Dec. 14, 1971 J. W. BAKER 3,626,519

STILTS

Filed Oct. 20, 1969

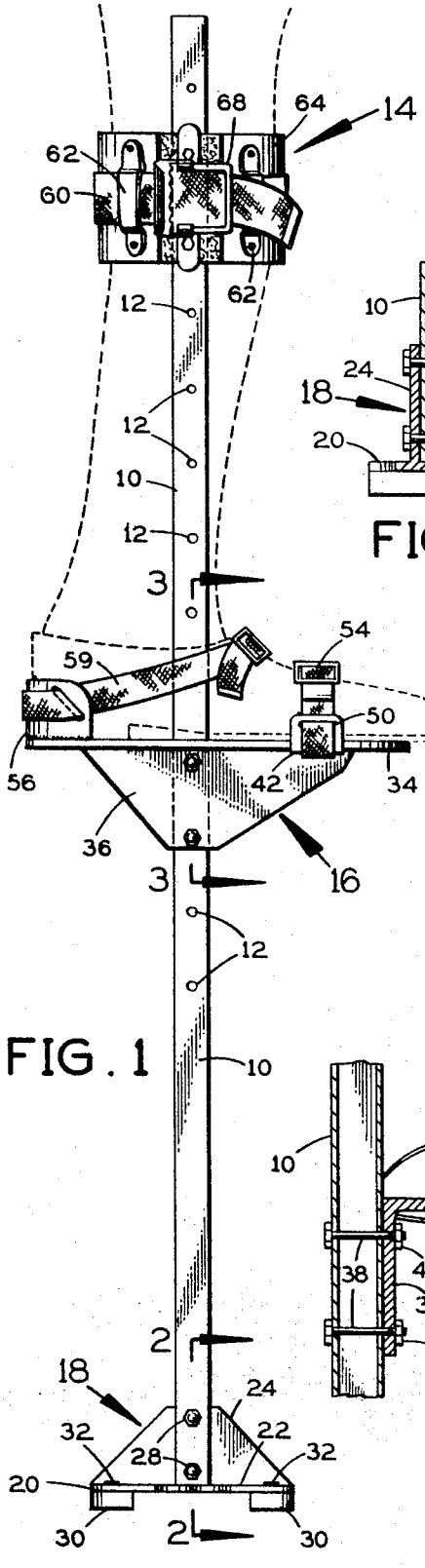


FIG. 1

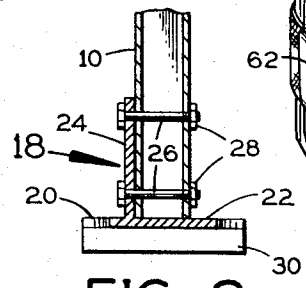


FIG. 2

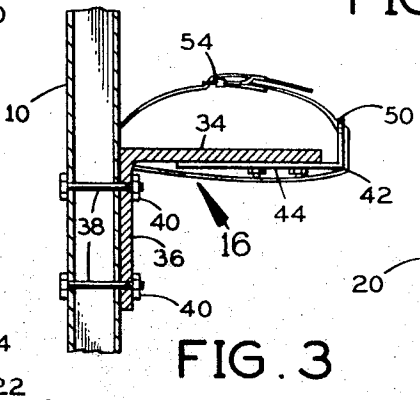


FIG. 3

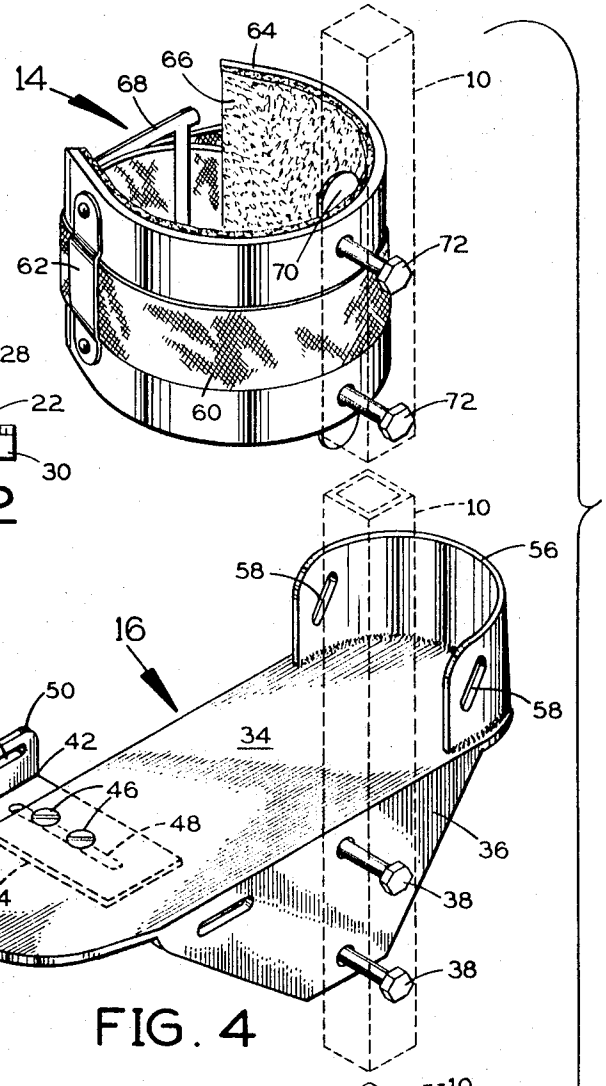
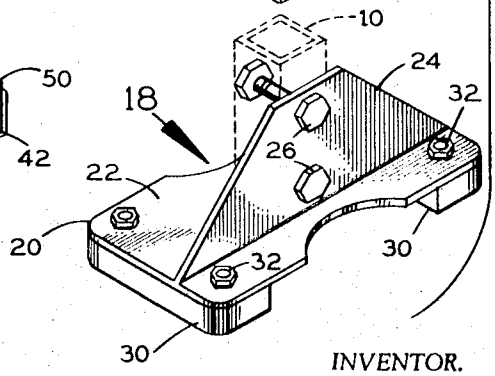


FIG. 4



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CONTROL TANK FOR A WATER CLOSET

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Int. Cl. E03d *1/36*

U.S. Cl. 4—41 10 Claims

ABSTRACT OF THE DISCLOSURE

Water closet supply tanks of the type embodying a float regulating the water supply, according as the level of water rises in said tank. Particularly, a control tank positioned within said tank, so as to encompass the float and ensure cutting off of the water supply, if the discharge valve remains open in the water tank.

CROSS-REFERENCES TO RELATED APPLICATIONS

A continuation-in-part of Control for a Water Closet, Ser. No. 885,554, filed Dec. 16, 1969.

The present application is directed to an improved control tank which can be utilized with any type of water closet, is filled directly by the water supply conduit, while eliminating the necessity for Y fittings. The control tank includes a modified discharge drain and ball cock seat.

BACKGROUND OF THE INVENTION

(1) Field of the invention

A great deal of attention has been directed to providing an inexpensive method of preventing continued running or wasting of water when a failure or breakage occurs in the water closet, such as the tank itself, the flush valve, flush valve seats, stand pipe or overflow pipe, the control handle and flush valve controls, including the chain and linkage. It is estimated that a single water closet, continuously filling and emptying, wastes water equivalent to the total water closet usage in twenty-five homes. This estimated total waste from one water closet is 4,320 gallons within a twenty-four hour period.

(2) Description of the prior art

Earlier inventors have attempted to solve the problem by developing float controls which are attached to the discharge valve in the water tank. Braswell (2,740,129) and Petrie (2,908,018) are typical in this respect. Such devices utilize a complicated mechanical linkage to attempt closing of the discharge valve upon malfunction, but do not necessarily ensure that the water supply being fed to the tank will cut off. The present invention, on the other hand, is directed to closing of the water supply valve, independently of the operation of the water tank discharge valve. As a result, the water filling valve is closed immediately, as the control tank senses a malfunction due to the discharge valve remaining open.

SUMMARY OF THE INVENTION

According to the present invention, a control tank is placed within the water tank in communication with the water supply conduit and encompasses a water tank control float connected to a feeding valve in the water supply conduit. The control tank includes a special discharge drain in its lower part, defining a control valve seat which encompasses the top of the discharge drain. A control valve is positioned above the seat and is connected through the seat to a polyethylene or similar float positioned beneath the seat. The control tank discharge drain is positioned above the level of the water tank discharge ball valve. As water enters the tank and the tank fills, water enters simultaneously through the discharge drain of the control tank, filling the control tank and thereby lifting the buoyant control float and ball cock. As the control float rises to the desired level, the water supply valve is cut off. If the water tank discharge drain remains open and water continues to be fed into the tank, the ball cock valve will fall onto its seat, closing the control tank. The closed control tank will then continue to be filled via the water supply conduit, enabling a rising of the water and the control float, so as to effect a precise cut off of the water supply, independently of the malfunction of the discharge drain.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevation of a water tank having the water control tank positioned apart from the water supply conduit;

FIG. 2 is an elevation of a similar water control tank positioned so as to encompass the water supply conduit;

FIG. 3 is an enlarged elevation of the water control tank showing positioning of the rubber control valve and polyethylene float with respect to the discharge opening; and

FIG. 4 is an enlarged, fragmentary elevation showing a modified form of ball cock valve.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 is a drawing of a water closet flush tank and operative parts with a water control tank depicted as tank **11**, float chamber and valve seat, control float and stem **13**, control valve **14**, refill Y fitting **4** and extension tube **3**. FIG. 2 depicts the ball cock or filling valve in the closed or off positioned and the water closet tank **1** in the filled stage. It should be noted that in this drawing the control float **13** has floated upward because of its being surrounded by water and has lifted the control valve **14** into a raised or open position allowing water to flow freely between the control tank **11** and the water closet flush tank **1** and, therefore, causing the ball cock float **10** to be in the upward position or off position for the ball cock. During a normal flushing operation, the control tank does not interfere with the normal operation of the ball cock and of the ball cock float **10**. In a normal flushing operation, the handle **7** moves the ball valve **15** to an upward position. As the water recedes from the water closet flush tank **1**, it also recedes from the control tank **11** passing through the float chamber and valve seat and finally through the ball valve opening seat **16**. This receding water level in the control tank **11** will allow the ball cock float **10** to fall to the lower level and activate or cause to engage the ball cock valve whereupon the ball cock discharge tube **17** will begin flooding the water closet flush tank **1** with water and at the same time will be supplying water through the refill tube into the stand pipe or overflow pipe **5** and, at the same time, supplying water through the Y fitting **4** and extension tube **3** which will refill control tank **11**.

When ball valve **15** is closed or seated, the water level will rise from the bottom of the water closet tank **1** and will cause the control float and stem **13** to lift the control valve **14**, creating an equal water level between the water closet flush tank **1** and the water valve control tank **11**, resulting finally in the raising of the ball cock float **10** to a level which will cut off or close the ball cock.

On the other hand, if the discharge drain remains open and the water flush tank is not being filled, the control valve **14** would fall onto its seat and the control tank **11** would be filled via conduit **3**, thus causing float **10** to rise and thereby shut off the water supply conduit.

with bolts **38** which extend through selected ones of the openings **12** and are secured in place with nuts **40**. The attachment plate section **36** butts up flat-wise against a flat face of the post **10** and therefore is also secured firmly in place. This positions the foot plate section **34** at a right angle to the post **10** so that a person can step on the foot plate section as shown in FIG. 1. The aluminum extrusion for the stirrup **16** is advantageous for the same reasons mentioned previously; that is, it is less costly and less time consuming to fabricate, and there are fewer chances for defects and less brittleness in the structure. The stirrup **16** also includes a cleat **42** which has one leg **44** secured to the foot plate section **34** with bolts **46** that are received in an elongated slot **48** in the leg **44** to permit adjustment of the position of the cleat **42**. The cleat **42** has an upwardly extending leg **50** with an opening **52** therein which receives a pull strap **54** with a buckle thereon for fastening the foot of the user to the foot plate section **34** in the manner shown in FIG. 1.

Also included in the stirrup **16** is a heel plate **56** that is welded to the rear portion of the foot plate section **34** and has slots or apertures **58** for receiving a strap **59** for encircling the foot of the user as shown in FIG. 1. The heel plate **56** is curved to conform to the heel of the user's foot, and both the heel plate **56** and the cleat **42** may be either extrusions or they may be cut from strip stock and bent to shape. Both of these items are preferably made of aluminum.

At the top of the post **10** is the legging **14**. The legging consists of a strap **60** passing through loops **62** on a leather binding **64** provided with a pile lining **66**, with the strap **60** having a buckle **68** for fastening it around the leg of a person as shown in FIG. 1. Inside the strap there is a metal strip **70** (FIG. 4) which reinforces the strap **60** and the binding **64**, and this strip **70** is attached to a post **10** along with the strap **60** and binding **64** by bolts **72** which pass through the post and also through the binding **64** and the strip **70**. Nuts are provided on the inner end of the bolts **72**. The legging **14** is on the same side of the post as the stirrup.

Both the legging and the stirrup may be moved to different positions merely by detaching the bolts **38** and **72** and moving them with the legging and stirrup to the different selected positions on the post **10** where the bolts can pass through selected ones of the holes **12**. The attachment of the stirrup and legging to the square post with straight bolts in the manner shown prevents twisting or turning of the legging and stirrup, and mounts them in a very secure fashion. Since the stirrup and the legging may be completely removed to readjust their positions, there is no problem of dirt getting into sliding collars or similar attachment devices and thus interfering with adjustment of the legging and stirrup. As previously mentioned, the extrusions for the stirrup and the foot are advantageous from a manufacturing standpoint both as to labor and time involved in manufacturing, and the extrusions are strong and durable.

Having thus described my invention, I claim:

1. A stilt comprising a rigid, unitary tubular post of squared section, a foot in the form of a unitary aluminum T extrusion secured to a bottom end of said post, said foot comprising a horizontal base plate section with a vertical plate section centrally thereof bolted to said bottom end of said post, a stirrup secured to said post in a position spaced above said foot, legging means secured to said post above said stirrup, said stirrup comprising a unitary aluminum angle extrusion having a foot plate section and an attachment plate section at a right angle to each other, said attachment plate section having bolt openings therein, said legging means having an attachment strip with bolt openings therein, said post having a series of bolt openings in pairs on opposite sides of said post spaced longitudinally thereof at which said stirrup and said legging means may be selectively positioned, bolts extending through selected pairs of said post openings and said attachment strip openings fastening said legging means to said post, bolts extending through selected pairs of said post openings and said stirrup openings and fastening said attachment plate section flatwise relative to one flat face of said post and projecting down from said foot plate section to thereby position said foot plate section at a right angle to said post in position to receive the foot of a user, said bolts being detachable to permit movement of said legging means and said stirrup to different positions whereby said bolts may be relocated in said stirrup openings, said attachment strip openings and different ones of said post openings to refasten said stirrup and said legging means to said post, said stirrup further including an L-shaped rigid cleat having one leg secured to said foot plate section and another leg projecting upward from said foot plate section with an aperture therein, a toe strap passing through said aperture for encircling the toe of a person, a curved heel plate welded to a rear portion of said foot plate section and upstanding therefrom, and a foot strap passing through apertures of said heel plate.

2. The stilt as claimed in claim **1** in which said one end of said post butts against said base plate section of said foot so that said base plate section bears the weight of the user.

3. The stilt as claimed in claim **1** in which said legging includes a metal strip bridging said bolts on inside of said strap to stiffen and reinforce said strap means where fastened by said bolts.

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272—70.1