Aug. 6, 1946. H. E. MARVEL 2,405,264

CONTROL MECHANISM FOR DISPENSING APPARATUS

Filed July 13, 1940 2 Sheets-Sheet 1

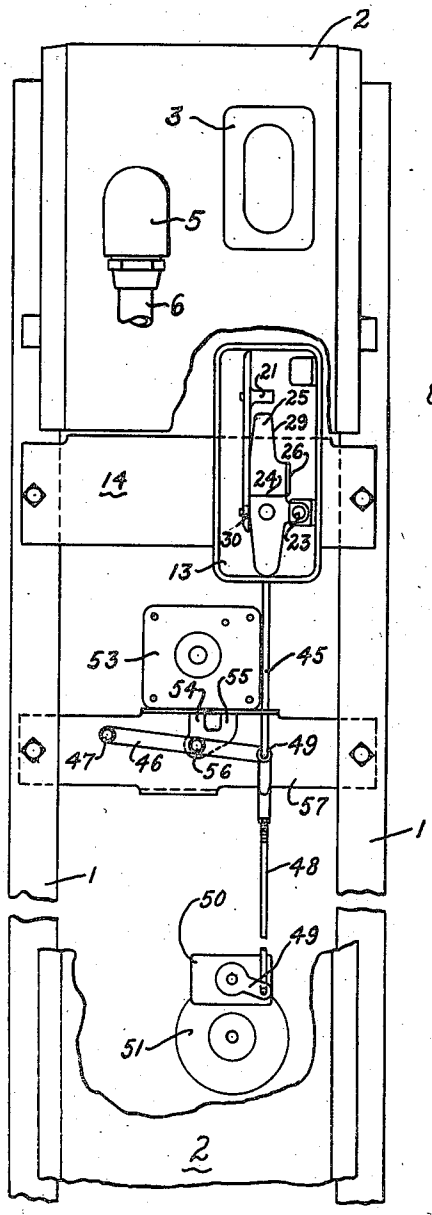


Fig. 1

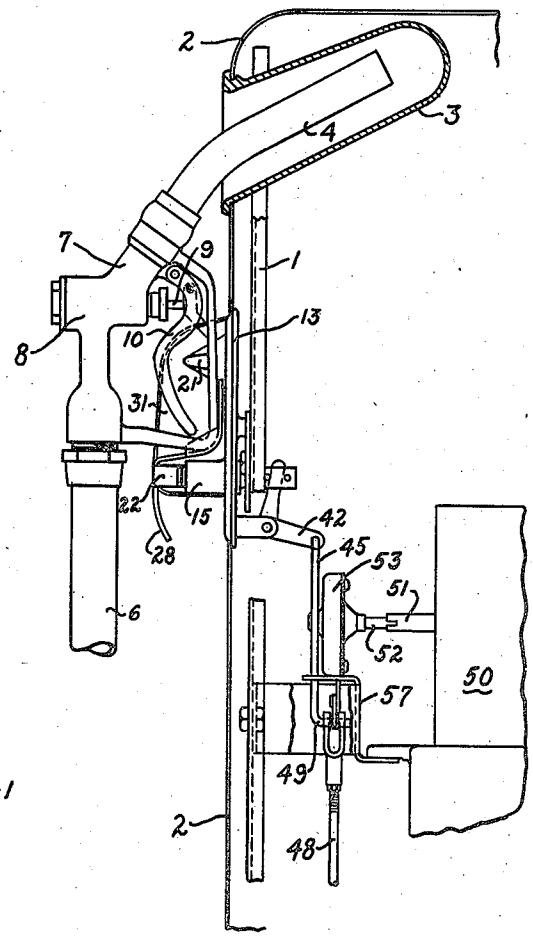


Fig. 2

Harvey E. Marvel
INVENTOR.

BY Edmund W. C. Kamm

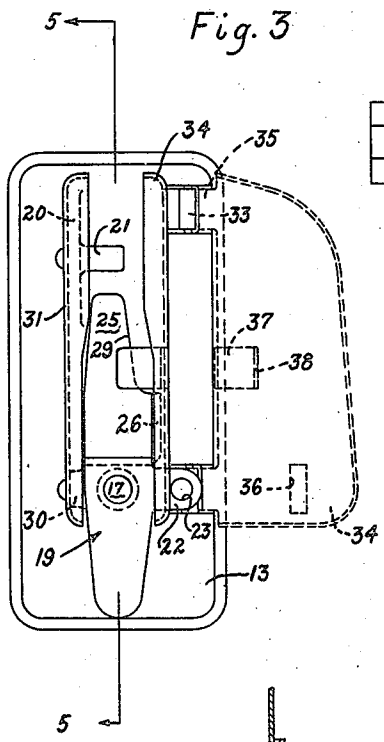
ATTORNEY.

Aug. 6, 1946. H. E. MARVEL 2,405,264

CONTROL MECHANISM FOR DISPENSING APPARATUS

Filed July 13, 1940 2 Sheets-Sheet 2

Fig. 3



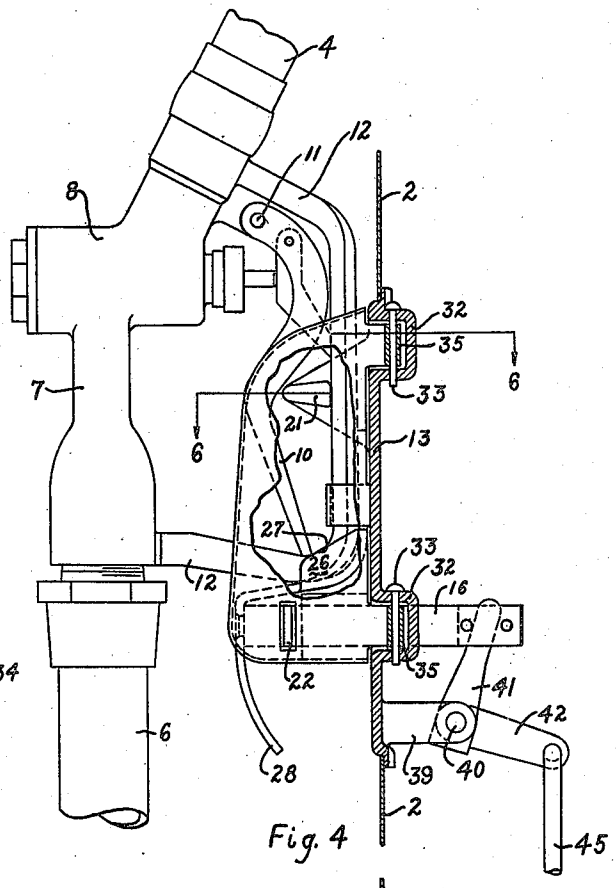


Fig. 4

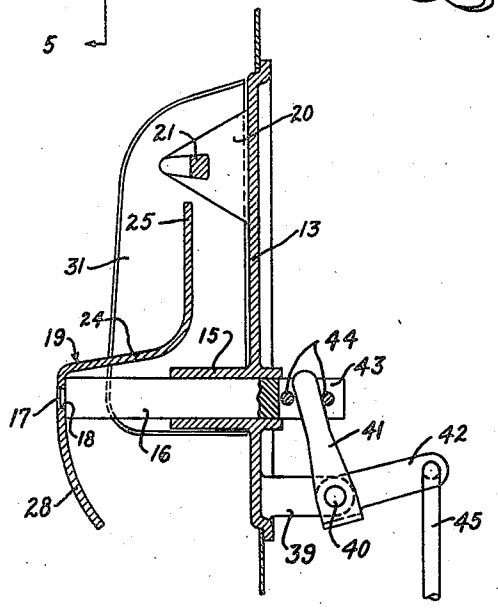
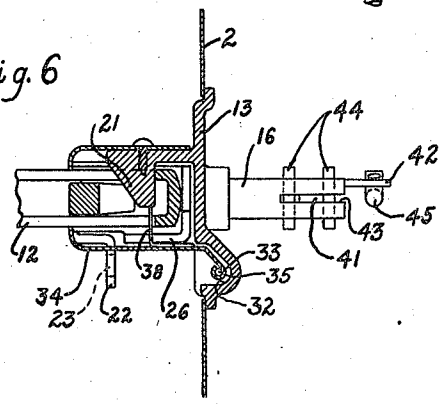


Fig. 5

Fig. 6



Harvey E. Marvel
INVENTOR.

BY Edmund W. C. Kamm
ATTORNEY.

Patented Aug. 6, 1946 2,405,264

UNITED STATES PATENT OFFICE

2,405,264

CONTROL MECHANISM FOR DISPENSING APPARATUS

Harvey E. Marvel, Fort Wayne, Ind., assignor to S. F. Bowser & Company, Incorporated, Fort Wayne, Ind., a corporation of Indiana

Application July 13, 1940, Serial No. 345,353

19 Claims. (Cl. 222—74)

1

This invention relates to a mechanism for controlling and locking up the delivery means provided in the usual filling station gasoline dispenser and comprises a novel nozzle support and operating connections between said support and the motor control switch which is usually provided in such apparatus.

It is an object of the invention to provide a nozzle support which is rugged and which at the same time is simple in construction and attractive in appearance.

It is a further object of the invention to provide a nozzle supporting and switch controlling mechanism which will not support the nozzle in the switch-on position of the support but which positively supports the nozzle in the switch-off position.

Yet another object of the invention is to provide simple means for locking the nozzle on the support and for preventing ready access to the nozzle valve trigger in the locked up position.

Another object of the invention is to provide a switch operating nozzle support which lends itself to one handed operation.

Still another object of the invention is to provide a switch operating nozzle support which compels the restoration of the nozzle support to the switch-off position before the nozzle can be placed on the support. Thus two complete acts must be performed in predetermined sequence to produce the result of returning the nozzle to supported condition.

A further object of the invention is to provide a nozzle support which retains the nozzle securely supported in the service or unlocked condition so that it cannot be dislodged by ordinary hose movements.

It is also an object of the invention to store the locking member in position in which it will not interfere with the manipulation of the nozzle or the support when the device is in the unlocked condition.

These and other objects will become apparent from a study of the specification and the drawings which are attached thereto and form a part thereof and in which:

Figure 1 is side elevation of a dispensing apparatus with parts of the housing broken away to show the nozzle support and its related reset interlock and switch operating mechanisms.

Figure 2 is a front elevation showing the mechanisms of Figure 1 and a nozzle in place on said support.

Figure 3 is a front elevation of the nozzle support with the locking member shown by full lines

2

in locking position and by dotted lines in the unlocking position.

Figure 4 is a side elevation of the nozzle support of Figure 3 with the locking member broken away to show the relation of the parts of said support and those of a nozzle.

Figure 5 is a section taken on the line 5—5 of Figure 3.

Figure 6 is a sectional view taken on the line 6—6 of Figure 4.

Referring to Figure 1, numerals 1 indicate the frame of the dispensing apparatus, 2 indicate portions of the housing of the apparatus and 3 is used to indicate a shroud for the nozzle tip 4.

A hose connection 5 is shown in Figure 1 and this is adapted to receive one end of a hose 6 to which is attached the usual nozzle 7. The nozzle is provided with a valve indicated generally at 8 having a projecting stem 9 which is actuated by a trigger or operating lever 10, the lower portion of which stands away from a guard 12, is adapted to be manually engaged and serves as the operating portion of the lever. The latter is pivoted at 11 to a portion of the nozzle guard 12.

The nozzle support comprises a back plate 13 which is preferably a casting which is mounted by means of screw fastenings not shown through the cross member 14, Figure 1, which forms a part of the dispensing apparatus frame. Formed integrally with the back plate is a horizontal boss 15, best shown in Figure 5, which is adapted to receive a sliding shaft 16. The outer end of the shaft is provided with a projection 17 which is adapted to enter a hole 18 in the nozzle supporting member 19. The projection is riveted over after passing through the hole 18 so as to hold the member 19 rigidly on the shaft 16.

Also, projecting from the back plate 13 is a boss 20 which is provided with a lateral, horizontal projection 21, thus forming a hook which lies substantially parallel with the main portion of the back plate 13. This hook is disposed above the boss 15 and is adapted to engage the trigger guard 12 as is clearly shown in Figures 2 and 4.

Projecting backwardly then laterally from the right-hand side of the nozzle supporting member 19, as shown in Figures 1 and 3, is a lock receiving projection 22, the free end of which lies in a substantially vertical plane disposed perpendicular to the axis of boss 15 and shaft 16 and which is perforated as shown at 23 to receive a hasp of a padlock not shown.

The nozzle support 19 also comprises a member 24 which is bent backwardly above shaft 16 and thence upwardly, as shown at 25, to form an angle

in which the lower corner or bend of the nozzle guard 12 may be received as shown in Figures 2 and 4. The member 24 is inclined upwardly toward the member 25 so that should the nozzle be rested on the element 24 when it occupies the position shown in Figure 5, it would tend to slide to the left as shown in Figure 5 and fall off at element 24. It will be seen, however, that when the shaft 16 occupies the position shown in Figures 2 and 4, the vertical section of the nozzle guard will be received between the back plate 13 and the hook 21 so that such sliding of the nozzle from the support as was just described is prevented.

At the bend where the elements 24 and 25 merge, a side plate 26 having inclined edge 27 is provided. This plate forms, with elements 24, 25 and 31, a cradle for reception of the guard 12 and prevents it from slipping sidewise to the right or left as shown in Figures 1 and 3. It is thus that the nozzle is prevented from being dislodged from the nozzle support by accidental movements of either the nozzle or the hose 6 which is attached thereto.

The support 19 is also provided with a depending, inwardly curved portion 28 which is disposed below the axis of shaft 16 and affords a hand grip by means of which the shaft 16 may be actuated in either direction. If desired, the nozzle tip 4 or another part of the nozzle 7 may be engaged with the projection 28 for the purpose of pulling the shaft 16 outwardly. It should be noted that the portion 25 of the hose hook has substantial width, as shown in Figures 1 and 3, and that it is provided with a downwardly and outwardly slanting edge 29 which serves to prevent the nozzle guard 12 from being engaged with the hook 21 when the support 19 is in any position except that shown in Figures 2 and 4; in other words, the lateral motion of the nozzle guard necessary to engage it with the hook 21 is prevented by element 25 in the Figure 5 or any similar position.

A boss 30, shown in Figures 1 and 3, is provided on the boss 15 and extends laterally therefrom. A guard plate or shield, preferably of stamped metal and indicated by the numeral 31, is fixed to the boss 30 and also to the projection 20 by means of suitable fastenings such as drive screws. As shown clearly in Figures 2 and 4, this plate 31 prevents access to the nozzle trigger 10 from one side. The plate 31 is of sufficient extent to also shroud the boss 15 and the nozzle support 19, except for projection 28 thereof, when the latter is in the nozzle supporting position.

Formed in the back plate 13 are pockets 32 which support hinge pins 33. A second plate 34 is provided with hinges 35 which are adapted to enter the pockets 32 and to receive the hinge pins 33. The plate 34 may thus be swung back substantially in contact with the outer surface of the back plate 13 so as to expose the nozzle support and the hook 21 from the right-hand side thereof, as shown in Figure 3, or it may be swung to a position in which it is parallel with the plate 31 so as to shroud and prevent access to the nozzle support, the trigger 10 and hook 21.

The plate 34 is provided with a vertically extending perforation 36 which is adapted to receive the element 22, as shown clearly in Figure 3, so that the lock which enters the opening 23 in element 22 will lie outside of the plate 34 to hold it in its shrouding position.

An angle member has one leg 37 fixed in any desired manner to the plate 34 and has its other leg 38 extending in a direction substantially perpendicular to the plate 34. The leg 38 is of

such a length that when plate 34 occupies its shrouding position parallel to plate 31, the leg will engage a nozzle guard 12 immediately above the lower right-hand corner thereof, as shown in Figure 4, so that the nozzle cannot be lifted vertically from the support for the purpose of moving the trigger 10 out from the protection of the plates 31 and 34.

The back plate 13 is provided with a projection 39 in which is supported a shaft 40. A bell crank having a vertical arm 41 and a horizontal arm 42 is mounted to pivot on said shaft 40. The arm 41 is received in a slot 43 in the inner end of shaft 16 between two pins 44 so that the axial motion of shaft 16 will result in an up and down motion of the arm 42 of the bell crank. This movement of the arm 42 is transmitted through a link 45 to a lever 46 which is pivoted to the frame at 47 and to a second link 48 which is connected to both the lever 46 and link 45 at 49.

A register indicated generally by the numeral 50 is provided with a reset shaft 51 which is actuated in a known manner and serves to, in turn, actuate a shaft 52 of an interlock mechanism 53 shown in Figures 1 and 2. The internal structure of the interlock mechanism 53 is clearly disclosed in the application of C. P. Griffith, Serial No. 274,163, filed May 17, 1939. The seeker 54 and the cam element 55 of the interlock mechanism are pivoted at 56 on the lever 46. Both the lever and the interlock mechanism are supported on a cross member 57 which forms a part of the frame.

The link 48 is connected to actuate the lever 49 which, in turn, operates a switch 58 which controls the motor 51.

It will be seen that the nozzle support and the hose outlet are disposed as nearly as possible to the top of the dispensing apparatus housing so that a maximum length of hose may be used in this apparatus.

Operation

In operating this device, assuming that it has been locked up for the night, the operator must first unlock the padlock, not shown, and remove it from the perforation 23. He will next swing the plate 34, which has been released by removal of the lock, from the full position to the dotted line position of Figure 3. In so doing the projection 38 which overlies the nozzle guard 12, as shown in Figures 4 and 6, will be withdrawn.

To remove the nozzle from the support the operator must lift nozzle 7 to a height sufficient to clear the edge 27 of plate 26, whereupon the nozzle can be moved laterally to the right pivoting about the nozzle tip 4 which is fulcrumed in boot 3, as viewed in Figure 3, to disengage the hook 21 from behind the nozzle guard 12. The nozzle is thus freed from the support and the hook 21 and the nozzle tip may then be withdrawn from the boot.

The operator may hook some portion of the nozzle or some portion of his hand under the projection 28 of the nozzle support and by pulling outwardly thereon actuate the bell crank 41, 42 and the links 45, 48 to operate switch 50 to energize the motor 51. This operation will be blocked by the interlock mechanism unless the register 50 has been reset.

The next step will be to manipulate the valve trigger 10 to dispense gasoline.

In order to restore the nozzle to the nozzle support it is first necessary, either by hand or by use of some part of the nozzle, to push the nozzle support 19 and the shaft 16 inwardly or to the right, as shown in Figures 2, 4 and 5. If it is at-

tempted to rest the nozzle guard 12 on the support 19 without first pushing said support inwardly, the parts being in the position shown in Figure 5, the nozzle guard 12 will be prevented from engaging the hook 21 by reason of the fact that the lateral motion of the nozzle necessary to effect this engagement will be prevented by the edge 29 of the portion 25 of the nozzle support. It is not until this section 25 has been moved back into close juxtaposition with the back plate 13 that the guard may enter behind the hook 21.

Any attempt to support the nozzle on the portion 24 of the nozzle support without having first moved said support inwardly to the Figure 4 position will be defeated by the slipping of the nozzle guard down the inclined portion 24 of the support so that the nozzle will be dislodged.

To lock up the nozzle the first step of swinging plate 34 will be carried out in the opposite direction and the padlock may then be replaced to hold the parts in the position shown in Figure 4.

When the nozzle is in its locked up position it is obvious that the elements 31 and 34 prevent any manual operation of the nozzle trigger 10 by blocking access thereto. At the same time, the element 38 which is fixed to 34 prevents the nozzle from being lifted upwardly so as to bring the trigger upward and out from the protection of the shields to a position where the nozzle could be actuated manually.

Thus it will be seen that the nozzle is effectively locked in position by the mechanism disclosed herein and the nozzle trigger is shielded so that it cannot be manually operated except when the mechanism is in the service or unlocked condition.

It is obvious that various alterations may be made in the size, form, arrangement and construction of parts without departing from the spirit of the invention and for this reason applicant does not desire to be limited solely to the specific embodiment disclosed herein for purposes of explanation but rather he desires protection covering such devices as may fall fairly within the scope of the appended claims.

I claim:

1. In a liquid dispensing apparatus comprising a nozzle, a casing, a flow supplying means and a control device for said flow supplying means in said casing, a nozzle support comprising a plunger mounted for reciprocating movement to different positions with respect to said casing, connections for transmitting movement from said plunger to said control device and means to prevent supporting said nozzle on said plunger except in a predetermined position thereof.

2. In a liquid dispensing apparatus comprising a nozzle, a casing, flow supplying means and a control device for said flow supplying means in said casing, a nozzle support mounted for movement to different positions with respect to said casing, connections for transmitting movement from said support to said control device and means on said casing adapted to project over said support to prevent replacement of said nozzle on said support in all except a predetermined position of said support, said projecting means extending transversely of said support to engage and hold the nozzle on the support when the latter occupies said predetermined position.

3. In a liquid dispensing apparatus comprising a nozzle, a casing, flow supplying means and a control device for said flow supplying means in said casing, said nozzle having a valve, an operating lever therefor and a guard for said lever, a member projecting out from the casing on which the nozzle may be hung up by its guard and shielding means mounted on the casing and adapted to occupy a position closely adjacent said lever and guard so as to prevent insertion of a digit between said lever and said shielding means for operating said lever and means cooperating with said guard and operable by said shielding means to prevent removal of the nozzle from the support.

4. In a liquid delivery apparatus, a delivery hose terminating in a nozzle having a valve provided with a manually operable lever, a hook for supporting the weight of said nozzle, means for preventing removal of said nozzle from said hook and for preventing access to said lever to prevent operation of same when the nozzle is on the hook, said preventing means comprising an element movable from preventing position to give access to said lever and to permit removal of the nozzle from the hook, and mechanism governed by the hook for controlling delivery of liquid to the hose.

5. In a liquid dispensing apparatus, a liquid delivery hose terminating in a nozzle having a manually operable valve lever, said lever having an operating portion, a slidably mounted hook for supporting the weight of said nozzle, means associated with said hook for preventing manual operating contact with the operating portion of said nozzle valve lever to prevent operation of the lever when the nozzle is in its supported relation on the hook, and mechanism governed by the hook for controlling the delivery of liquid to the hose.

6. In a liquid dispensing apparatus, a liquid delivery hose terminating in a nozzle having a valve provided with a manually operable lever and a guard, a longitudinally reciprocable hose hook adapted for the support of said nozzle, means adapted to overlie the lever on each side to prevent effective insertion of a digit between said means and said lever for operating said lever, and means adapted to engage said guard to hold the nozzle in place on said hook.

7. In a liquid dispensing apparatus, a liquid delivery hose terminating in a nozzle having a valve provided with a manually operable lever and a guard, a longitudinally reciprocable hose hook adapted for the support of said nozzle, means adapted to overlie the lever on each side when the nozzle is on the hook to prevent manual access thereto for effective operation thereof, means adapted to engage said guard to releasably hold the nozzle in place on said hook and additional means engageable at will with said guard and co-operating with said first mentioned guard engaging means to prevent removal of the nozzle from the hook.

8. In a liquid dispensing apparatus, a liquid delivery hose terminating in a nozzle having a valve provided with a manually operable lever and a guard, a longitudinally reciprocable hose hook adapted for the support of said nozzle, means associated with said hook adapted to overlie the lever on each side to prevent manual access thereto for effective operation thereof, at least one of said means being mounted for movement out of overlying position to permit access to said lever.

9. In a support for a hose nozzle, having a valve trigger and a trigger guard, a guard support adapted to engage the lower and rear portions of said guard, a fixed hook, disposed transversely of said support from one side thereof and adapted to engage the rear portion of the guard, a movable hook adapted to be positioned transversely of said support from the other side thereof immediately above the supported rear portion of said guard

whereby contact between the hooks and the guard and the support and the guard prevent substantial movement of said guard in any direction.

10. In a support for a hose nozzle having a valve trigger comprising an actuating portion and a trigger guard, a guard supporting element, means associated therewith for preventing substantial movement of said guard in any direction, and shields disposed in the region of and to enclose laterally the actuating portion of said trigger to prevent manual access thereto for effective operation thereof when the nozzle is in position on the hook, one of said shields supporting a part of said preventing means.

11. In a support for a hose nozzle having a valve trigger and a trigger guard, a nozzle supporting element adapted to assume the weight of said nozzle, means associated therewith for preventing substantial movement of said nozzle in any direction, and shields comprising substantially flat plates disposed in the region of said trigger substantially parallel to, and on both sides thereof to prevent manual access thereto for effective operation thereof when the nozzle is in position on the hook, one of said shields being movably mounted for withdrawal from shielding position.

12. In a support for a hose nozzle having a valve trigger and a trigger guard, a guard supporting element adapted to support the weight of the nozzle, means associated therewith for preventing substantial movement of said guard in any direction, and shields disposed in the region of said trigger to prevent manual access thereto for effective operation thereof when the nozzle is in position on the hook, one of said shields being movably mounted for withdrawal from shielding position, and locking means on said support and engageable wtih said movable shield for preventing movement of either said support or said movable shield.

13. In a support for a hose nozzle having a valve trigger and a trigger guard, a guard supporting element, releasable means associated therewith for preventing substantial movement of said guard in any direction, and shields disposed in the region of said trigger to prevent effective access thereto when the nozzle is in position on the element, one of said shields being movably mounted for withdrawal from shielding position, said movable shield being connected to release said movement preventing means upon withdrawal from shielding position.

14. In a liquid dispensing apparatus, a casing, a flow line comprising a nozzle having a tip and a guard, means for starting and stopping the flow of liquid in said line, said means including a nozzle support which is movable between flow starting and flow stopping positions, a shroud for said nozzle tip, means comprising a laterally directed hook on said casing cooperating with said support to retain said nozzle thereon, and adapted to receive said nozzle guard only upon a lateral pivotal movement of said nozzle about the tip when it is inserted in said shroud, and a low, upstanding wall on said support adapted to prevent reverse pivotal movement of said nozzle and guard until said nozzle is lifted upwardly of said support.

15. In a liquid dispensing apparatus, a casing, a flow line comprising a nozzle, means for starting and stopping the flow of liquid in said line, said means including a nozzle support which is movable between flow starting and flow stopping positions, means on said casing cooperating with said support in the flow stopping position to engage and hold said nozzle on said support and locking means mounted on said casing for movement to and from locking position with respect to said nozzle.

16. In a support for a hose nozzle having a valve trigger and trigger guard, a guard supporting element, means cooperating with said element to retain the nozzle on said element and to prevent movement of the nozzle in certain directions, shields disposed in the region of said trigger to prevent access thereto when the guard is in position on the element, one of said shields being movably mounted for withdrawal from shielding position, and additional means mounted on said movable shield adapted to cooperate with said first named means to prevent substantial movement of said supported nozzle in any direction when said shield occupies its shielding position.

17. In a liquid dispensing apparatus comprising a casing, a flow line comprising a nozzle having a tip, a valve lever and a guard, and means for starting and stopping the flow of liquid in said line, a shroud for housing the nozzle tip, a nozzle guard support which is movable longitudinally between flow starting and flow stopping positions, a nozzle engaging, laterally directed hook on said casing cooperating with said support in the flow stopping position to hold said nozzle on said support, an upstanding wall mounted on one edge of said support for preventing movement of said guard on said support, laterally in one direction while said hook prevents movement of the guard laterally in the opposite direction, a depending, operating projection on the outer end of said support, shield plates mounted parallel to said guard on each side thereof and closely covering said valve lever to prevent operation thereof, and means for mounting one plate for displacement from covering position, to permit removal of the nozzle from the support by lifting it above said wall and pivoting it, about said tip, from engagement with said hook.

18. In a support for a hose nozzle, said nozzle having a valve operating lever and a lever guard having one portion parallel to and another portion substantially perpendicular to the body of said nozzle, a longitudinally reciprocating support for the perpendicular portion of said guard, means on said support to prevent substantial lateral movement of the guard with respect to said support when the guard is seated thereon, a fixed hook disposed transversely of and above said support and adapted to engage the parallel portion of said guard upon lateral movement of the guard into position above said support to hold said guard on said support.

19. In a support for a hose nozzle, having a valve trigger and a trigger guard, a reciprocable guard supporting element provided with a relatively low, upstanding flange arranged to lie in substantially parallel relation with said guard, a fixed hook disposed transversely of and above said support and flange and adapted to engage said guard on one side to hold said guard in said parallel relation with said flange, said flange serving to engage said guard to prevent movement of said guard away from said hook until the guard is lifted clear of the flange.

HARVEY E. MARVEL.