returning the same to first position in the same order, and means on said conveyor and said hood for controlling said mechanism.

6. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for moving cans along a predetermined path, other means carried by the carriage for moving can covers along a path parallel with the movement of the cans, washing means along the paths of movement of said cans and covers, a reciprocating hood mounted on said frame for movement at right angles to said carriage for intermittently enclosing said washing means and said cans, means for reciprocating said carriage, and means timed with the operation of said carriage for moving said hood into and away from enclosing position during the pause in the movement of said carriage.

7. A can washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting cans and covers along predetermined parallel paths, washing means along said paths for cleaning said cans and covers, an intermittently operable hood mounted on said frame and movable into and away from a position enclosing said washing means and the cans to be washed, said conveyor comprising two can cover rest rails, one of which is parallel with and spaced vertically and horizontally from the other, engaging elements for engaging and moving said cans and covers, step by step, upon each

forward operation of the conveyor, and means timed with the operation of said conveyor for moving said hood into enclosing position during the pause in the movement of the conveyor.

8. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders, supported at right angles to each other and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, means for forcing fluid into said cylinders to successively advance the carriage and move the hood into enclosing position, and means for releasing said fluid and permitting said carriage and said hood to be returned to their initial position in the same order.

9. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders, supported at right angles to each other and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, means for forcing fluid into said cylinders to successively advance the carriage and move the hood into enclosing position, and means for releasing said fluid and permitting said carriage and said hood to be returned to their initial position in the same order, valves for controlling said washing means, and means operated by the hood when in enclosing position to open said valves.

10. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted on said frame to move into and away from a position enclosing said washing means and the articles to be washed, a piston operatively connected to said conveyor for intermittently operating said conveyor, and a piston operatively connected to said hood and operable in timed relation to the operation of the conveyor for moving said hood to enclose the articles to be washed during the pause in the operation of the conveyor and subsequent to each forward movement thereof.

11. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage, for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders, supported at right angles to each other and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, means for supplying fluid pressure to said cylinders for reciprocating said pistons, means timed with the movement of the carriage for alternately admitting fluid pressure to opposite ends of the cylinder having its piston connected with said hood, and means timed with the movement of the hood for alternately admitting fluid pressure to opposite ends of the cylinder having its piston connected with the carriage.

12. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans, while being washed, fluid pressure means comprising two cylinders supported at right angles to each other, and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, means for supplying fluid pressure to said cylinders for reciprocating said pistons, valves operated by the carriage at the ends of its movements for alternately admitting fluid pressure to opposite sides of the piston connected with the hood, and valves operated by the hood for alternately admitting fluid pressure to opposite sides of the piston connected to the carriage.

13. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylin-

ders, supported at right angles to each other and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, means for forcing fluid into said cylinders to successively advance the carriage and move the hood into enclosing position, and means for releasing said fluid and permitting said carriage and said hood to be returned to their initial position in the same order, said washing means comprising sprays, a plurality of pipes for supplying washing fluid to said sprays, normally seated valves in said pipes, a pivoted valve depressing member supported on said frame adjacent said valves for opening said valves, and means operated by the hood when in its enclosing position to move said member and open said valves.

14. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted on said frame to move into and away from a position enclosing said washing means and the articles to be washed, means for imparting intermittent motion to said conveyor, means for alternately moving said hood and conveyor, pipes for supplying washing fluids to said washing means, spring pressed normally closed valves in said pipes, a pivoted valve depressing member supported on said frame adjacent said valves, a pivoted element mounted on said frame normally engaging said valve depressing member and means operable upon the movement of the hood to its enclosing position to actuate said pivoted element and open said valves.

15. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted upon said frame to move into and away from a position enclosing said washing means and the articles to be washed, fluid pressure actuating means operatively connected with said hood to reciprocate said hood in timed relation with the operation of said conveyor.

16. An article washing machine comprising a frame, an intermittently operable conveyor on said frame for conducting articles, step by step, along a predetermined path, washing means along the path of the conveyor for cleaning articles carried thereby, a hood mounted upon said frame to move into and away from a position enclosing said washing means and the articles to be washed, fluid pressure actuating means operatively connected with said hood to reciprocate said hood in timed relation with the operation of said conveyor, and means for rendering said washing means operative when the hood is in a position enclosing the articles to be washed.

17. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders supported at right angles to each other, and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, a source of fluid pressure, means for transmitting fluid from said source to said cylinders, valves for controlling the admission of fluid to and from said cylinders, means actuated by the movement of said hood for controlling the operation of the valves which control the reciprocation of said hood, and means actuated by said hood for controlling the operation of the valves which control the reciprocation of said carriage.

18. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood operable in timed relation with and at right angles to said carriage for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders supported at right angles to each other, and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, a source of fluid pressure, means for transmitting fluid from said source to said cylinders, valves for controlling the admission of fluid to and from said cylinders, means actuated by the movement of said hood for controlling the operation of the valves which control the reciprocation of said hood, and means actuated by said hood for controlling the operation of the valves which control the reciprocation of said carriage, and means operated by said hood for controlling the supply of washing fluid to said washing means.

19. A can washing machine comprising a frame, a reciprocating carriage mounted thereon, means carried by the carriage for engaging and moving cans, step by step, along a predetermined path, washing means arranged along said path for cleaning said cans, an intermittently movable hood oper-

able in timed relation with and at right angles to said carriage, for enclosing said washing means and said cans while being washed, fluid pressure means comprising two cylinders supported at right angles to each other, and having pistons therein, one of said pistons being operatively connected to said carriage, means operatively connecting the other piston to said hood, a source of fluid pressure, means for transmitting fluid from said source to said cylinders, valves for controlling the admission of fluid to and from said cylinders, means actuated by the movement of said hood for controlling the operation of the valves which control the reciprocation of said hood, and means actuated by said hood for controlling the operation of the valve which control the reciprocation of said carriage, said washing means comprising sprays, means for transmitting washing fluid to said sprays, spring-held valves in said transmitting means, and means operated by said hood for opening said spring-held valves when the hood is in a position to enclose said sprays.

In testimony whereof I have signed my name to this specification.

HARRY D. LATHROP.