

Dec. 19, 1933.

N. S. HILLYARD

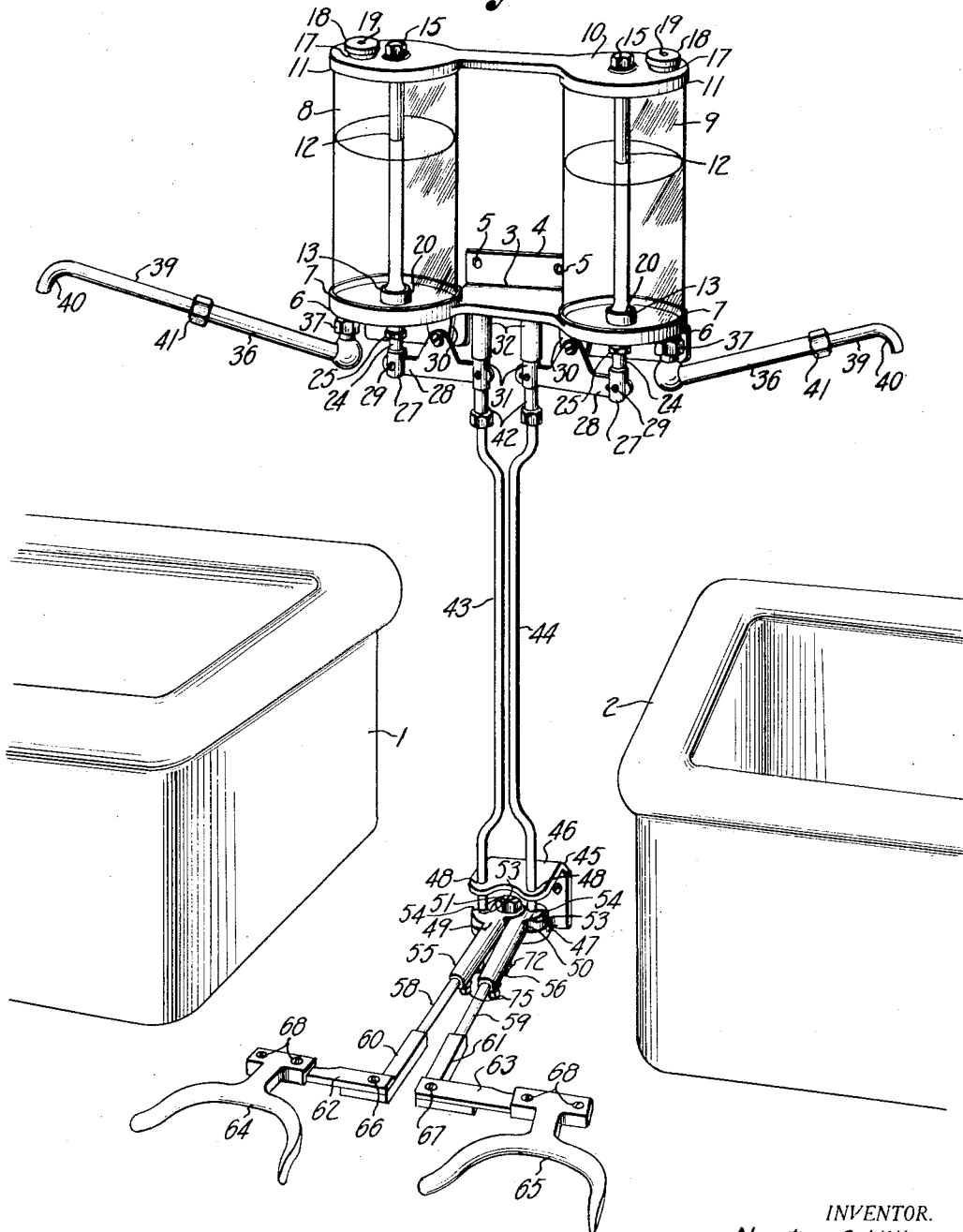
1,939,980

LIQUID DISPENSER

Filed Feb. 26, 1932

2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

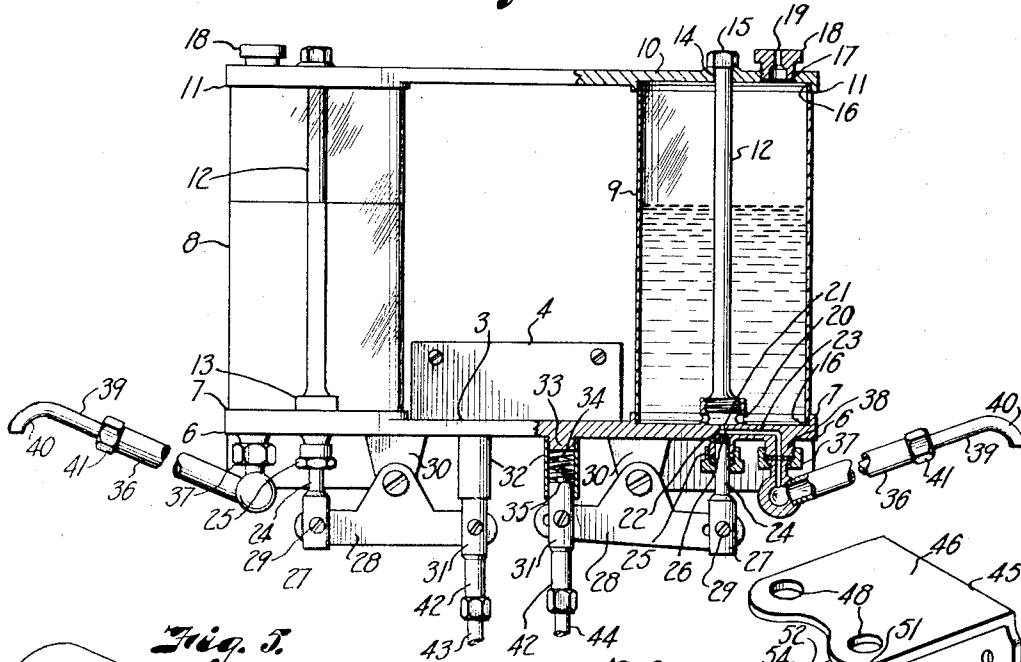


Fig. 3.

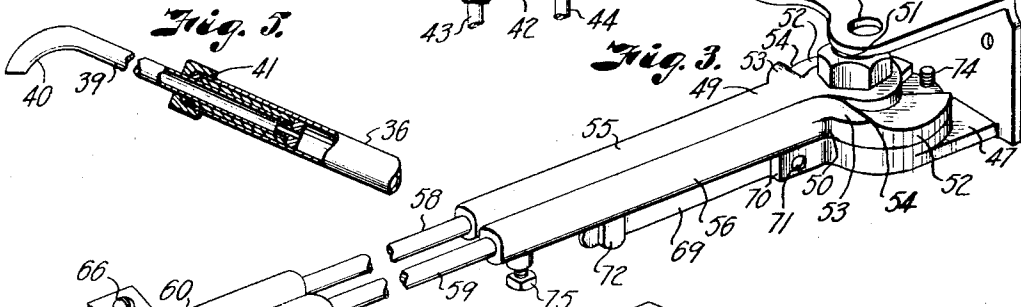


Fig. 3.

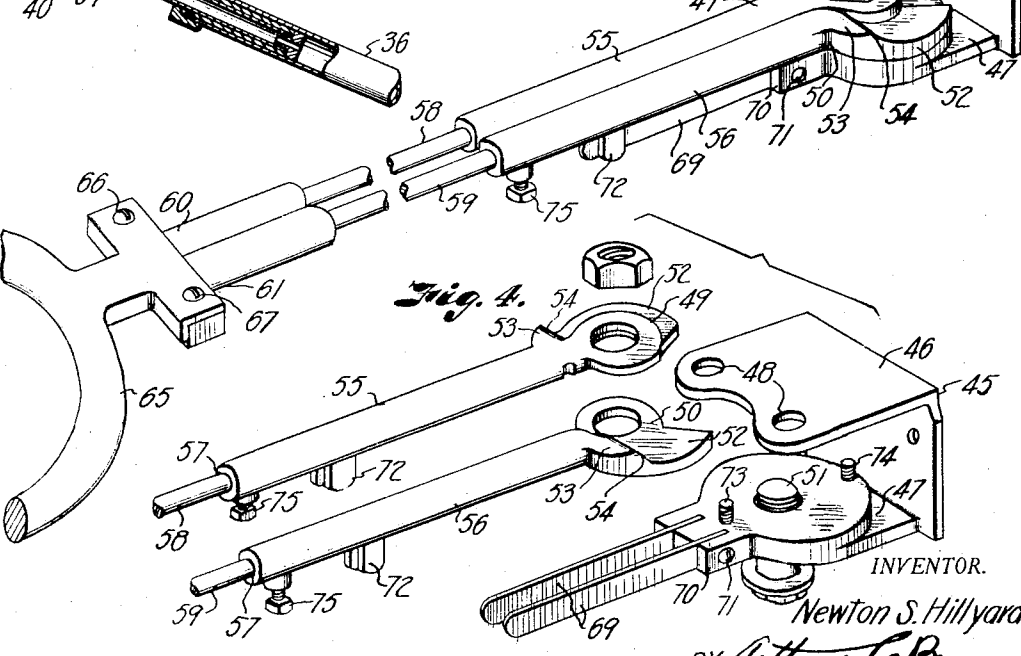


Fig. 4.

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LIQUID DISPENSER

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Application February 26, 1932. Serial No. 595,313

16 Claims. (Cl. 221-94)

This invention relates to liquid dispensers, and more particularly to those of that character for use in surgical washrooms for dispensing liquid soap, alcohol and similar liquids, and has for its principal object to provide a device wherein the dispensing operation is accomplished by movement of the knee of the operator in order to eliminate the usual foot levers and pedestals from the washroom floor.

It is also an important object of the invention to provide a double container whereby liquid may be dispensed from either container upon operation of a single lever, or the lever may be arranged to provide a lever individual to the respective containers whereby they may serve two adjacent wash-basins.

Another important object of the invention is to provide an adjustable swinging spout for the containers so that the liquid may be dispensed in directions to suit the convenience of the user.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a liquid dispenser mounted on the wall between two surgical wash-basins and constructed in accordance with my invention, the actuating levers being arranged to dispense soap individually from the respective containers.

Fig. 2 is an enlarged view of the liquid containers, one of which is shown in section to better illustrate the dispensing valve and valve-operating mechanism therefor.

Fig. 3 is an enlarged perspective view of the actuating levers connected to operate as a single unit to dispense from either one of the containers.

Fig. 4 is a perspective view of the rear ends of the actuating levers and cams for operating the valve-actuating rods, and the bracket support therefor.

Fig. 5 is an enlarged detailed sectional view through one of the discharge spouts illustrating the telescoping connection between the sections composing the spout.

Referring more in detail to the drawings:—

The dispenser illustrated is particularly designed for use in connection with surgeons' wash-basins, and is preferably supported from the wall of the washroom between adjacent lavatories 1 and 2 by means of a bracket 3 having an attaching flange 4 through which suitable fastening devices 5 may be extended into the wall.

The bracket 3 also includes laterally spaced and forwardly extending circular base portions 6 having upwardly extending circumferential flanges or rims 7 forming seats for cylindrical liquid containers 8 and 9.

The containers 8 and 9 are preferably hollow glass cylinders having their lower ends closed by the bracket, and their upper ends are closed by a plate 10 complementary to the bracket and having circular flanges 11 to engage over the upper ends of the glass cylinders.

The cylinders are clamped between the upper plate and the bracket by rods 12 extending axially therethrough and having their lower ends threaded in hollow bosses 13 projecting upwardly from the upper face of the bracket. The upper ends of the rods extend through openings 14 in the upper plate to accommodate clamping nuts 15 for drawing the parts together, suitable gaskets 16 being interposed at the ends of the cylinders to effect a seal. The upper plate is also provided with fill openings 17 through which the containers may be supplied with the kind of liquid desired. The openings are normally closed by suitable plugs 18 to exclude foreign matter and prevent evaporation of the liquid. The fill plugs may be provided with breather openings 19 through which air may enter to permit gravitational flow of the liquid.

The hollow bosses 13 are provided below the ends of the threaded rods with radially extending apertures 20 through which the liquid may flow from the containers to the interior of the bosses and to ports 21 having valve seats 22, into outlet channels 23 which are formed in the bracket. The ports are normally closed by valve rods 24 extending through packing glands 25 and terminating at their upper ends in conical valve portions 26 for engaging the seats 22. The depending ends of the rods have heads 27 that are connected with the ends of rocker arms 28 by pins 29. The rocker arms are pivotally mounted on lugs 30 depending from the lower face of the bracket, as illustrated in Figs. 1 and 2.

The opposite ends of the rocker arms are loosely connected with guide heads 31 that are slidably mounted in sleeves 32 threadedly supported on depending bosses 33 formed on the lower face of the bracket 3. The guide heads 31 are retained in depressed position to maintain the valves closed by coiled springs 34 which are mounted in the sleeves and have their ends bearing against the bosses 33 and against shoulders 35 formed on the upper ends of the heads.

The liquid is dispensed from the channels 23

through spouts 36 that are rotatably supported in line therewith by unions 37 coupled to threaded bosses 38 formed on the bottom face of the bracket and through which the channels extend, as best shown in Fig. 2.

The spouts preferably extend upwardly at a slight angle and include telescoping terminal extensions 39 having curved nozzles 40. The inner ends of the extensions extend through suitable packing glands 41 to prevent leakage therebetween when the extensions are slid relatively to the spouts 36 in positioning the nozzle.

The upwardly inclined spouts are an important feature of the invention, as they prevent dripping of liquid therefrom when the valves are shut off to suspend flow of the fluid.

Formed on the lower ends of the heads 31 are necks 42, and fixed to the neck for the container 8 is a rod 43, and to the neck for the container 9 is a rod 44 whereby the rocker arms may be actuated upon movement of a knee-operated actuator now described. This actuator is supported by a channel-shaped bracket 45 fixed to the wall in line with and below the bracket 3, at a point about level with the operator's knee, and includes upper and lower projecting shelf portions 46 and 47.

The upper portion 46 is provided with spaced openings 48 forming bearings through which the ends of the rods may slide under influence of the springs 34 previously described, and the lower shelf portion 47 forms a support for the actuator. The actuator preferably includes a pair of circular segments 49 and 50 hinged together and mounted on a pivot bolt 51 extending through the plate portion 47 of the bracket 45, as best illustrated in Figs. 1 and 4.

The circular segments include upwardly facing cams for lifting the rods and against which the lower ends of the rods may bear, as shown in Fig. 1. Each cam includes a low lobe portion 52 and a high lobe portion 53 connected by an inclined rod-lifting portion 54 so that when the cams are rotated together as a unit in one direction on the pivot, one of the rods will ride up on the incline 54 onto the high lobe portion 53 to rock the arm 28 for moving one of the valves into open position, while the other rod rides idly on the low portion of the other cam. When the cams are rotated in the opposite direction, the other rod will be moved onto the high portion of its cam to open the valve in the other container.

In order to actuate the cams, the segments are respectively provided with tubular, forwardly extending arms 55 and 56 having longitudinal tubular bores 57 in which are adjustably mounted rods 58 and 59 carrying at their forward ends L-shaped heads 60 and 61.

Fixed to the laterally extending portion of the heads 60 and 61 are arms 62 and 63 carrying yokes 64 and 65, respectively. The arms 62 and 63 are preferably secured by screws 66 and 67 to the heads, and the yokes 64 and 65 are secured to the ends of the respective arms by screws 68 so that the arms may be removed from the heads and from the yokes when it is desired to operate both of the actuating levers by a single yoke. When this is the case, the arms are brought together and one of the yokes 64 or 65 is attached directly to the heads by the screws 66 and 67 that attach the arms, as best illustrated in Fig. 3.

Thus it is apparent that when the yoke is swung in one direction the rod on that side will

move upwardly of its incline to operate the valve of one of the containers while the other rod will ride idly on the flat portion of the other cam. When the yoke is swung in the opposite direction, the opposite rod will be actuated and the other rod will ride outwardly on the flat portion of its cam. Thus it is apparent that with a single yoke, as illustrated in Fig. 3, liquid may be dispensed from either container by swinging the yoke in the direction of the desired container.

In order that the yokes may be automatically returned to their normal position, that is, the position where the valves of both containers are closed, I provide flat leaf springs 69 having their rear ends anchored to a forwardly projecting lug 70 extending from the lower shelf portion 47, as illustrated in Figs. 3 and 4, and which are retained by a screw 71. The forward ends of the springs extend between lugs 72 depending from the forward ends of the arms 55 and 56 so that when the arms are swung in one direction the springs will bend to return the arms to normal position when the yoke is released.

When it is desired that the yokes be used separately, as illustrated in Fig. 1, a stop screw 73 is threaded through the lower shelf portion to engage between the members 55 and 56 to space them apart, as illustrated in Fig. 1.

A stop pin 74 is also threaded through the bracket to project in the path of the segments to limit the swinging movement of the arms. Set screws 75 are also threaded through the members 55 and 56 to clampingly engage the rods 58 and 59 to retain them in extended position after adjustment.

In using a soap dispenser constructed and assembled as described, the dispenser is mounted on the wall between pairs of wash-basins as shown with the arms and yokes projecting outwardly from the wall. Each container may then be filled with soap, which may be dispensed through the nozzles 40. In order to dispense the soap, for example from the container 9, the yoke 65 will be shifted to the right, causing the cam segment 50 to raise the rod 44 upwardly onto the high lobe portion 53 thereof, rocking the lever 28 against tension of the spring 34 and effecting opening of the valve 24 to allow soap to drain through the nozzle 40.

When the operator releases the yoke 65 its spring 69 will return it to normal position and the end of the rod moves down the inclined portion of the cam onto the low portion thereof, permitting the spring 34 to close the valve and shut off flow of soap. Soap may be dispensed from the opposite container in a similar manner by shifting the other yoke 64.

When it is desired that one of the containers contain a liquid other than soap, for example alcohol, the threaded pin 73 will be removed from the plate and the arms 62 and 63 are removed. One of the yokes will then be connected to both heads, as illustrated in Fig. 3, so that when the yoke is swung in one direction both arms will be moved simultaneously in that direction, for example, when the yoke is swung to the right, the rod 44 will ride upwardly on its cam, but the rod 43 will move idly on the low portion of its cam so that only one of the rocker arms 28 is actuated to permit flow from the container 9.

When it is desired to effect flow from the other container, the yoke will be swung in the opposite direction so that the rod 43 is raised by its cam to cause the rocker arm to open the valve

in the container 8. As soon as the yoke is released the springs 69 will return the arms to normal position and automatically shut off flow from the containers.

5 What I claim and desire to secure by Letters Patent is:

1. A liquid dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports 10 an individual discharge spout associated with each of said dispensing ports and communicating therewith, a valve controlling each port, and actuating means common to all of the valves for selectively actuating any one of said valves to 15 dispense liquid from selected containers.

2. A liquid dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve controlling each port, rods for actuating 20 said valves, a bracket member associated with said support, cam segments pivotally mounted on said bracket member and engaging said rods, lever arms connected with said segments, and yokes adjustably supported on said arms to actuate the segments. 25

3. A liquid dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve for each port, rods for actuating said 30 valves, a bracket member associated with said support, cam segments pivotally mounted on said bracket member and engaging said rods, lever arms connected with said segments, L-shaped heads on said arms, and yokes on said heads.

4. A dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve for each port, a discharge spout swivelly connected to each container and communicating 40 with the port thereof for dispensing liquid from the container, and means for selectively actuating said valves to dispense liquid from selected containers.

5. A dispenser of the character described, a plurality of liquid containers, a support forming bottoms for the containers and having liquid dispensing ports, a valve for each port, rods for actuating said valves, a bracket member associated with said support and mounting said rods, 50 and rod-actuating members pivotally mounted on said bracket member to move the valves to open position.

6. A dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve for each port, rods for actuating said valves, a bracket member associated with said support and mounting said rods, rod-actuating members pivotally mounted on said bracket member to 60 move the valves to open position, lever arms connected with said members, L-shaped heads on said arms, and yokes on said heads.

7. A dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve for each port, rods for actuating said valves, a bracket member associated with said support, cam segments pivotally mounted on said bracket member and engaging said rods, adjustable lever 70 arms connected with said segments, and yokes adjustably supported on said arms to actuate the segments.

8. A dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports, a valve 75

for each port, rods for actuating said valves, a bracket member associated with said support, cam segments pivotally mounted on said bracket member and engaging said rods, tubular lever arms connected with said segments, yoke-supporting rods telescopingly adjustable in said members, L-shaped heads on said yoke-supporting rods, and yokes on said heads. 80

9. In a dispenser of the character described, a support, a plurality of liquid containers on the support having liquid dispensing ports a valve for each port, rods for actuating said valves, a bracket member associated with said support and mounting said rods, rod-actuating members pivotally mounted on said bracket and adapted to be moved in opposite directions from a neutral position to effect opening of the valves, and resilient means for returning said members to neutral position to permit closing of the valves. 85

10. In a liquid dispenser of the character described, a support, liquid containing means on the support, means controlling flow of liquid from said liquid containing means, a pair of rods carried by the support for actuating said controlling means, a bracket member associated with said support and mounting the lower ends of the rods, rod actuating means pivotally mounted on said bracket and adapted to be moved in opposite directions from neutral position to effect operation of said rods, and resilient means 100 connected with said rod actuating means for automatically returning said rod actuating means to neutral position.

11. In a dispenser of the character described, a support, liquid containing means on the support having spaced outlet ports, means controlling flow of liquid from said liquid containing means through said ports, a pair or rods carried by the support for actuating said controlling means, a bracket member associated with said support, and mounting the lower ends of the rods, and rod actuating members pivotally mounted on said bracket and having cam portions engaging the lower end of the respective rods and adapted to be separably moved in opposite directions from a neutral position to effect selective operation of the respective rods. 115

12. In a liquid dispenser of the character described, a container having an outlet port, means for supporting the container, a rocker arm, means for pivotally mounting the rocker arm on the bottom of the container, a valve closing said port, means operably connecting the valve with the rocker arm, a reciprocable rod movable relatively to the support, means for connecting said rod with the rocker arm, a rod actuating cam engaging the lower end of the rod, means for rotatably mounting the cam on the support, means for moving the cam in one direction to open the valve, and yielding means for moving the valve to closed position. 120

13. In a liquid dispenser of the character described, a support, liquid containing means on the support, means controlling flow of liquid from said liquid containing means, a pair of rods carried by the support for actuating said liquid controlling means, a bracket member associated with said support, for mounting the lower ends of the rods, cam segments pivotally mounted on said bracket member and engaging said rods, lever arms connected with the segments and yokes adjustably supported on the ends of the arms to actuate the segments. 125

14. In a dispenser of the character described, a support, liquid containing means on the sup- 130

- port, means controlling flow of liquid from said liquid containing means, a pair of rods carried by the support for actuating said liquid controlling means, a bracket member associated with said support and mounting the lower ends of the rods, cam segments pivotally mounted on the bracket member, and engaging said rods, lever arms connected with said segments, L-shaped heads on said arms, and yokes on said heads.
15. In a dispenser of the character described, a support, a liquid container on the support having an outlet port, a valve controlling flow of liquid through said port, a bracket member associated with the support, a rod reciprocally mounted in the bracket member, means operably connecting the rod with said valve, a cam segment engaging the rod, means pivotally supporting the cam segment for movement in a horizontal plane on the bracket, a lever arm connected with the cam segment and extending laterally therefrom and a yoke supported on the outer end of the lever arm for actuating said cam segment to operate the valve for dispensing liquid through said port.
16. In a liquid dispenser of the character described including a support, liquid containing means on the support having liquid dispensing ports and individual discharge spouts associated with each of said dispensing ports and communicating therewith, a valve controlling each port, and actuating means common to all of the valves for selectively actuating said valves.

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