

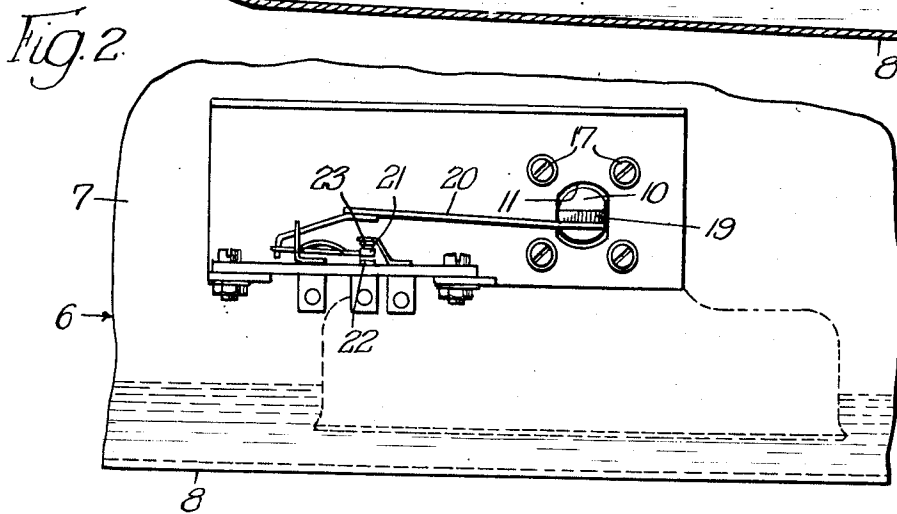
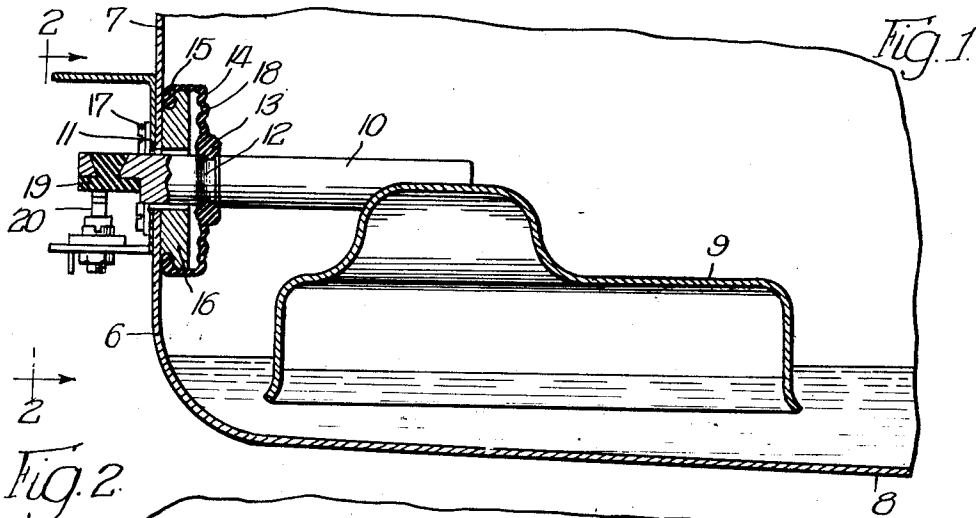
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CONTROL MECHANISM

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CONTROL MECHANISM

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1 Claim. (Cl. 137—387)

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This invention relates to control mechanism and more particularly to float control mechanism adapted to be associated with containers for receiving and handling fluids or liquids.

This application is a division of the parent application, Serial No. 66,229, filed December 20, 1948.

In apparatus such as washing machines, wherein liquids are used and wherein electrical control mechanism is operatively associated with and responsive to liquid level conditions, proper sealing means must be used to isolate the electrical control mechanism from the liquid and prevent leakage of the liquid from its container. At the same time in mounting such electrical control mechanism on or in the liquid containing receptacle an arrangement must be provided whereby there is freedom of movement of the control parts in response to change in water level conditions.

One object of the invention is to provide a novel float-controlled switch assembly to meet the requirements hereinabove mentioned.

Another object is to provide a novel float-controlled switch assembly wherein the sealing means for the actuator therefor serves in the capacity of a support upon which the actuator is movable.

A further object is to provide a simple durable and efficient control mechanism adapted to meet all of the requirements for successful operation.

These and other objects are accomplished by one embodiment of my invention as illustrated in the accompanying drawings, in which—

Figure 1 is a fragmentary view in vertical cross-section of the float control mechanism shown operatively mounted on a container such as a washing machine tub for containing water; and,

Figure 2 is a view in elevation taken in the plane represented by lines 2—2 of Figure 1 of the drawings.

The various novel features of the invention will be described in this specification and particularly pointed out in the appended claim.

Referring to the figures of the drawings, the outer stationary tub or container 6 is preferably formed at its lower portion with a cylindrical wall 7. The bottom 8 of the container is formed or sloped to facilitate the drainage of washing fluid therefrom in any suitable manner. Disposed within the lower portion of the tub 6 is a float 9 in the form of an inverted cup-like member arranged to be floated when water in sufficient quantities enters the container 6, the same being mounted upon the actuator member or rod

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10 which extends laterally through and beyond an opening 11 formed in the side wall portion 7 of the stationary container or receptacle.

The actuator rod 10 is provided with an annular groove 12 mounted in the enlarged annular collar 13 of a diaphragm shaped seal 14 of corrugated structure which has an enlarged edge portion 15 clamped in sealed relation to the side wall portion 7 by means of the block or bushing 16. The block or bushing 16 has a central opening in alignment with opening 11 in the container wall and embraces the actuator rod 10. The block 16 is further provided with a peripheral annular recess for receiving the enlarged edge 15 of the seal and is secured to the side wall portion 7 by means of screws 17 or the like. It will be noted that the diaphragm-shaped seal with its enlarged annular collar 13 fitting within the groove 12 provides a mounting for the actuator rod 10 whereby said rod is fulcrumed for movement in said collar in accordance with change of level or quantity of water in said container. The seal also effectively prevents leakage of washing liquid from the container 6 to the outside or into any surrounding cabinet and also prevents water getting to the switch contacts. The seal 14 is formed with annular corrugations 18 for strengthening the same so as to provide a suitable support for the actuator rod 10.

Connected to the outer end of actuator rod 10 and insulated therefrom by insulation 19 is a switch operating arm 20 which is formed with a movable contact 21 adapted to be moved into engagement with either of the contacts 22 or 23, dependent upon the position of the float 9 in turn controlled by the level of water in the tub 6.

The switch contacts 21, 22, and 23 may be included in an electrical circuit for control of sequential operations in a washing cycle, such, for example, as illustrated in the parent application above identified.

By means of this arrangement, the objects of this invention and the requirements for successful operation are met.

It is apparent that various modifications may be made within the spirit and scope of my invention and it is my intention to cover all such modifications in the appended claim.

What is claimed is:

In combination, a fluid container having a wall provided with an aperture therethrough, switch operating means including an actuator arm extending through said aperture into the interior of said container adapted to operate an

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electric switch disposed exteriorly of said container, said actuator arm adjacent the interior of said wall being provided with an annular groove, means for actuating said arm in accordance with the quantity of fluid within said container, a cup shaped diaphragm sealing member having a central portion and a marginal rim portion adapted to provide a fluid-tight joint between said container wall and said actuator arm, said rim portion adjacent the edge thereof being provided with an enlarged annular ring portion, and a clamping member secured to said wall within said sealing member and being provided with an annular recess adapted to embrace said ring portion to provide a seal; said central portion of said sealing member having an opening defined by an enlarged annular ring portion adapted to engage in the annular groove of said actuator arm to provide a seal and to provide a fulcrum for said actuator arm for movement

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thereof in accordance with the quantity of fluid within said container.

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