Sept. 12, 1950 A. W. SMITH 2,522,310

CAN WASHER

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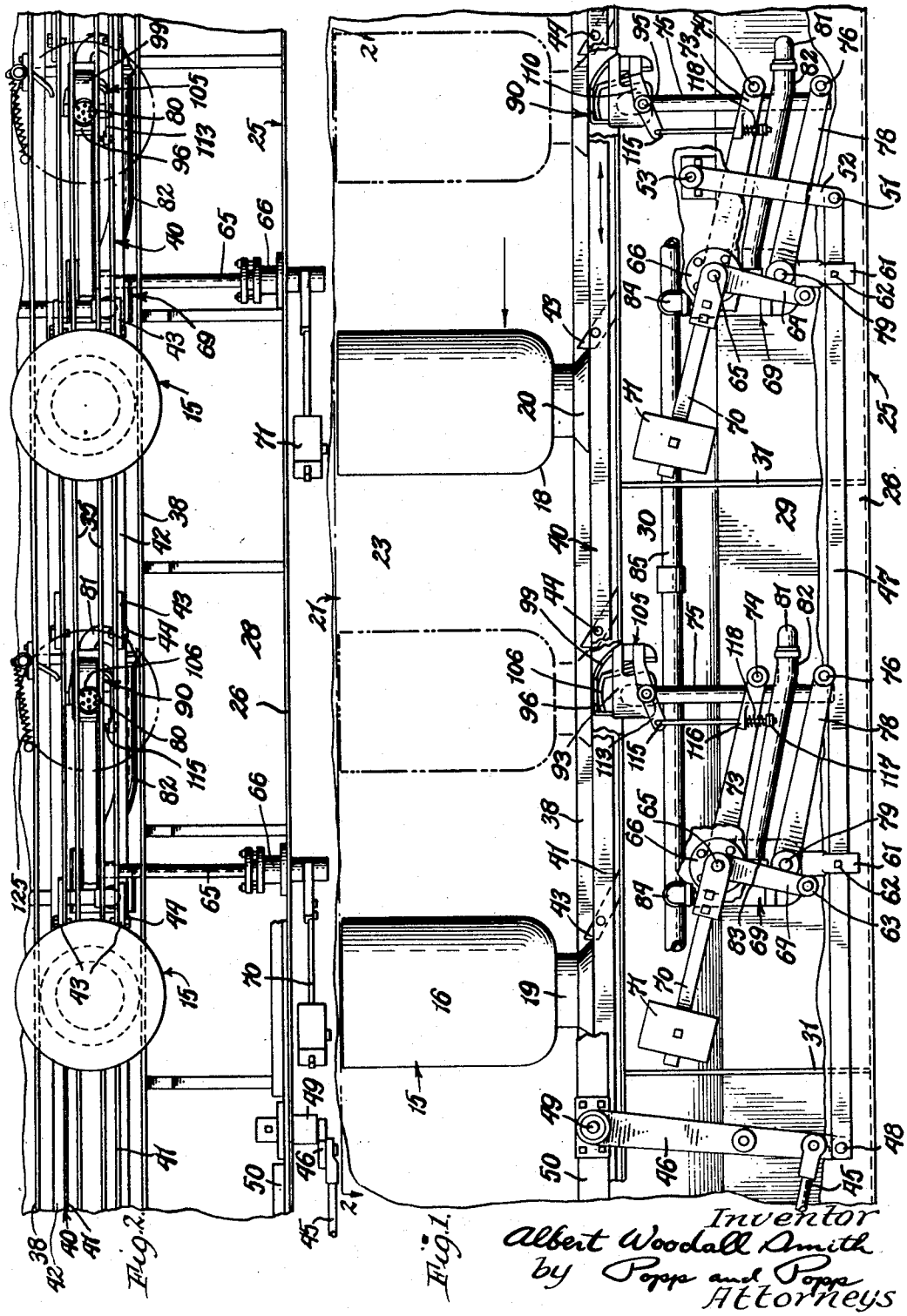


Fig. 2.

Fig. 1.

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CAN WASHER

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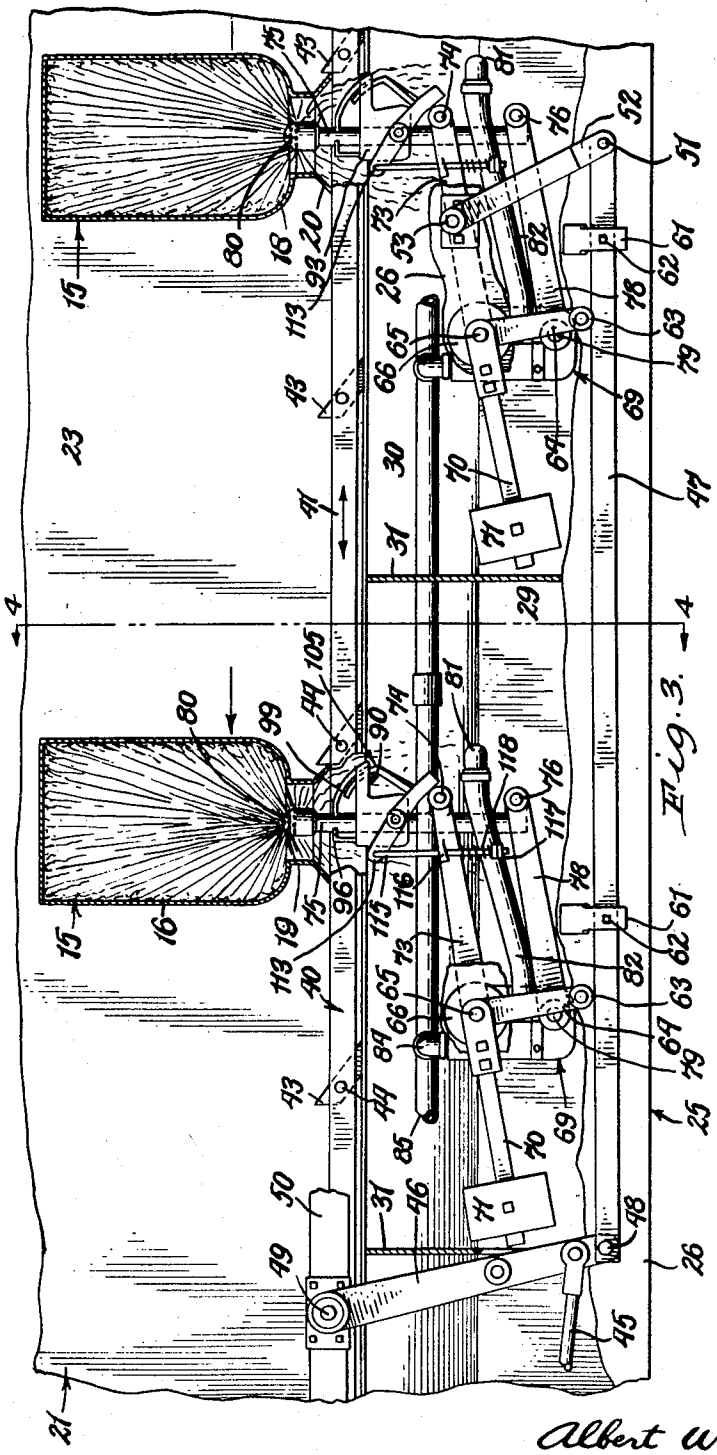


Fig. 3.

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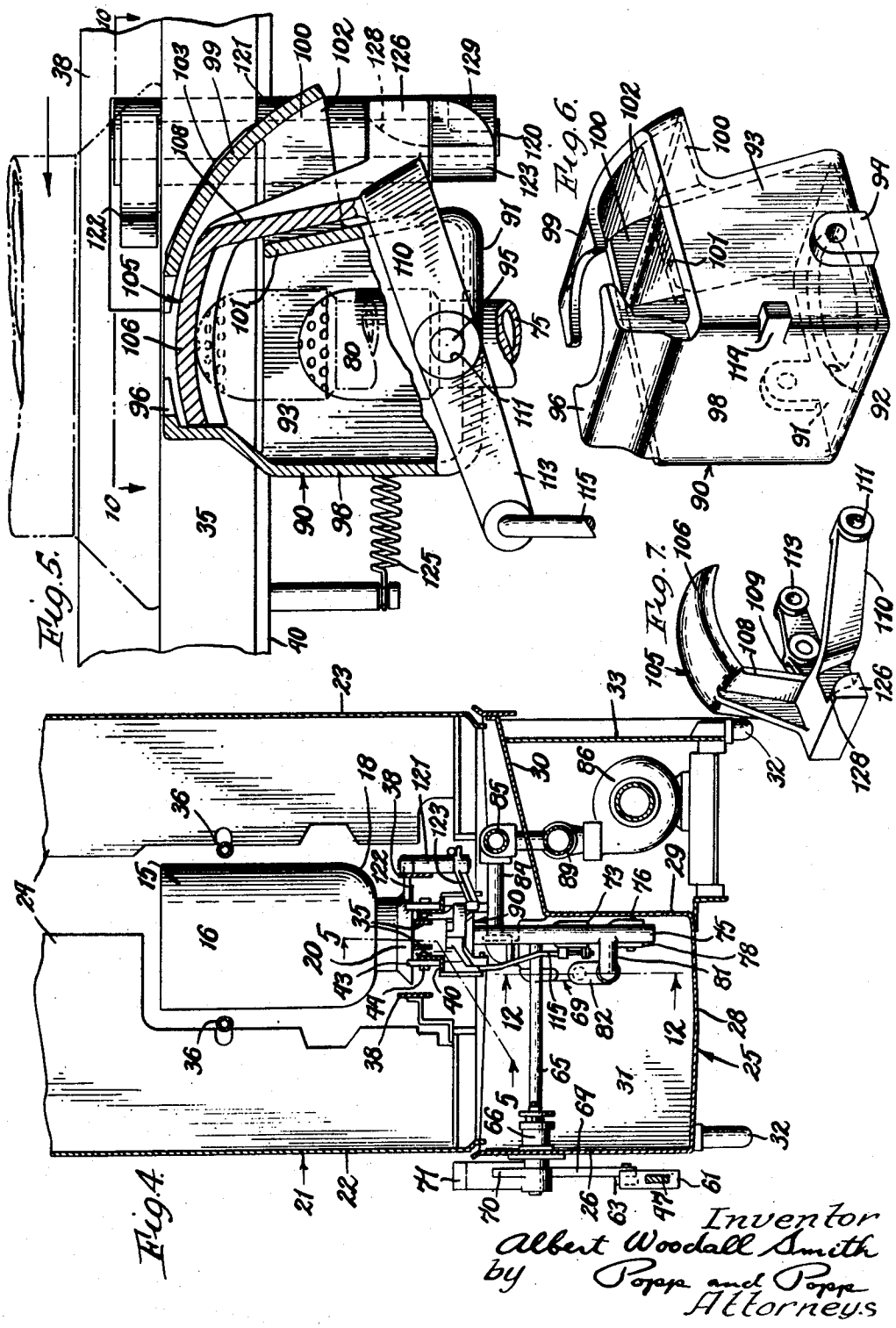


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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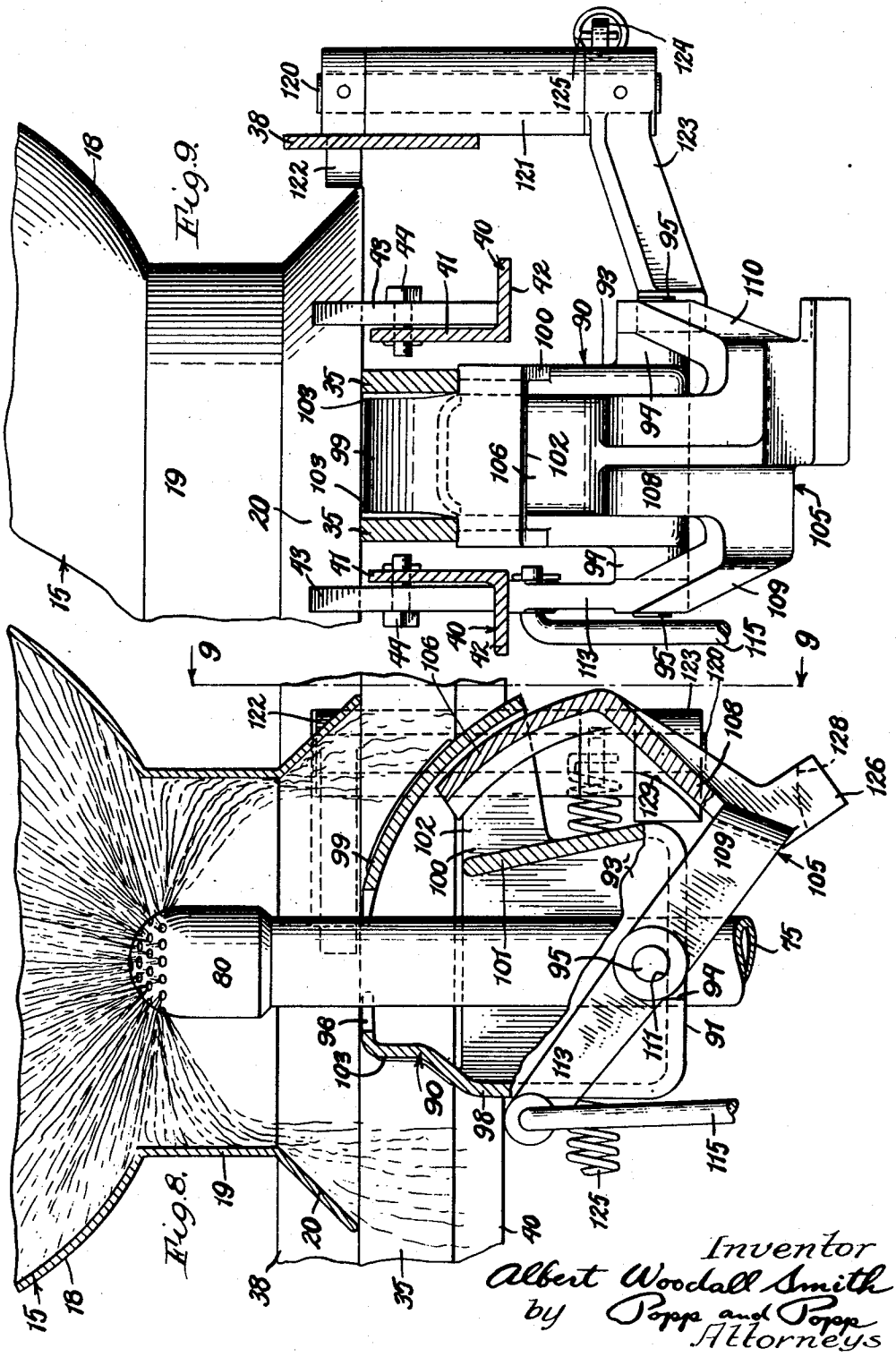


Fig. 9.

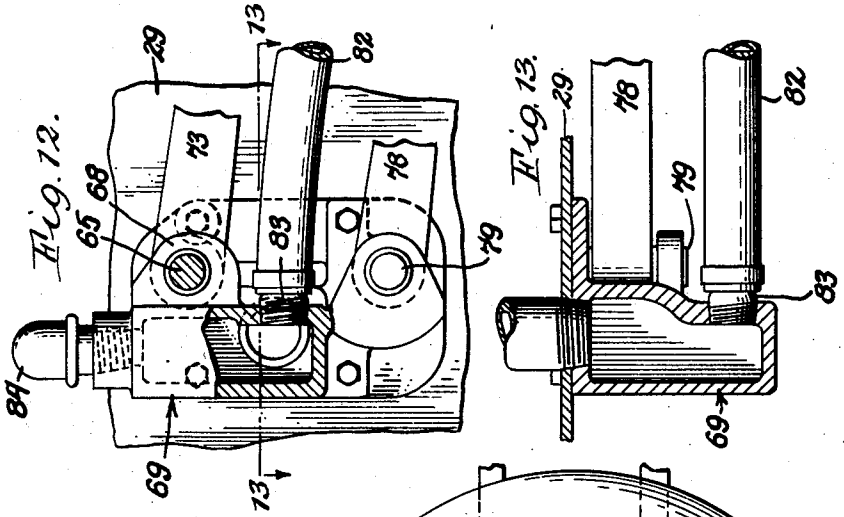
Fig. 8.

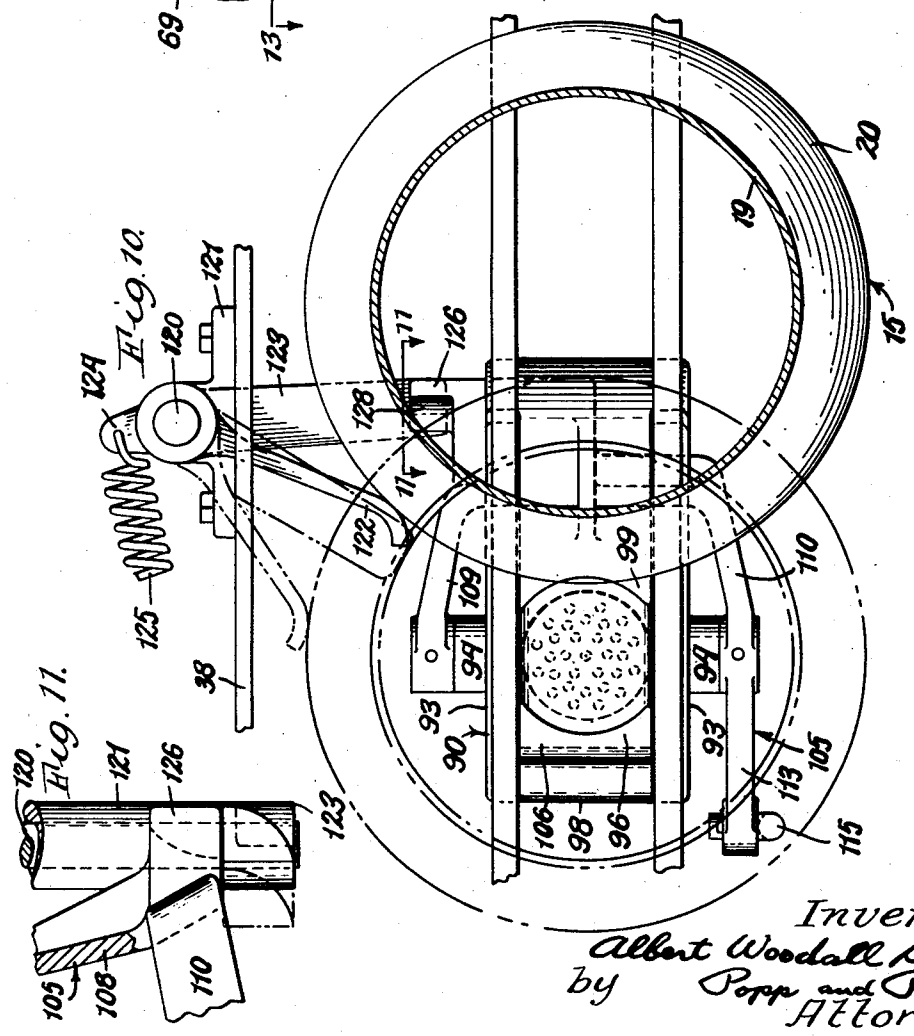
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CAN WASHER

Filed July 28, 1948 5 Sheets-Sheet 5





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UNITED STATES PATENT OFFICE

2,522,310

CAN WASHER

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Application July 28, 1948, Serial No. 41,109

11 Claims. (Cl. 134—52)

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This invention relates to a can washer and more particularly to a washer for handling a succession of milk cans which, because of their use, are extremely difficult to wash to the desired degree of cleanliness.

Washing milk cans used for bringing fluid milk from the farms to a dairy does not present unusual difficulties because the fresh fluid milk is readily washed away. However, when such milk cans are used to ship fluid milk long distances, or are used to ship condensed milk, or ice cream batches, or similar heavy bodied products, it is extremely difficult to remove completely all road dirt from the can lips, the pouring strip left on the can necks and lips, by condensed milk or ice cream batch and also accumulations of so-called milk stone in those parts of the cans where it collects due to inefficient washing. To cleanse such milk cans it has been proposed to provide the can with a suitable number of rising jets which are automatically projected into the interior of each can passing through the can washer. These jets project wash and rinse water at high velocity against all internal surfaces of the can as well as the inside of the pouring lip and effectively remove all soap stone, heavy bodied contents, grease and dirt from these difficult to clean cans. The present invention relates to such rising jet type of milk can washers.

One of the principal objects of the present invention is to provide such a rising jet type of can washer in which the mechanism for projecting and retracting the jets in timed relation to the passing milk cans is of simple construction and composed of relatively few parts thereby to reduce the initial and maintenance cost of the can washer.

Another object is to provide such a mechanism for projecting and retracting jets in timed relation to passing milk cans which has improved performance, particularly in positively holding each jet below the can track level when no can is present.

Another object is to eliminate sliding joints, particularly for the rising jets, such sliding joints having been found to bind, due to the difficulty of lubrication, and interfere with the proper operation of the rising jet mechanism.

Another object is to provide a rising jet supplied with liquid under pressure through a flexible hose in which stretching or compression of the hose in the operation of the sliding jet is avoided and in which there is no strain, binding or interference with the operation of the rising jet by the hose. With sliding joints which

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constrain the movement of the jets to a straight line and supplied with liquid through a flexible hose securely clamped at one end to the rising jet and at its other end to a supply pipe, the hose was found to bind and interfere with the proper operation of the rising jet mechanism due to strains imposed on the sliding joints or guide bearings by the stretching of the hose at the end of each stroke and compression of the hose in the middle of the stroke. In the practice of the present invention stretching and compression of the hose in the operation of the rising jet mechanism is reduced to a negligible quantity due to the hose being of approximately the same length as parallel links supporting the rising jet and the fixed ends of the hose being approximately in line with the pivot ends of such links. The moving end of the hose thereby describes a radius approximately the same as the radius described by the moving end of each link.

Another object is to provide such a mechanism for projecting and retracting jets in timed relation to passing milk cans which is composed of simple and low cost parts and which is not likely to get out of order under conditions of severe and constant use.

Another object is to provide such rising jets which when retracted are completely hooded and held below the can track level at the time when the jets would normally rise to a can were it present at the indexed position. Such rising jet is thereby prevented from spraying washing solution into the rinse water tanks and vice versa.

Other objects and advantages of the invention will appear from the following description and drawings in which:

Fig. 1 is a fragmentary side elevational view of a milk can washer embodying the present invention, with parts broken away to disclose the operating mechanism.

Fig. 2 is a fragmentary plan view of the operating mechanism shown in Fig. 1, the view being taken on line 2—2, Fig. 1.

Fig. 3 is a view similar to Fig. 1 and showing another position of the parts.

Fig. 4 is a fragmentary transverse sectional view taken on line 4—4, Fig. 3.

Fig. 5 is an enlarged fragmentary view similar to Figs. 1 and 3, of a part of the mechanism adjacent the spray head of one of the rising jets, this section being taken on line 5—5, Fig. 4.

Fig. 6 is a perspective view of one of the housings or casings into which the spray heads are retracted.

Fig. 7 is a perspective view of the retainer for holding a companion rising jet retracted.

Fig. 8 is a fragmentary view similar to Fig. 5 and showing another position of the parts.

Fig. 9 is a vertical sectional view taken on line 9—9, Fig. 8.

Fig. 10 is a horizontal sectional view taken on line 10—10, Fig. 5.

Fig. 11 is a vertical fragmentary section taken on line 11—11, Fig. 10.

Fig. 12 is a fragmentary enlarged vertical section taken generally on line 12—12, Fig. 4.

Fig. 13 is a fragmentary horizontal section taken on line 13—13, Fig. 12.

The can washer forming the subject of the present invention is designed to clean a succession of milk cans 15, particularly the interior of the bodies 16, breasts 18, necks 19 and pouring lips 20 of such milk cans which have been used in transporting heavy bodied products such as condensed milk or ice cream batch.

As best shown in Fig. 4 the can washer has the conventional enclosing casing through which a procession of inverted cans pass from one end to the other, this casing being shown as comprising an upper rectangular sheet metal hood 21 having side walls 22 and 23 and end walls 24, each of the latter having openings to permit the passage of the line of milk cans 15. This hood 21 is arranged above a sump or tank 25 in which the washing solution or rinse water sprayed against the exterior and interior of the line of milk cans 15 collects for recirculation through the sprays.

The sump 25 is shown as having a side wall 26 in line with the side wall 22 of the hood 21, a bottom wall 28, a vertical wall 29 near the longitudinal center of the washer from the upper end of which an inclined drain panel 30 projects to the opposite side wall 23 of the hood 21, and end walls and dividing partitions 31. The sump or tank 25 can be supported on legs 32 and on the side forming the inclined drain panel 30 a removable vertical panel 33 is shown as extending from one end wall 31 of the sump or tank 25 to the other. The sump or tank 25 and inclined drain panel 33 can be divided by the partitions 31 to divide the same into washing and rinsing sections. The dividing partitions 31 permit of dividing the washer into sections such as washing sections in which a washing solution is sprayed against the interior and exterior of the cans, and rinsing sections in which rinse water is similarly sprayed. Since such sectionalization forms no part of the present invention it can be assumed that the rising jet mechanism can be used to spray either a washing solution or rinse water into the passing line of cans.

A pair of spaced horizontal stationary rails 35 are arranged longitudinally and centrally within the hood 21, these rails forming a track supporting the pouring lips 20 of the line of inverted milk cans 15 which are advanced step-by-step along this track through the washer. In this movement the bodies 16 of the milk cans are held against lateral displacement by upper side guard rails 36 and the pouring lips 20 of the cans are held against lateral displacement by stationary lower horizontal side rails 38 arranged along opposite sides thereof.

The line of inverted cans 15 is advanced in spaced relation step-by-step along the track rails 35 from the inlet end to the outlet end of the washer, each can being advanced to the position formerly occupied by its preceding can. For this purpose, as best shown in Fig. 9, a pair of longitudinally reciprocating horizontal dog bars 40 are arranged alongside the can track rail 35, each of these dog bars 40 being arranged slightly below the level of the can track rails 35 between these rails and the lower side rails 38 and being L-shaped in cross section to provide a vertical flange 41 and a lower horizontal flange 42. A series of dogs 43 are shown as pivoted by pins 44 at spaced intervals to the side flange 41 of each of these dog bars 40, each of these dogs having a tail end of preponderating weight normally resting on the horizontal lower flange 42 of its dog bar and the opposite end of each of these dogs being formed to provide a tooth with an abrupt vertical shoulder facing the direction of movement of the line of cans and an inclined face which, on the retrograde movement of the dog bar, permits the tooth of the dog to be depressed by the pouring lip 20 of the next following milk can and to rise, through the preponderating weight of its tail end, on the trailing side of the milk can to engage its abrupt face with the trailing side of the pouring lip 20 thereof. The dogs 43 are equally spaced along each dog bar 40 to provide a regular spacing of the milk cans 15 and the dog bars 40 are reciprocated a distance somewhat greater than the spacing of these dogs so that on each forward reciprocation of the dog bars each milk can is advanced to the position formerly occupied by its preceding milk can. The milk cans are thereby moved to successively advanced stations along the track 35, these stations being indicated by the cans shown in full and dotted lines in Fig. 1, and at each of the stations the cans are permitted to remain stationary while the dog bars 40 are going through their retrograde reciprocatory movement.

The dog bars 40 are reciprocated by any suitable mechanism (not shown) which also reciprocates, through the horizontal connecting rod 45 (Fig. 1), a link or hanger 46 supporting one end of a horizontal bar 47 arranged on one side and exteriorly of the tank so as to reciprocate this horizontal bar 47 in timed relation with the dog bars 40. For this purpose, the horizontal bar 47 is pivoted at one end as at 48, to the lower end of the link 46 which in turn is pivoted, as at 49, at its upper end to a plate 50 forming a part of the side wall 26 of the sump or tank 25 and the horizontal bar 47 is pivoted at its opposite end, as at 51, to the lower end of a link or hanger 52 which in turn is pivoted, as at 53, to the exterior of the side wall 26 of the sump or tank 25. The rising jet mechanism forming the subject of the present invention is actuated by the longitudinal reciprocating movement of the horizontal bar 47 and since the movement of this bar 47 is in timed relation with the movement of the dog bars 40, it will be seen that the rising jet mechanism is in timed relation with the dog bars 40 and hence with the step-by-step movement of the line of cans through the washer. This rising jet mechanism is shown as constructed as follows:

As best shown in Figs. 1 and 4, the horizontal bar 47 carries a pair of actuating or push blocks 61 which are slidable along the bar 47 and can be set at any position therealong as by set screws 62. In the path of each of these blocks 61 is arranged a roller 63 at the lower end of a rock arm 64 which is fast to a shaft 65. Each of these shafts is journaled at its outer end in a bearing 66 secured to the wall 26 of the sump or tank 25 and at its opposite end is journaled in a bearing 68 in a casing 69 fast to the wall 29 of the tank 25, as best shown in Fig. 12. Exteriorly of

the tank wall 26 an arm 70 is fast to each rock shaft 65. A counterweight 71 is hung on this arm 70.

A parallelogram arm 73 is also fast to this shaft 65 adjacent its inner bearings 68, this arm projecting generally horizontally in a direction opposite to the movement of the line of milk cans through the washer, although these arms can be arranged to project in the opposite direction, of course. To the outer end of the parallelogram arm 73 is pivoted, as indicated at 74, a vertical pipe 75, this pipe projecting below the pivot 74 and being pivoted at its lower end, as indicated at 76, to a parallelogram link 78, as best shown in Figs. 1 and 3. As best shown in Figs. 1, 3 and 12, the opposite end of this parallelogram link 78 is pivoted to the casting 69 as indicated at 79. The parallelogram arms 73 and link 78 are of equal length between pivot centers and the spacing between the pivots 68 and 79 and the pivots 74 and 76 is equal and the flexible hose 82 is also of a length substantially equal to the parallelogram arm 73 and link 78 and in consequence a minimum of stretching or compressing of the hose occurs and the minimum of friction is imposed on the bearings during the vertical movement of the parallelogram arm 73 and the counterweight 71 can consequently be kept small in size. It will be seen that when the shaft 65 is rocked by the horizontally reciprocating bar 47 in a corresponding direction, the pipe 75 is projected vertically upward. It will further be observed that this rising movement of the pipe 75 is induced by the counterweight 71 and that the reverse or downward movement is effected by the blocks 61 on the horizontally reciprocating bar 47 acting against the arms 64.

The upper end of each pipe 75 is projected upwardly into each passing can 15 as it is brought to rest thereabove at the corresponding station on the can track or rails 35 and each pipe 75 is provided with a nozzle or head 80 which sprays streams of washing solution or rinse water at high velocity against the inner surfaces of the pouring lips 20, neck 19, breast 18 and body 16 of the can as it rises into and descends from the inverted milk can. This washing solution or rinse water is supplied to each pipe 75 from an elbow 81 thereon which connects with a flexible hose 82. As best shown in Figs. 12 and 13, the casting 69 is provided with a washing solution or rinse water chamber which supplies washing solution or rinse water to the flexible hose 82 through a screw fitting 83. The chambers of the two castings 69 are connected with branches 84 of a washing solution or rinse water supply line 85 supplied with the washing solution or rinse water under pressure from the washing solution pump 86 shown in Fig. 4. The inlet 88 to this pump usually connects (not shown) with the bottom of the sump or tank 25 to recirculate the washing solution or rinse water and its outlet connects with the line 89 supplying the spray nozzles (not shown) which wash or rinse the exterior of the line of cans 15 passing through the washer.

In its descending movement the spray nozzle 80 of each spray pipe 75 is withdrawn into a casing 90 which, as best shown in Fig. 6, comprises a bottom wall 91 having a central hole 92 through which the pipe 75 moves vertically, side walls 93 each having an apertured lug 94 in which axially alined pivot pins 95 are journaled, a lip 96 projecting upwardly from one

wall 98 connecting the side walls 93, and an arcuate hood 99 concentric with the axis of the pivot pins 95 and connected by side arms 100 with the wall 101 opposite the wall 98 and connecting the side walls 93. The arms 100 space the arcuate hood 99 from the wall 101 so as to provide a passage 102 therebetween. The lip 96 and upper part of the arcuate hood 99 are of a width equal to the space between the two can rails 35 and are inserted therebetween and suitably welded thereto as indicated at 103, Figs. 5, 8 and 9, so that the casing 90 is permanently held in fixed position.

Each casing 90 is provided with a pivoted retainer 105 which, when disposed over the corresponding pipe 75 and nozzle prevents it from rising. As best shown in Fig. 7, this retainer comprises an arcuate latch 106 secured to one end of an arm 108, the opposite end of which is secured to a pair of arms 109, 110, the latter being arranged to straddle the side walls 93 of the casing 90 and being apertured, as indicated at 111, to pivot on the pins 95 carried by the casing 90. With the arms 109, 110 of the retainer so pivoted on the pins 95, the arcuate latch 106 and its supporting arm 108 are in position to be swung through the passage 102 with the arcuate latch 106 traversing the inner face of the arcuate hood 99. In the closed position of the retainer 105 the free end of its arcuate latch 106 is arranged under the lip 96 rising from the wall 98 of the casing and in this position it will be seen that the pipe 75 is incapable of rising from the casing 90, its nozzle bumping upwardly against the arcuate latch 106 and being held against further upward movement thereby.

The arm 109 of the retainer 105 is extended beyond its aperture 111 to provide an extension 113 which is adapted to engage a stop 114 formed integrally on the casing 90 as shown in Fig. 6, and thereby limit the opening movement of the latch 106 of the retainer. To the extremity of this extension 113 of the retainer arm 109 is pivoted a shipper rod 115 which projects downwardly therefrom through an ear 116 provided on one side of the parallelogram arm 73, as best shown in Figs. 1 and 3. The lower end of this shipper rod is preferably threaded to receive a pair of nuts 117 and a helical compression spring 118 is interposed between these nuts and the ear 116 so that on downward movement of the parallelogram linkage the retainer 105 is swung to its operative position. However, it will be noted that upward movement of this parallelogram linkage does not swing the retainer 105 to its inoperative position, the ear 116 merely riding along the shipper rod 115 and having no effect upon the retainer.

This retainer 105 is moved to its inoperative position by the passing can which operates a latch releasing the retainer so as to permit it to fall by gravity to its inopertive position. For this purpose, adjacent each of the rising spray pipes 75 and as best shown in Figs. 2, 4, 5, 9 and 10, a vertical pivot pin 120 is rotatably mounted in a bracket 121 secured to the outer side of one of the side rails 38. A trip lever 122 is fast to the upper end of this pivot pin 120 and a latch arm 123 is fast to the lower end thereof. A projection 124 from the hub of the latch arm 123 is connected by a horizontal helical tension spring 125 with a remote part of the rail 38 carrying the bracket 121, this spring biasing the free end of the trip lever 122 into the path of the pouring

lips 20 of the passing cans 15. The extremity of the latch arm, in the normal position of the trip lever 122 (full lines, Fig. 10) engages under a catch 126 formed on the outer extremity of the retainer 105. When the pouring lip of a passing can swings the trip lever 122 clockwise as viewed in Fig. 10, the latch arm 123 is moved from under the catch 126 on the retainer 105 whereby this retainer is permitted to fall by gravity and permit the pipe 75 and its nozzle 80 to emerge upwardly from its casing 90. At the time of such release of the retainer 105, the pipe 75 has been moved to a fully depressed condition by its parallelogram linkage and hence the retainer 105 is not impeded in falling by any upward pressure of the nozzle 80 against its arcuate latch 106. The catch 126 on the retainer 105 has a rounded face 128 adapted to engage a rounded face 129 on the latch arm 123 so as to insure re-engagement between this catch and latch arm.

Operation

In the operation of the can washer the inverted cans 15 are placed with their pouring lips 20 upon the supporting rails 35 at the inlet end of the can washer, this being at the right hand end as viewed in Figs. 1 through 3. The dog bar 40 is continuously being reciprocated lengthwise of these rails a distance somewhat greater than the spacing of the cans as shown by full and dotted lines in Figs. 1 and 2. The means for so reciprocating the dog bar 40 are not shown but this reciprocation is in timed relation to the reciprocation of the horizontal bar 47 (Fig. 1) through the connecting rod 45, the dog bar 40 and this bar 47 moving simultaneously in the same direction. Since the dog bar 40 is reciprocated a distance somewhat greater than the spacing of the milk cans shown in Figs. 1 and 2, on each retrograde movement of this dog bar the dogs 43 slide over the pouring lips 20 of the line of milk cans on the track or rail 35 and pass to the trailing sides thereof. On each forward movement of the dog bar 40 these dogs 43 engage the trailing edges of the pouring lips 20 of the line of milk cans and hence each milk can is shoved forwardly to the position previously occupied by the preceding milk can. The dog 43 at the inlet end of the can washer serves to engage the lip and feed into the can washer the first can of the line being fed to the can washer, and it will therefore be seen that a continuous procession of inverted cans is passed longitudinally through the can washer along the track or rail 35, each can being progressively brought to a succession of definite stations and each can being permitted to rest at each station while the dog bar 40 is going through its retrograde reciprocation.

The throw of the dog bar 40 is adjusted so that each can is brought to rest in axial alinement, first with the rising pipe 75 at the right hand side of Figs. 1 through 3, and thereafter with the rising pipe 75 shown generally at the center of these figures. During the final forward movement of the dog bar 40 to the left, as viewed in Figs. 1 and 3, in bringing the milk cans to these stations, the horizontal bar 47 is likewise approaching its extreme left hand position, this position of the parts being shown in Fig. 1, and this movement of the bar 47 being effected by the connecting rod 45. In this movement of the bar 47 to the left, as viewed in these figures, the stops 61 on this bar are in engagement with the rollers 63 and are moving the levers 64 clockwise as viewed in Figs. 1 and 3. This clockwise movement is imparted to each shaft 65 so as to lift its counterweight 71 and also so as to depress the parallelogram arm 73 which is also fast to this shaft, as best seen in Fig. 12. This downward movement of the parallelogram link 73 causes a downward movement of the corresponding rising pipe 75, this rising pipe being held in a vertical position by virtue of the parallelogram link 78 connected with its lower end and which, through its pivotal mounting, is maintained in parallelism with the parallelogram arm 73. The nozzle 80 at the upper end of each pipe 75 is thereby retracted downwardly to the full line position shown in Fig. 5 in which it is out of contact with the latch 106 of the retainer 105. As each can is brought to one or the other of these particular stations, its pouring lip 20 engages and moves the trip lever 122 from the full line to the dot-dash line position shown in Fig. 10. This lever is fast to the pin 120 which also carries the latch arm 123 and in consequence this movement is against the resistance of the helical return spring 125 and operates to swing the latching arm 123 out of engagement with the catch 126 on the retainer 105. This retainer is pivoted to the casing 90 for the nozzle 80 of the pipe 75 by the pins 95 and upon release of the catch 126 on this retainer by the latch arm 123 the retainer falls by gravity from the position shown in Fig. 5 to the position shown in Fig. 6, whereby the latch 106 on the retainer 105 falls downwardly out of the path of the nozzle 80 on the upper end of the rising pipe 75.

The dog bar 40 and the reciprocating bar 47 now commence their retrograde movement, this being to the right as viewed in Figs. 1 through 3. As the horizontal bar 47 so moves to the right, the arms 64 follow the blocks 61 thereon, this movement being provided by the counterweights 71 on the arms 70 fast to the shafts 65 to which these arms 64 are connected. As a result, this movement of the horizontal bar 47 to the right provides a counterclockwise movement of each shaft 65 through power derived from its counterweight 71 and this movement causes the parallelogram arm 73 and parallelogram link 78 to rise. This raises the pipe 75 carried by the outer end of each parallelogram arm and its parallelogram link, thereby to move the nozzle 80 upwardly out of the casing 90 and into the milk can arranged thereabove. Each pipe 75 is continuously supplied with washing solution or rinse water and hence as each nozzle 80 so rises into the milk can sprays of the solution or rinse water from the nozzle 80 are progressively brought against the pouring lip 20, neck 19, breast 18 and interior of the body 16 of the milk can.

When the parallelogram linkage reaches the position shown in Fig. 3, the movement of the horizontal reciprocating bar 47 to the right causes the blocks 61 to leave the rollers 63 and hence the nozzles 80 are held in their fully upwardly projected position during the continued movement of the horizontal reciprocating bar 47 to the right and during the initial part of its return movement to the left. During this return movement the block 61 on the horizontal reciprocating bar 47 re-engage the rollers 63 on the arms 64 so as to swing these arms clockwise as viewed in Figs. 1 and 3, and to elevate the counterweights 71 and depress the parallelogram arm 73 and parallelogram link 78. This retracts the nozzles 80 from the cans 15 and into the casings 90. During the last part of this downward move-

ment of the pipes 75, the ears 116 come into engagement with the springs 118 on the shipper rods 115, thereby to depress these shipper rods. The downward movement of each of these shipper rods effects a downward movement of the extension 113 of the arm 109 of the retainer 105. This causes the retainer 105 to swing counterclockwise about the pivot pins 95 so as to move the retainer from the position shown in Fig. 8 to the position shown in Fig. 5. In the position shown in Fig. 5 the latch 106 of the retainer 105 is in the path of the nozzle 80 on the pipe 75 and it will therefore be seen that this pipe is prevented from rising from the casing 90 but is retained therein. Each pipe 75 is still being supplied with spray liquid under pressure, this spray water being discharged into its casing 90 and returning, without washing effect upon the cans, to the sump 25 for recirculation by the spray water pump 86. This housing of the depressed spray heads prevents washing solution from being sprayed into the rinse water section of the washer and vice versa.

During the final part of the movement of the bar 47 to the left as viewed in Figs. 1 and 2, the dog bar 40 commences its forward movement to the left as viewed in these figures. Accordingly, the can 15 above each rising pipe 75 is moved along the track 35 out of alinement therewith, this also moving the can out of engagement with the trip lever 122 so that this trip lever is brought to the full line position shown in Fig. 10 under the influence of its return spring 125. This return spring also swings the latch arm 123 to the full line position shown in Fig. 10 in which it is disposed above the catch 126 on the retainer 105. Accordingly, this retainer is latched in the full line position shown in Fig. 5 until another can 15 moves into alinement with the pipe 75 and again actuates the trip lever 122 to release the latch arm 123 from engagement with the catch 126 as previously described.

From the foregoing it will be seen that the present invention provides a simple and rugged rising jet mechanism for container washers in which sliding parts, difficult to lubricate, are avoided and in which the jets are prevented from rising in the absence of a milk can thereover and in which the jets are adequately housed, when retracted, to prevent dilation of the wash solution by rinse water escaping from the retracted jets and vice versa, and more especially to prevent undesirable spraying of the wash solution or of the rinse water into adjacent can treatment spaces as would occur were the jets allowed to rise if no can were present over the rising jet.

I claim:

1. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a stationary support, a pair of parallel arms pivoted to said support, a pipe pivotally connected at the outer ends of said arms, in axial alinement with the mouth of the can at said station, said support, arms and pipe providing a parallelogram linkage, a nozzle at the end of said pipe adjacent said can, means for supplying a fluid under pressure to said pipe, and means actuated in timed relation with said intermittently operative conveyer and actuating said parallogram linkage to project and retract said nozzle into and out of such can so arrested at said station.

2. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of each can, comprising a stationary hollow support, a pair of parallel, generally horizontal arms pivoted to said support, a pipe pivotally connected at the outer ends of said arms in axial alinement with the mouth of the can at said station, said support, arms and pipe providing a vertically moving parallelogram linkage, a nozzle at the end of said pipe adjacent said can, means for supplying fluid under pressure to the interior of said hollow support, a flexible conduit approximately equal in length to and extending along said arms and providing communication between the interior of said hollow support and said pipe, and means actuated in timed relation with said intermittently operative conveyer and actuating said parallelogram linkage to project and retract said nozzle into and out of each can so arrested at said station.

3. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a stationary support, a pair of parallel arms pivoted to said support, a pipe pivotally connected at the outer ends of said arms in axial alinement with the mouth of the can at said station, said support, arms and pipe providing a parallelogram linkage, a nozzle at the end of said pipe adjacent said can, means for supplying a fluid under pressure to said pipe, means biasing said parallelogram linkage to project said pipe into the path of said cans, a latch restraining said parallelogram linkage from so projecting said pipe into the path of said cans, means actuated by each can brought to said station for releasing said latch, and means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe out of each can so arrested at said station and to reset said latch.

4. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a stationary support, a pair of parallel arms pivoted to said support, a pipe pivotally connected at the outer ends of said arms in axial alinement with the mouth of the can at said station, said support, arms and pipe providing a parallelogram linkage, a nozzle at the end of said pipe adjacent said can, means for supplying a fluid under pressure to said pipe, means arranged to bias said parallelogram linkage to project said pipe into the path of said cans, a retainer restraining said pipe from so projecting into the path of said cans and normally falling by gravity into an inoperative position, a latch actuated by each can brought to said station to release said retainer, and means actuated in timed relation with said intermittently operative conveyer and

arranged to retract said pipe out of each can so arrested at each station and to reset said latch.

5. In a can washer having a casing enclosing a canway and enclosing an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of each can, comprising a stationary support within said casing, a rock shaft journaled in said support, a parallelogram arm fast to said rock shaft, a pipe pivoted on the free end of said parallelogram arm in position to be projected into the can at said station, a parallelogram link pivotally connecting said pipe and support to provide, with said support, parallelogram arm and pipe, a parallelogram linkage, a discharge nozzle at the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, an arm fast to said rock shaft, a bar mounted for reciprocation on said casing, a stop on said bar and engaging said arm fast to said rock shaft to oscillate the same through motion derived from the reciprocation of said bar, and means arranged to reciprocate said bar in timed relation with said conveyer.

6. In a can washer having a casing enclosing a canway and enclosing an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of each can, comprising a stationary support within said casing, a rock shaft journaled in said support and projecting exteriorly of said casing, a parallelogram arm fast to said rock shaft, a pipe pivoted on the free end of said parallelogram arm in position to be projected into the can at said station, a parallelogram link pivotally connecting said pipe and support to provide, with said support, parallelogram arm and pipe, a parallelogram linkage, a discharge nozzle at the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means arranged to bias said parallelogram linkage to project said pipe into the path of said cans, a retainer restraining said pipe from so projecting into the path of said cans and normally held in an inoperative position, a latch actuated by each can brought to said station to release said retainer, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe out of each can so arrested at said station and means actuated by said parallelogram linkage for resetting said latch.

7. In a can washer having a casing enclosing a canway and enclosing an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of each can, comprising a stationary support within said casing, a rock shaft journaled in said support and projecting exteriorly of said casing, a parallelogram arm fast to said rock shaft, a pipe pivoted on the free end of said parallelogram arm in position to be projected into the can at said station, a parallelogram link pivotally connecting said pipe and support to provide, with said support, parallelogram arm and pipe, a parallelogram linkage, a discharge nozzle at the

end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means arranged to bias said parallelogram linkage to project said pipe into the path of said cans, a retainer restraining said pipe from so projecting into the path of said cans and normally held in an inoperative position, a latch actuated by each can brought to said station to release said retainer, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe out of each can so arrested at said station and spring means operatively connecting said parallelogram arm and latch and resetting said latch through motion derived from said parallelogram arm.

8. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a pipe arranged to enter each can at said station, a nozzle on the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means urging said pipe into the path of said cans, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe from said can at said station, a housing into which said nozzle is drawn when said pipe is retracted, a retainer pivoted on said housing and engaging said nozzle to prevent movement of said pipe into the path of said cans, and latch means actuated by each can brought to said station and arranged to render said retainer inoperative.

9. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a pipe arranged to enter each can at said station, a nozzle on the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means urging said pipe into the path of said cans, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe from said can at said station, a housing into which said nozzle is drawn when said pipe is retracted, a retainer pivoted on said housing and having a part moving into axial alinement with said pipe to engage said nozzle and prevent movement of said pipe into the path of said cans and normally held in an inoperative position, means actuated by said pipe retracting means and moving said retainer to an operative position, and latch means actuated by each can brought to said station and arranged to release said retainer.

10. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a pipe arranged to enter each can at said station, a nozzle on the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means urging said pipe into the path of said cans, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe from said can at said

station, a housing into which said nozzle is drawn when said pipe is retracted, a retainer pivoted on said housing and having a part moving into axial alinement with said pipe to engage said nozzle and prevent movement of said pipe into the path of said cans and normally falling by gravity to an inoperative position, latch means arranged to hold said retainer in an operative position and actuated by each can brought to said station to release said retainer, and spring means actuated by said pipe retracting means and moving said retainer to said operative position.

11. In a can washer having a canway and an intermittently operative conveyer arranged to move each of a succession of cans to and from a station along said canway at which station each can is arrested for a period of time, the combination therewith of means for washing the interior of said can, comprising a pipe arranged to enter each can at said station, a nozzle on the end of said pipe adjacent said can, means arranged to supply fluid under pressure to said pipe, means urging said pipe into the path of said cans, means actuated in timed relation with said intermittently operative conveyer and arranged to retract said pipe from said can at said station, a housing into which said nozzle is drawn when said pipe is retracted, a retainer having a pair of arms embracing and pivoted to said housing and having a part movable about the axis of its pivotal mounting and arranged to engage the extremity of said nozzle and prevent movement of said pipe into the path of said cans, said retainer being balanced to normally fall by gravity to an inoperative position, spring means connecting one of said retainer arms with said pipe retracting means and moving said retainer to an operative position through motion derived from said pipe retracting means, a catch on said retainer, a latch pivoted adjacent said retainer and movable into the path of said catch to support said retainer in its operative position, means yieldingly urging said latch into the path of said catch, and means actuated by each can brought to said station and arranged to move said latch to release said catch.

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