W. COBURN & C. W. DAVIS.

WASHING MACHINE.

APPLICATION FILED JAN. 26, 1914.

1,117,550.

Patented Nov. 17, 1914.

3 SHEETS—SHEET 1.

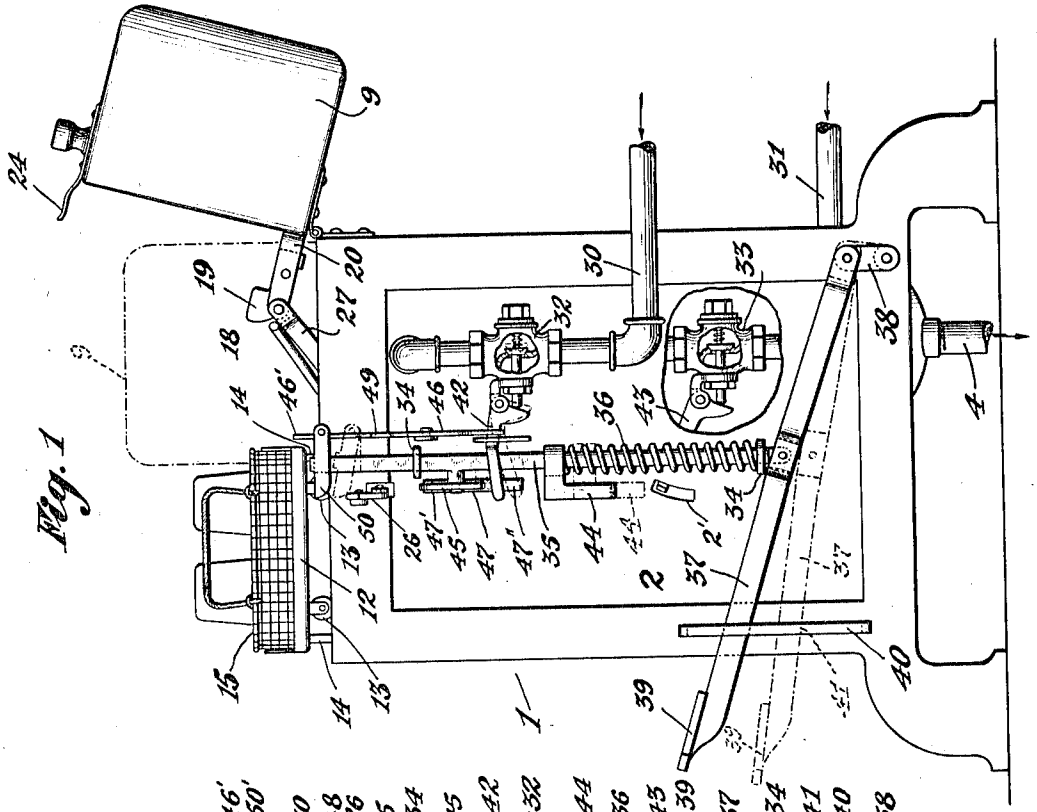


Fig. 1

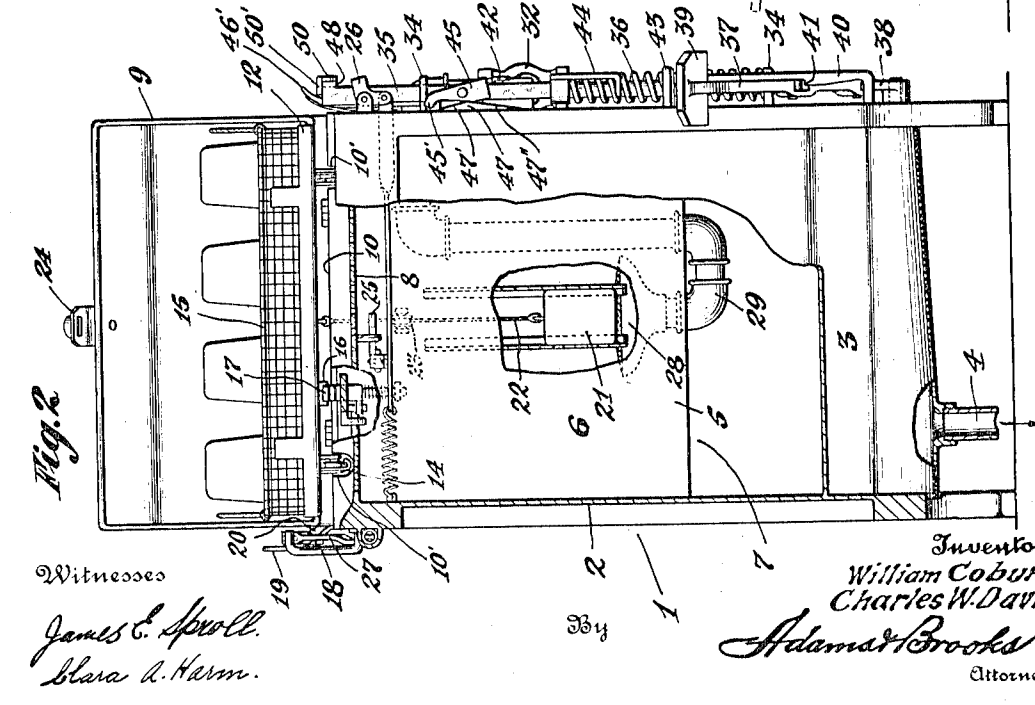


Fig. 2

Witnesses

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3 SHEETS—SHEET 2.

Fig. 3

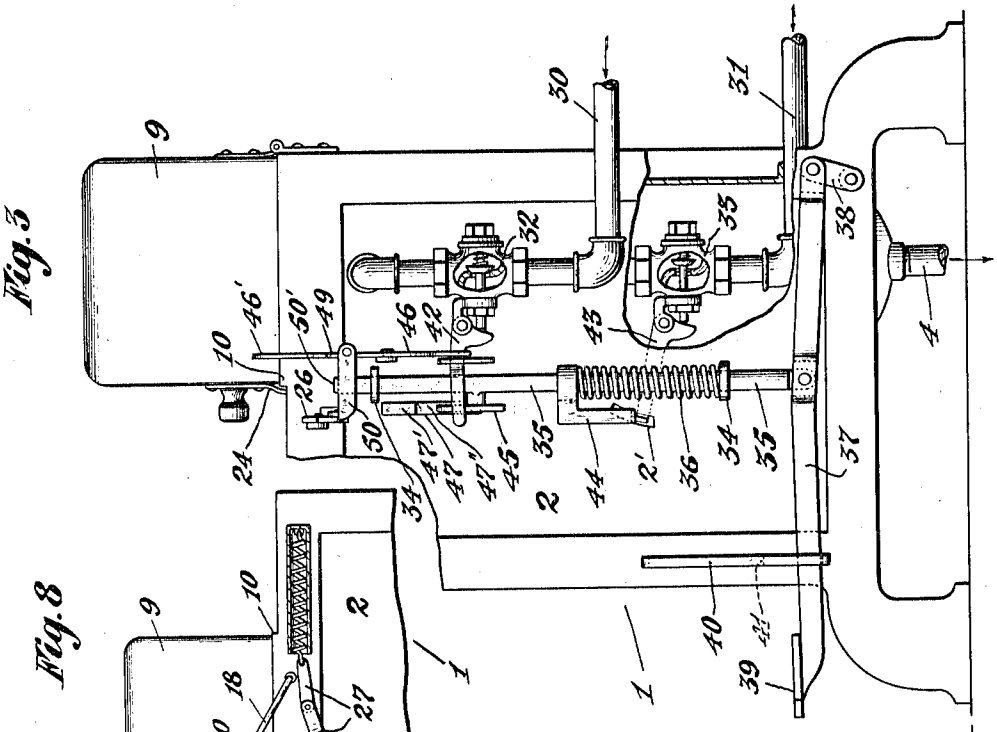
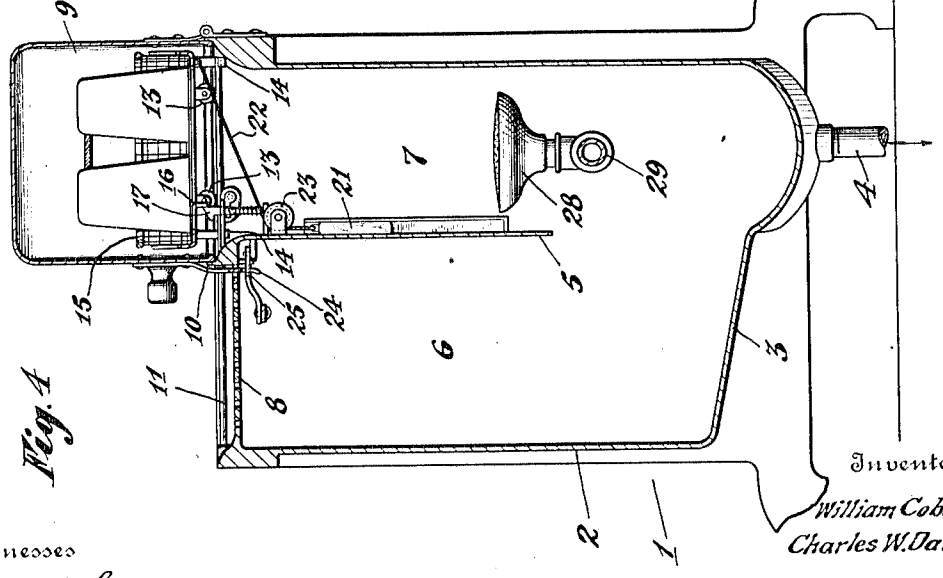


Fig. 8

Fig. 4



Witnesses

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3 SHEETS—SHEET 3.

Fig. 5

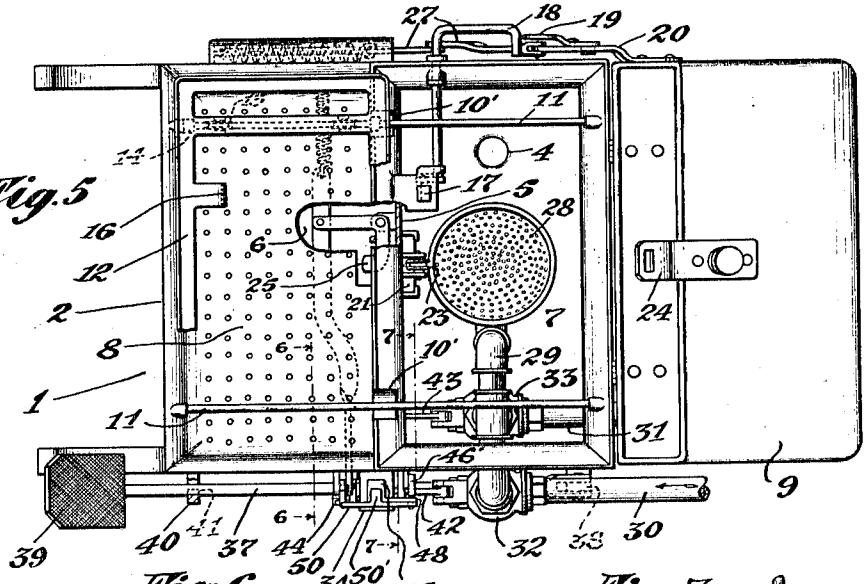
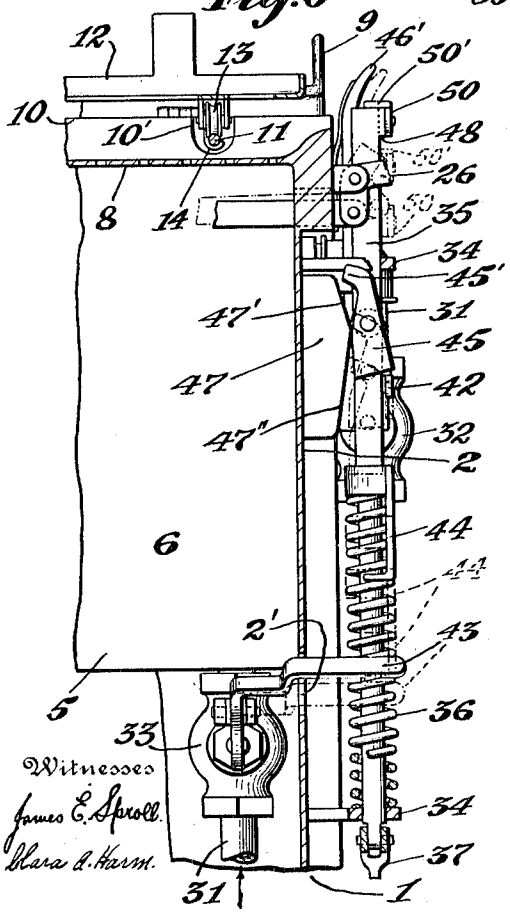
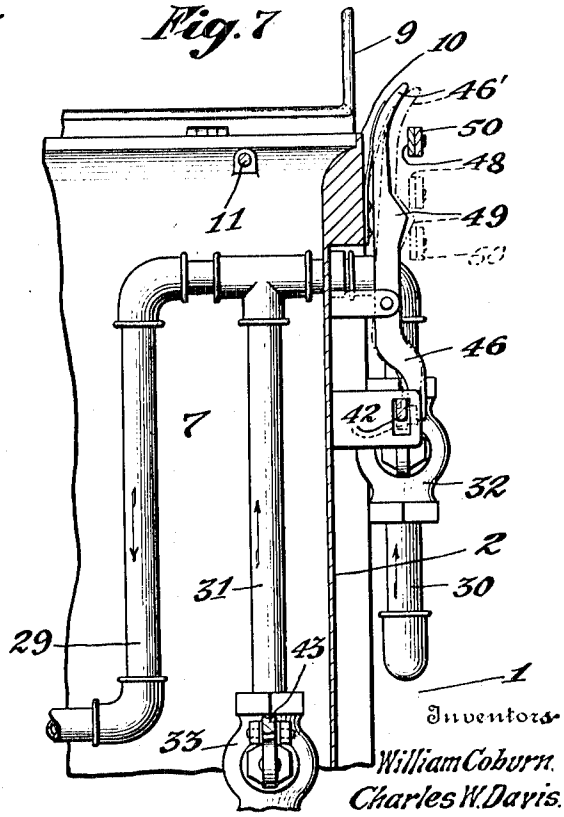


Fig. 6



Witnesses
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Fig. 7



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UNITED STATES PATENT OFFICE.

WILLIAM COBURN AND CHARLES W. DAVIS, OF SEATTLE, WASHINGTON, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO UNIVERSAL STERILIZER COMPANY, OF SEATTLE, WASHINGTON, A CORPORATION.

WASHING-MACHINE.

1,117,550. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed January 26, 1914. Serial No. 814,502.

To all whom it may concern:

Be it known that we, WILLIAM COBURN and CHARLES W. DAVIS, citizens of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

The primary aim of this invention resides in the provision of a structure or mechanism of the above character which will operate in an efficient manner and perform the desired functions expeditiously.

Other objects of equal importance are the mechanism for controlling the washing fluid, the supporting means for the glasses or articles to be washed, and the mechanisms for automatically removing the hood and the aforesaid supporting means from the washing chamber.

Further aims will appear hereinafter, and those features of construction, arrangements and combinations of parts on which protection is desired will be succinctly defined and set forth in the appended claims.

It may be preliminarily and briefly stated that in the preferred embodiment of the invention, illustrated in the accompanying drawings, there are employed a carriage, or support for the tumblers to be washed, a washing chamber into which the carriage is moved when supporting the tumblers, a nozzle or spray producer situated in the chamber for directing the washing fluid against the tumblers or articles, an arrangement of mechanisms controllable by a single means for successively sending sprays of different qualities from the nozzle and removing the carriage from the chamber with the washed articles.

For a full understanding of the present invention reference is to be had to the following specification and the accompanying drawings wherein—

Figure 1 is a side elevation of the washing machine with the carriage removed from the washing chamber and illustrated in dotted lines the hood closed and the operating lever partially depressed for opening the hot water pipe. Fig. 2 is a front view of the machine shown partly in elevation and partly in section. Fig. 3 is an elevation similar to Fig. 1 with portions broken away for the sake of clearness and the operating lever fully depressed to shut off the hot water and open the cold water pipe. Fig. 4 is a longitudinal vertical section of the construction. Fig. 5 is a top plan thereof. Figs. 6 and 7 are sectional views of fragmentary portions of the invention taken respectively along lines 6—6 and 7—7 of Fig. 5, and Fig. 8 is a view in elevation of the hood opening mechanism and the trip arm for releasing the carriage.

Referring in detail to the drawings with like characters of reference for designating like parts in the several views, 1 denotes the main frame structure supporting the washing chamber 2 which has a sloping bottom 3 to aid draining off the liquid through the drain pipe 4. The chamber is divided, by partition wall 5 extending a distance down from the top thereof, into forward and rear compartments 6, 7, the forward compartment being capped by a foraminous table or shelf 8 while the rear compartment opens into a hood or hollow wall section 9 hingedly mounted on the frame 1 and serving as a closure for said compartment.

The front edge of the hood rests on a ledge 10 extending upwardly from the adjacent edge of table 8 to effect a proper seating of the hood and said ledge is formed with vertical cut-outs 10′ through which pass the spaced track elements 11. The track is supported at a plane above the table and provides means for the carriage 12 to ride or move on, which latter is supported on the track by wheels 13 and retained from displacement by hook-shaped members 14 terminating beneath the track to engage the latter on movement of the carriage or car therefrom.

The carriage is provided with a basket 15, preferably removable, for carrying the tumblers or glasses to be washed and has a depending lug 16 which, when the carriage is in compartment 7, engages a spring actuated catch 17 which is vertically retracted by its trip arm 18 being engaged by dog 19 pivoted to a downwardly extending arm 20 fixed on an end wall of the hood. The dog is pivoted to afford a yielding action on closing the hood whereby the trip arm will remain undisturbed. A weight 21, suitably guided on partition wall 5, is connected to the rear of the carriage by a flexible mem-

ber 22, after taking over guide 23, whereby, on the catch or lock 17 releasing the carriage, the latter is automatically moved along the track from the compartment 7 to the table 8.

A hasp or apertured tongue 24 of the hood passes through an opening in the table, on closing the hood, and is engaged by a latch 25 which is connected to a trip bell-crank lever 26 mounted exteriorly of the main frame whereby on tripping it the hood may be automatically opened through a system of spring actuated links 27 connected to fixed arm 20.

An upwardly facing spray nozzle 28 is disposed in compartment 7 above the lower edge of wall 5 for directing the washing fluid upwardly against the tumblers, said nozzle being connected by pipe or conduit 29 to the hot and cold water pipes 30 and 31, respectively, which are each provided with a valve or cock 32, 33.

Mounted in guides 34 of the main frame for vertical sliding, is an actuator 35 normally held in its uppermost position by spring 36 seating on the lower guide 34 and operable against the tendency of the spring by a lever 37, preferably of the foot type, pivotally supported on the frame by link 38 and projecting forwardly in front of the machine. The forward end of the lever terminates in a pedal 39 and is guided by a strap 40 of the main frame, said strap being provided with a stop 41 for engaging the lever during depression of the latter, as shown in dotted lines in Fig. 1. Lateral movement of the lever will free it of the stop for further depression.

The valves or cut-offs are provided with bell-crank operators 42, 43 pivoted for opening the valves against the action of the valve springs and having the longer arms projecting in proximity to the actuator slide. The longer arm of bell-crank 43 operates through slot 2′ of the chamber and is engaged by lug 44 of actuator 35 subsequent to the lever 37 passing the stop 41, on further depression thereof. Prior to the lever engaging the stop 41 the longer arm of crank 42 is engaged by a pawl 45, carried on the actuator slide, to open the hot water valve. A spring actuated, pivoted catch 46, of the main frame engages over the longer arm of bell-crank 42, when depressed to open the valve, to maintain the latter open independently of the pawl 45 and thereby permitting of the slide returning to normal position. Should it be desired to close the valve without manipulating the slide, which latter operation necessitates the opening of the cold water pipe in priority, the catch 46 may be moved to release the bell-crank by a handle extension 46′.

Subsequent to the catch or lock engaging the bell-crank 42, the pawl 45 is freed from the latter, to permit of the actuator 35 being operated to perform its further functions, by a rearward extension 45′ riding on the upper face 47′ of a double cam 47 fixed on the main frame. On upward movement, the pawl is set for the succeeding operation by the rear face thereof engaging the lower face 47″ of the fixed cam.

A dog 48 fixed on the upper end portion of the actuator rides the cam 49 of the catch 46 for releasing the bell-crank to effect a closing of the hot water conduit prior to opening the cold water pipe by dog 44. Dog 48 serves as a support for a pivoted dog 50 adapted to yield in passing downwardly by trip 26 and formed with a lug 50′ to engage the actuator slide for maintaining the dog rigid on upward movement of the slide to effect a rocking of said trip to release the hood.

The operation, although obvious from the foregoing, will be briefly set forth. The glasses or tumblers being positioned in the basket on the carriage is moved from table 8 to the compartment 7 of the washing chamber where the latch 17 locks it from movement by the advancing means 21. The hood is then closed and the lever 37 depressed until limited by stop 41. The lever thus far has opened the hot water which washes and sterilizes the glasses. For obvious reasons this spray may be maintained by lock 46, which has engaged over the bell-crank 42 on the latter having been moved by the pawl 45, until released either manually or by the actuator. The operating or controlling lever is further depressed to successively bring the dogs 48 and 44 to a position to perform their designated functions namely, closing valve 32 and opening valve 33. The cold water spray rinses and cools the glasses for immediate use. The lever is then released and the actuator, aided by spring 36, returns to its normal position which in so doing, permits valve 33 to close and through dog 50 releases the hood for opening by the spring actuated connection 27. When the hood is practically opened, dog 19 trips arm 18 to release the carriage which is then advanced over table 8 by the weight 21. It will be noted that the remaining hot water in the pipe 29, after closing valve 32, gradually attemperates the spray against the glasses on opening valve 33 and vice versa. It is, of course, obvious that other washing fluids may be utilized.

The foregoing detailed description has been given for clearness of understanding only, and no undue limitation should be understood therefrom. Hence, the appended claims should be construed as broadly as permissible in view of the prior art.

Having thus described our invention, what we claim as new, and desire to secure

by Letters Patent of the United States of America, is:—

1. In a machine of the character described, an inclosing means, liquid directing means, means for supporting articles in said inclosing means in the path of delivery of said directing means, and means under control of said inclosing means for moving said supporting means from the path of delivery of said liquid directing means.

2. In a machine of the character described, liquid directing means, a carriage supported for movement in the path of delivery of the directing means to have its contents subjected to the fluid delivered therefor, means for locking the carriage in the path of delivery of the directing means for action thereon by liquid from the latter, and means for moving the carriage.

3. In a machine of the character described, a washing chamber having a closure, liquid directing means therein, a carriage mounted for movement over the directing means, means for locking the carriage, and means for successively opening the chamber closure and releasing carriage.

4. In a machine of the character described, a washing chamber having a closure, liquid directing means therein, a carriage mounted for movement over the directing means, means for locking the carriage, means operable by movement of the closure for releasing the carriage, and means for opening the closure of said chamber.

5. In a machine of the character described, a washing chamber having a closure, liquid directing means therein, means for supporting articles in the chamber for action thereon by the liquid from the directing means, a conduit connected to the directing means, a valve in the conduit, means for locking the chamber closure, and means for operating the valve and releasing the closure.

6. In a machine of the character described, a washing chamber having a closure liquid directing means therein, means for supporting articles in the chamber for action thereon by the liquid from the directing means, a conduit connected to the directing means, a valve in the conduit, means for locking the chamber closure, an actuator for operating the valve, and means operable by the actuator subsequent to operating the valve for releasing the closure.

7. In a machine of the character described, a washing chamber, liquid directing means, a carriage mounted for movement into the chamber, means to lock the carriage in the chamber, means to move the carriage from the chamber when released, valve means for the liquid directing means, and means to successively operate the valve means and release the carriage.

8. In a machine of the character described, a washing chamber, liquid directing means, a carriage mounted for movement into the chamber in the path of delivery of the directing means, means to lock the carriage in the chamber, means to move the carriage from the chamber when released, valve means for the liquid directing means, actuator means to operate the valve means, and means to release the carriage subsequent to the operation of the valve means.

9. In a machine of the character described, a washing chamber having a closure, liquid directing means, a carriage mounted for movement into the chamber, means to lock the carriage in the chamber in the path of delivery of the directing means, means locking the chamber closure in operative position, and means controlling the supply of liquid to the directing means and releasing the closure and carriage in succession.

10. In a machine of the character described, a washing chamber having a closure, liquid directing means, a carriage mounted for movement into the chamber in the path of delivery of the directing means, means to lock the carriage in the chamber, means locking the chamber closure in operative position, valve means for controlling the flow of liquid from the directing means, and a common means for successively operating the valve means, and releasing the closure and carriage.

11. In a machine of the character described, a washing chamber having a closure, liquid directing means, a carriage mounted for movement into the chamber in the path of delivery of the directing means, means to lock the carriage in the chamber, means locking the chamber closure in operative position, conduits connected to the directing means, valves in the conduits, an actuator to successively operate the valves, and means settable by the actuator to release the closure and carriage.

12. In a machine of the character described, a washing chamber having a closure, liquid directing means, a carriage mounted for movement into the chamber in the path of delivery of the directing means, means to lock the carriage in the chamber, means locking the chamber closure in operative position, conduits connected to the directing means, valves in the conduits, an actuator to successively operate the valves, and means settable by the actuator subsequent to operating the first valve to release the closure and carriage.

13. In a machine of the character described, a washing chamber having a closure, liquid directing means, a carriage mounted for movement into the chamber in the path of delivery of the directing means, means to lock the carriage in the chamber, means locking the chamber closure in operative position, conduits connected to the directing means, valves in the conduits, an actuator to

successively operate each valve and release the closure and carriage.

14. In a machine of the character described, a washing chamber, liquid directing means therein, a carriage mounted for movement into the chamber, means to lock the carriage in the chamber, a closure for the chamber, means locking the closure in operative position, conduits connected to the directing means, valves in the conduits, a vertically sliding actuator, means on the actuator for successively operating the valves on movement in one direction, and means operable by the actuator on reverse movement to release the closure and carriage.

15. In a machine of the character described, a washing chamber, liquid directing means therein, a closure for the chamber, means for locking the closure, a conduit connected to the directing means, a valve for the conduit, a vertically sliding actuator, means on the latter to open the valve on downward movement of the actuator, lock means to retain the valve opened and movable by the actuator to release the valve on continued movement of the actuator, and means on the actuator to release the closure on return movement of the former.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM COBURN.
CHARLES W. DAVIS.

Witnesses:
CLARA A. HARM,
JAMES M. PALMER.