Nov. 15, 1949 G. W. ELLWANGER ET AL 2,488,008

DRAIN VALVE FOR LAUNDRY TUBS

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Fig. 1.

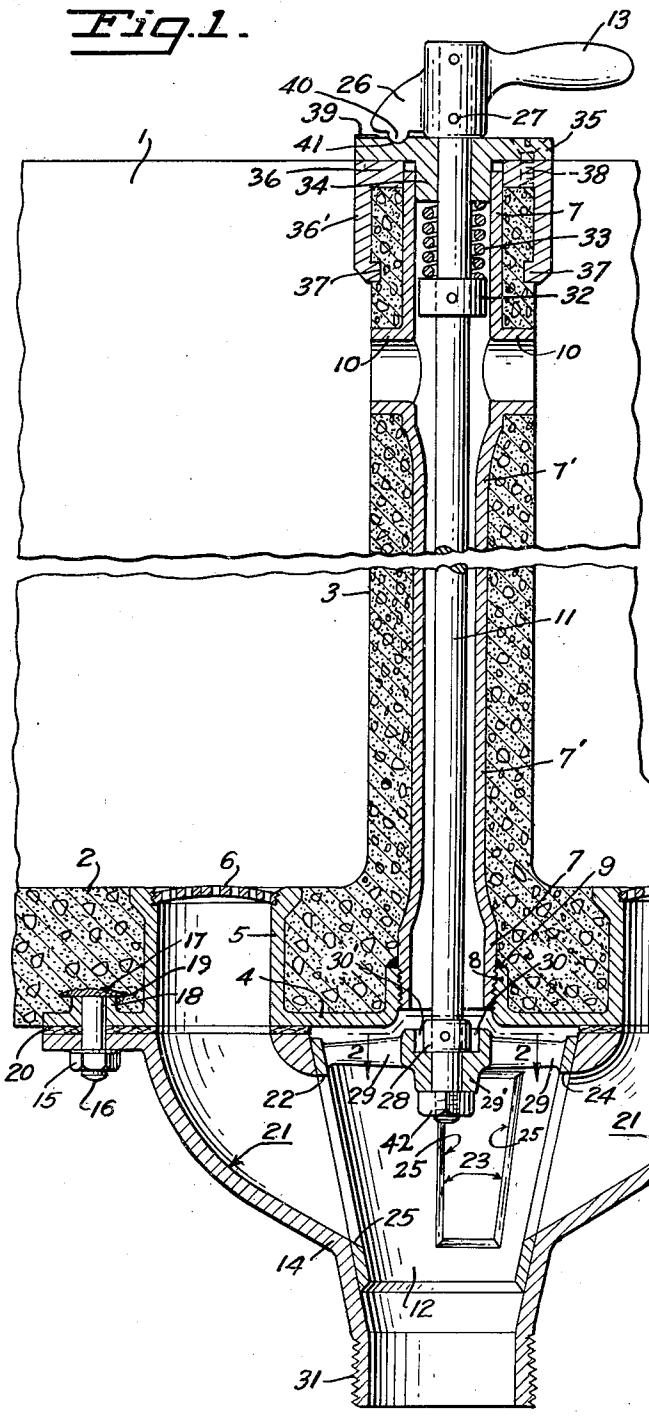


Fig. 3.

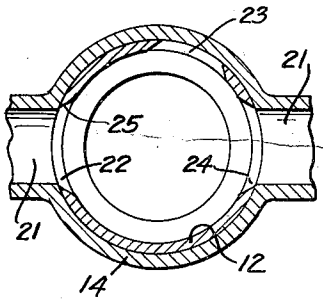
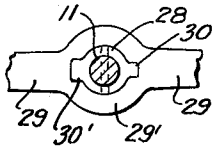


Fig. 2.



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DRAIN VALVE FOR LAUNDRY TUBS

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2 Claims. (Cl. 4—208)

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This invention relates to drain valves for laundry tubs, or so-called stationary tubs which are usually made in pairs with a central partition or dividing wall, and generally constructed of cement.

The principal object of the invention is to provide an improved drain valve arrangement for such tubs which may be manipulated from the top of the tubs to avoid the common necessity of the person doing the washing of feeling around in the hot soapy water under the clothes to find the ordinary stoppers usually supplied with such tubs.

One feature of the invention is to provide such a drain valve for manipulating from above the water which will preferably drain either tub separately, or both together, or close off both.

Another feature is to provide such a valve which will preferably indicate on top which tub or tubs are being drained or closed.

Another feature is to provide a construction adapted for embedding or moulding into the cement walls of the tubs during their manufacture.

Another feature is to provide a structure in which the valve itself may readily be removed for examination, replacement, or cleaning out if required.

Another feature is to provide a spring seated valve, and one which will cut off any lint or ravelings which might work through the protecting screens.

Still another feature is the provision for overflow from both tubs, in a unitary embedding structure.

Other features and advantages of the invention will appear in the following description and the accompanying drawings.

In the drawings,

Fig. 1 is a central vertical cross section of one of our improved drain valves shown cast in place or embedded in the cement body of a pair of cement laundry tubs.

Fig. 2 is a cross section of the valve rod connection to the valve taken along the line 2—2 of Fig. 1.

Fig. 3 is a cross section of the valve plug showing its hollow form and its ports.

In further detail, the drawing shows at 1 the rear wall of the tubs, the bottom wall 2, and the central partition wall 3.

Shown embedded in the cement structure is a bottom plate 4 provided with spaced tubular risers 5 to form a drain opening for each tub on opposite sides of the partition or dividing wall 3,

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and which risers are preferably fitted with detachable screen disks 6 in any manner desired, but here shown as threaded in place. These screens are of course not put in until the tubs are entirely finished.

Permanently secured to plate 4 is a vertically extending tube or pipe 7 which may be of plain round cross section from end to end, tho we prefer to flatten it somewhat for the major portion of its length as indicated at 7' so as to maintain more cement about it without unduly thickening the central wall 3 of the tubs, or locally increasing its thickness in the vicinity of the tube 7.

Tube 7 is preferably permanently secured at its lower end to plate 4 as by screwing or forcing it within an upwardly projecting flange 8 on plate 4 and welding it as at 9.

A pair of oppositely directed overflow nipples or short tubes 10 are permanently welded into opposite sides of tube 7 at the highest desired water level so as to freely take the overflow from either or both tubs at all times. These overflow nipples or ducts are of course cast in place with tube 7.

Within vertical tube 7 is a valve stem rod 11 which carries a hollow rotary plug valve 12 at its lower end, and a manipulating handle 13 at its upper end, to be more fully described further on.

The valve 12 is a hollow conical shell seated within a complementally formed housing 14 which is secured to the lower side of bottom plate 4 as by nuts 15 screwed to projecting studs 16 which are each permanently secured to the bottom plate as by welding 17 and which may be rough and overhang a boss 18 formed on the plate so as to provide a projecting portion 19 to interlock in the cement.

A suitable gasket 20 may be interposed between the housing and the bottom plate to make a tight joint.

Valve housing 14 is provided with downwardly curved ducts 21 leading from the drain risers 5 to the valve 12 and there shaped to substantially coincide with the shape of the valve ports 22, 23, 24, when the valve is turned to drain the tubs, and the edges of the valve ports are preferably sharpened as indicated at 25 so as to cut off any ravelings which may extend through the ports when the valve is turned.

The valve ports are arranged in such a manner that either tub may be drained separately, or both together, or both shut off, and the handle 13 at the upper end of the valve rod may be provided with a pointer 26 to indicate the position of the valve below, or the handle 13 itself may be set

at the proper angle with respect to the valve to function as the indicator to show which tub is draining or shut off.

In order to hold the handle and valve in fixed relation, any suitable means may be used as well understood by mechanics, but here shown as by soldering or pinning the handle to the valve rod as at **27** and locking the valve to the lower end of the rod in a definite position, and which is assured in a simple manner as shown in Fig. 1 wherein a special collar **28** is soldered or pinned to the rod just above the valve spider arms **29**, and which collar is provided with different size or differently positioned driving lugs **30 30'** projecting into complemental recesses formed in the hub **29'** of the spider, and with the lower end of the rod extending through a bore in the hub and secured by a tight fitting nut **42** or suitable lock nut. By this means the valve body **12** may easily be applied or removed from below the tubs after the housing **14** has been removed, and the valve will only fit in a predetermined angular relation to the handle at the upper end of the rod, or other indicator or detent desired to be used at the upper end to indicate which tub or tubs are draining or shut off.

The lower end of the housing is here shown extended as a pipe end externally threaded as at **31** to receive any desired drain pipe extension or trap connection as may be required, but manifestly this outlet connection may be of any form to meet any plumbing requirement.

At the upper end of the rod, just above the overflow ducts **10** a collar **32** is secured to the rod to receive the thrust of a coiled compression spring **33** which reacts at its upper end against a hub **34** of a plate **35** and which hub forms a bearing for the rod. Plate **35** is detachably secured (as by screws **38**) to a cap or anchor plate **36** cast in place or otherwise firmly or permanently secured to the upper edge of the tub partition wall and back wall if desired, and preferably formed with downwardly extending flanges **36'** embracing the outer sides of the walls and interlocking therewith as indicated at **37** so as to reinforce the cement structure at that point against any accidental sharp blow against the handle **13** which might tend to crack the cement.

The coils of spring **33** are preferably substantially closed when in operating position as shown in the drawing, to prevent valve **12** from being lifted from its seat to allow any grit to get between the valve and its seat, yet the valve is always resiliently urged downward to an even snug fit.

Driving collar **28** with its lugs **30, 30'** is of a size enabling it to be withdrawn upward with rod **11** after valve **12** has been removed from its lower end, and upper bearing plate **35** has been released from the cap plate **36** by removal of screws **38**, as the bearing plate **35**, spring **33**, collar **32**, and driving collar **28**, all come out with rod **11** and its handle **13** as a unit. This makes for simplicity in installing or removal of these parts.

Of course the working parts and the housing are all left off when the tube **7** and its attached bottom plate **4**, and cap plate **35** are cast in place during the manufacture of the tubs, and the various pipe and duct openings are greased and plugged with corks or wood to prevent the soft cement from entering.

Pointer **26** may cooperate with suitable marks or small ridges **39** on plate **35**, or a ball or detent as indicated at **40** may be used to click into suitably spaced depressions **41** in plate **35** to indicate the various positions of the valve setting with respect to the two tubs as previously explained.

Having thus described our improved drain valve for laundry tubs and the manner of its operation, what we claim is:

1. In a pair of laundry tubs separated by a dividing wall, a drain valve adjacent the bottom of the tubs, a separate drain duct from the bottom of each tub directed through said valve, and manually operated means located adjacent the top of the tubs for operating the valve, including a valve rod extending vertically from the valve within said dividing wall, and a handle secured to the upper end of the rod above said wall, a tube surrounding the valve rod positioned within the dividing wall, and a bottom plate secured to the lower end of the tube permanently secured into the bottom wall of the tubs, said bottom plate provided with drainage nipples opening at the inside of the tubs respectively, said valve when in place being positioned below said bottom plate, and a valve housing detachably secured to said bottom plate enclosing said valve forming a seat therefor and provided with drainage ducts extending from said nipples to said valve, and said housing also formed with a drain outlet connection from said valve.

2. In a pair of laundry tubs separated by a dividing wall formed integrally therewith, a tube vertically embedded within the substance of said wall and provided with overflow openings to both tubs, a plate permanently secured to the lower end of the tube extending laterally thereof at the underside of the tubs and provided with a pair of spaced drainage nipples extending through the bottom of the tubs respectively, the upper end of said tube extending to the top of said wall and both ends being open, discharge valve means secured to the underside of said plate formed to receive discharge from both said drainage nipples, and including a rotary valve for selectively shutting off the flow from said nipples, and a rod for operating said valve extending vertically through said tube provided with a handle above the top of said tubs.

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