May 28, 1929. W. T. SEPTANT 1,715,100

TABLEWARE WASHER

Filed Oct. 13, 1926 4 Sheets-Sheet 1

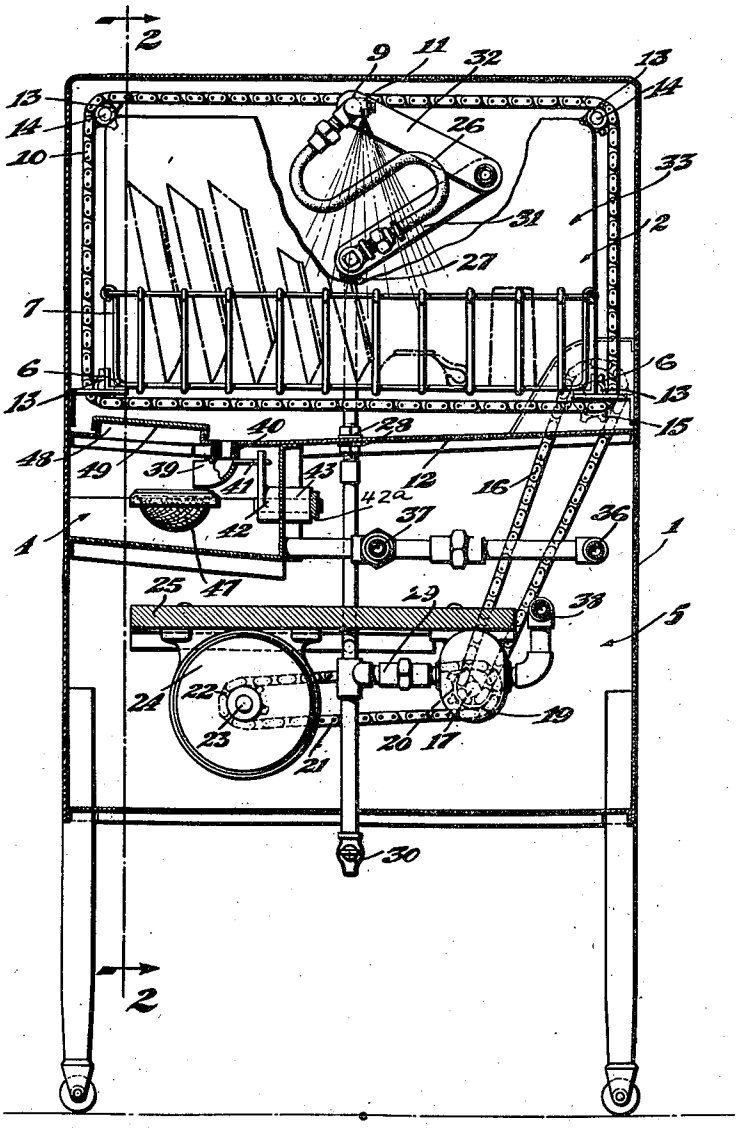


Fig. 1

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TABLEWARE WASHER

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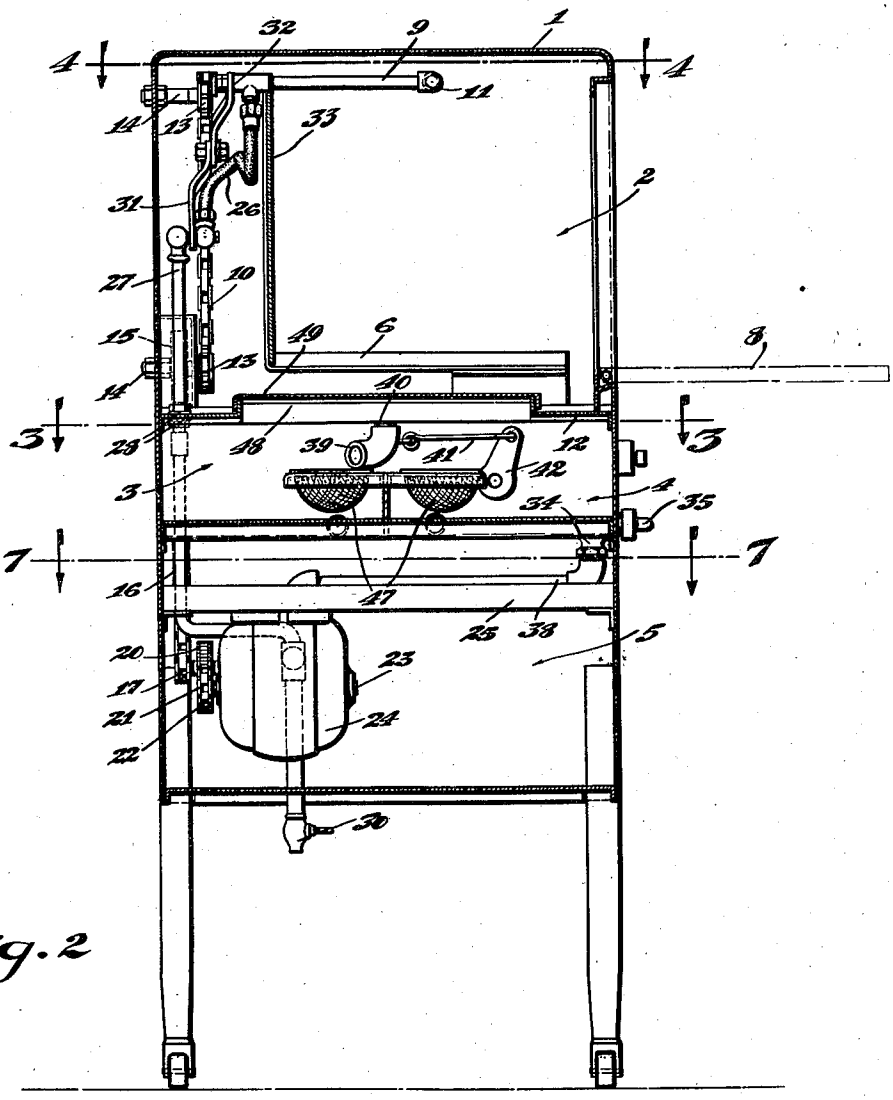


Fig. 2

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TABLEWARE WASHER

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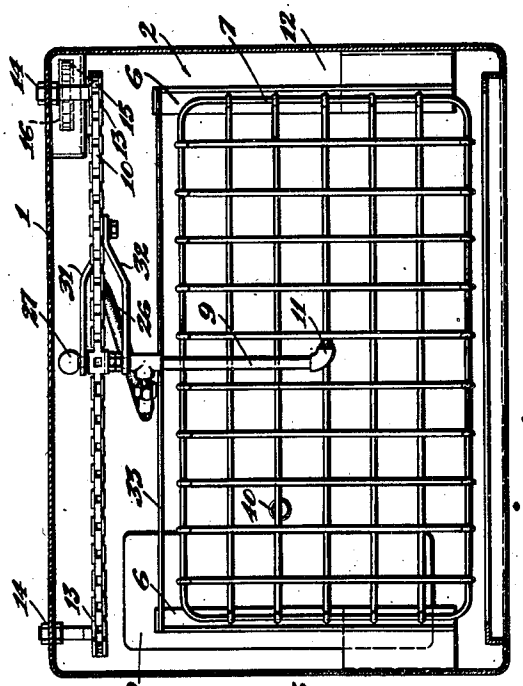


Fig. 4

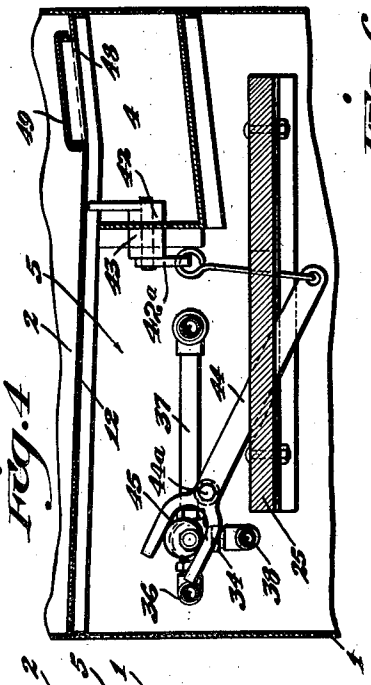


Fig. 6

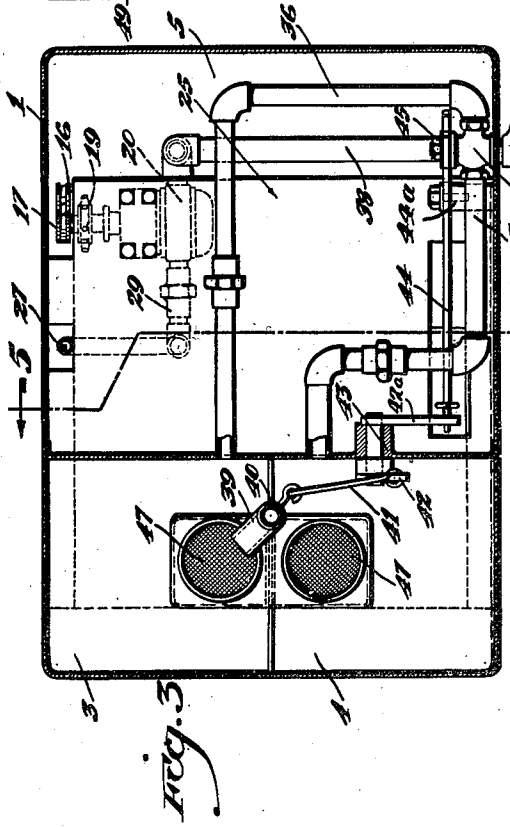


Fig. 3

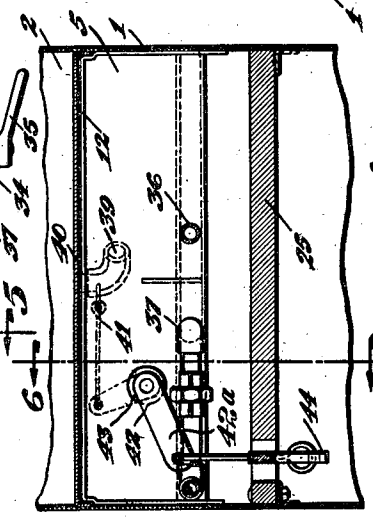


Fig. 5

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TABLEWARE WASHER

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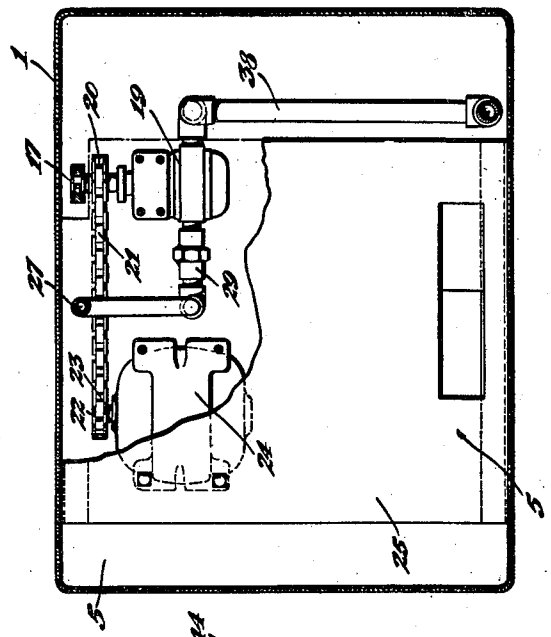


Fig. 7

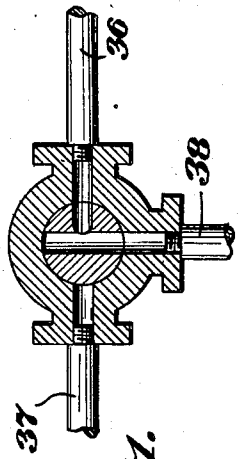


Fig. 11.

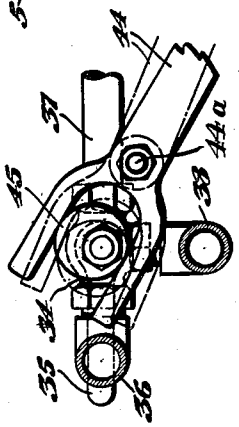


Fig. 8

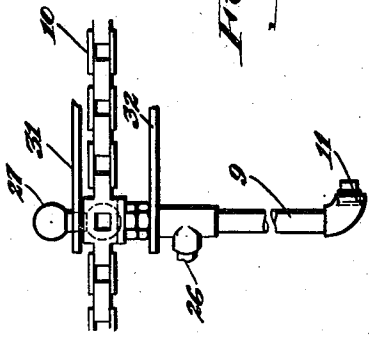


Fig. 9



Fig. 10

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Patented May 28, 1929. 1,715,100

UNITED STATES PATENT OFFICE.

WILLIAM T. SEPTANT, OF NORWOOD, OHIO.

TABLEWARE WASHER.

Application filed October 13, 1926. Serial No. 141,398.

The invention relates to improvements in dish or table ware washing apparatus and particularly to a type in which the cleansing is effected by subjecting the ware to a spray of cleansing or rinsing fluid under pressure.

An object of the invention is to provide a traveling sprayer conveyed in a cycle about a net form of tray or holder in which the ware is placed or stacked to spray or shower the ware with either a cleansing or rinsing fluid delivered under pressure progressively in downward, upward and lateral varying angular directions to enable all sides or surfaces of the ware to be reached without agitating or moving the ware.

Another object is to provide a dish or table ware washer as a portable cabinet with a washer compartment and a plurality of different fluid supply reservoirs beneath the compartment, the compartment and reservoirs being under drainage connection for conveying the fluid back to the reservoir from which the supply was taken, and a motor driven pump adapted to be thrown in connection with a selected reservoir for delivering the fluid therefrom under pressure to a traveling sprayer in the washer compartment, the fluid from the reservoirs to the pump and the drainage from the washer to the reservoirs being under a single control for alternately utilizing the fluid from the reservoirs independently.

Further objects and features of the invention relate to details of construction of the mechanism for simultaneously controlling a fluid supply from several reservoirs to a pump and a drainage connection back to the reservoir adapting the supply to be taken alternately from the reservoirs by the manipulation of a single control lever.

Other advantages, features and details of construction in the embodiment of the invention selected for illustration will be more fully set forth in the description of the accompanying drawings in which:

Figure 1 is a central vertical section through the dish washing mechanism.

Figure 2 is a section on line 2—2 Figure 1.

Figure 3 is a section on line 3—3 Figure 2.

Figure 4 is a section on line 4—4 Figure 2.

Figure 5 is a section on line 5—5 Figure 3.

Figure 6 is a section on line 6—6 Figure 5.

Figure 7 is a section on line 7—7 Figure 2.

Figure 8 is an enlarged view of a plural way valve for controlling the various water or solution supplies and a portion of the actuating mechanism therefor.

Figure 9 is a detail top plan view of a sprayer pipe and its connection with a conveyed chain.

Figure 10 is a detail view of the sprayer nozzle.

Figure 11 is a central vertical section through a commercial two-way valve or cock for connecting the reservoirs to the pump, adapting the several reservoirs to be independently or simultaneously connected with the pump.

The apparatus herein disclosed is primarily as a portable dish washer, particularly for domestic service, and therefore, as a unit includes a plurality of liquid holding reservoirs, one for a washing or detergent fluid, and a second for a rinsing fluid, which as used is pumped from the reservoir to the traveling sprayer within the washer compartment, and from which it drains back into the reservoir, provision being made for alternately controlling the discharge from the reservoirs or drain thereto.

Referring to the drawings, 1 indicates a portable cabinet preferably constructed of sheet metal and interiorly subdivided to provide a washer compartment 2, reservoirs 3, 4, beneath the washer compartment, and a pump compartment 5. The washer compartment upon its opposite end walls and toward the base thereof is provided with ledges 6—6 of angle iron construction for supporting a dish-holding wire tray 7, the tray being removed from the washer compartment through an opening in the front wall of the cabinet which is provided with a door 8 swinging downwardly as illustrated in dot and dash line, Figure 2. The ledges 6—6 as shown in Figure 4, rearwardly are spaced from the end walls to provide a passage or clearance for the traveling sprayer pipe 9 conveyed in a rectangular course or path completely about the dish-holding tray 7 by an endless carrier or sprocket chain 10. The sprayer pipe extends horizontally with its sprayer nozzle 11 at the forward end of the pipe 9 disposed approximately medially of the tray. The dishes and chinaware are stacked and positioned within the tray so that their surfaces can be reached from all sides from the sprayer nozzle in its travel about the tray. The dishes thus remain stationary during the washing operation so that

there is no cause for them to become broken of chipped.

The spraying nozzle is of a form to give a wide spread to the fluid and as it passes about the tray is always directing the fluid against the dishes in various lines and angles downwardly and upwardly, so that a complete washing and rinsing is obtained in a considerable less time than would be possible in moving or agitating the dishes in the fluid. The dishes are preferably stacked or set at an angle while the cups, deeper vessels, or glass ware, are placed in an upset position so that the fluid will be drained therefrom onto the inclined base 12 of the washer compartment. The nozzle travels at an appropriate rate and the fluid is projected at a high velocity, subjecting the ware in the tray to a heavy shower of fluid which completely cleanses the same. The fluid after striking the ware drains therefrom upon the base of the washer compartment and into the proper reservoir 3 or 4. The sprocket chain or endless carrier 10 is engaged upon the sprocket wheel idlers 13, four in number being provided so that the chain will move in a rectangular path and each sprocket wheel is respectively journalled upon a stud 14 fixed to the rear wall of the cabinet or washer compartment. The chain is transmitted by a sprocket wheel 15 connecting with a sprocket chain 16 leading into the motor compartment and connecting about a sprocket wheel 17 upon the driving shaft of the pump 19. This pump shaft is driven by a sprocket wheel 20 connecting with a chain 21 which in turn connects with a sprocket wheel 22 fixed on the shaft 23 of an electric motor 24 on a platform 25 supported in the motor compartment 5.

The sprayer pipe 9 is suitably secured to the sprocket chain and connects through flexible tubing 26 and universal coupling, with a stationary supply pipe 27.

The supply pipe 27 extends through the base 12 of the washer compartment into the pump compartment and is rigidly fixed thereto by the lock washers 28—28 disposed at opposite sides of the base. The portion of the supply pipe within the pump compartment has an L extension 29 connecting with the pump 19 and a drain valve 30 at its lower end. A pair of pivotally connected links 31, 32, are respectively pivotally connected to the upper end of the supply pipe 27 and the sprayer pipe 9 and serves to sustain the sprayer pipe in a horizontal plane, the links moving with the sprocket chain about the universal coupling connecting the tube 26 with the supply pipe 27. The tube 26 and sprocket chain 10 are interposed between the rear cabinet wall and partition plate 33 in the washer compartment, the partition plate being fixed to the ledges 6—6.

The fluid reservoirs 3, 4, connect with the pump, each through a plural way valve 34 controlled by a hand lever 35. Reservoir 3 connecting with the valve through a pipe 36 and reservoir 4 with the valve through a pipe 37. The valve alternately connects said reservoirs with the pump through a pipe 38 connecting the pump and valve 34. The fluid after it has been sprayed over the dishes, drains through a spout 39 into either of the reservoirs 3, 4, depending upon its setting, the spout being swivelled upon a nipple 40 engaged through and fixed to the base 12. The spout 39 is actuated in conjunction with the valve handle 35 by means of a link 41 connecting the spout with a crank lever 42 swivelled in the bearing 43 of the wall of the reservoir 4, and the crank lever 42 has a second arm 42^a which connects with a link or fork 44 pivoted at 44^a to the front wall of the casing. The fork end of the connecting link 44 engages an eccentric 45 fixed upon the valve stem of the plural way valve 34. Thus, with the shifting of the valve, the spout is appropriately swivelled for draining into the tank from which the fluid is withdrawn. Each of the reservoirs is provided with a strainer 47 beneath the spout for collecting any solid substances or the like which may be conveyed from the washer compartment through the spout. These strainers are arranged to be removable, access to them being had through the opening 48 in the base 12, the base being flanged upwardly about the opening for receiving the cover 49.

In the operation of the washer after the tray 7 containing the dishes or ware has been placed in the washer compartment 2, the valve handle 35 is thrown in an appropriate direction for connecting the pump with either reservoir 3 or 4 which contains the cleansing fluid. This action simultaneously moves the spout 39 so as to drain the fluid from the washing compartment into the reservoir from which the fluid is taken by the pump. Upon starting the pump the cleansing fluid from the reservoir 3 is delivered to the sprayer nozzle 11 from which it discharges in a spray upon the dishes. The carrier or sprocket chain 10 carrying the nozzle 11, being in transmission connection with the pump, is, thus, thrown into operation simultaneously with the pump for moving the nozzle at an appropriate rate about the tray or dishes. The sprayer nozzle in traveling about the tray directs the spray first in one direction, say downwardly from above the tray, against the dishes or articles in the tray and then follows in an opposite direction upwardly from beneath the tray so that practically all surfaces of the dishes are reached, it being recognized that the dishes are suitably stacked in the tray so that a considerable area of each dish can be reached by the sprayer. The placing of the dishes, of course, is under the discretion of the operator so as to produce the most efficient result for the kind and condition of ware washed, and like-

wise, the period for which the different sprays are run. After the ware has been subjected for the necessary period to the spray of the cleansing fluid, the handle 35 is thrown to a reverse position which cuts off the cleansing fluid supply to the pump and puts in the rinsing fluid with the sprayer continuing in its travel. The control of the handle 35 likewise controls the spout 39 so that in shifting from the cleansing fluid supply to the rinsing fluid supply the spout is thrown from said reservoir 3 to reservoir 4 so that the rinsing water is recovered or drained back into the reservoir for replenishing the supply to the pump. If necessary, a second cleansing operation and rinsing operation can be had, that is, the change from one fluid to another can be made at any time preferred by the operator.

Having described my invention, I claim:

1. In a dish washing machine, a casing, a dish-holding tray removably supported within said casing, a fluid sprayer traveling in a rectangular path about said dish-holding tray, and an endless carrier within said casing for conveying said sprayer about the tray.

2. In a dish washing machine, a casing, a reticulated dish-holding tray removably supported within said casing, a sprayer pipe horizontally disposed and having a spray nozzle at one end to extend medially of the said tray and an endless chain carrier for conveying said sprayer about said tray.

3. In a dish washing machine, a casing, a wire mesh dish holder within the casing supported to permit a sprayer to be conveyed in a cycle about the holder, a sprayer traveling in a rectangular path about said holder, and an endless carrier for conveying said sprayer about said tray for directing a spray of cleansing or rinsing fluid progressive in downward, upward and lateral directions and angles against the dishes.

4. In a dish washing machine, a cabinet having a washer compartment with a base for draining the washing fluid to reservoirs beneath the washer compartment for re-use, a dish holding tray removably supported within said compartment and spaced from the opposite end walls thereof to permit a horizontally disposed sprayer tube to be conveyed about said tray, an endless carrier movably sustained upon the rear wall of said compartment for conveying the sprayer tube in a horizontal position about said tray, a sprayer tube fixed to said carrier and extending horizontally therefrom, a stationary fluid supply conduit extending into said compartment having a flexible connection with said sprayer tube, and link mechanism pivotally connected to a stationary support at one end and to said sprayer tube at an opposite end.

5. In a dish washing machine, a cabinet having a washer compartment with a base for draining the washing fluid to reservoirs beneath the washer compartment for re-use, a dish holding tray removably supported within said compartment and spaced from the opposite end walls thereof to permit a horizontally disposed sprayer tube to be conveyed about said tray, an endless carrier movably sustained within said compartment for conveying the sprayer tube in a horizontal position about said tray, a sprayer tube fixed to said carrier and extending horizontally therefrom, and a stationary fluid supply conduit extending into said compartment having a flexible connection with said sprayer tube.

6. In a dish washing machine, a cabinet having a washer compartment with a base for draining the washing fluid to reservoirs beneath the washer compartment for re-use, a dish holding tray removably supported within said compartment and spaced from the opposite end walls thereof to permit a horizontally disposed sprayer tube to be conveyed about said tray, an endless carrier movably sustained within said compartment for conveying the sprayer tube in a horizontal position about said tray, a sprayer tube fixed to said carrier, extending horizontally therefrom and discharging the fluid medially of the tray, a stationary fluid supply conduit extending into said compartment having a flexible connection with said sprayer tube, and link mechanism pivotally connected to said supply conduit at one end and to said sprayer tube at an opposite end.

In witness whereof, I hereunto subscribe my name.

WILLIAM T. SEPTANT.