

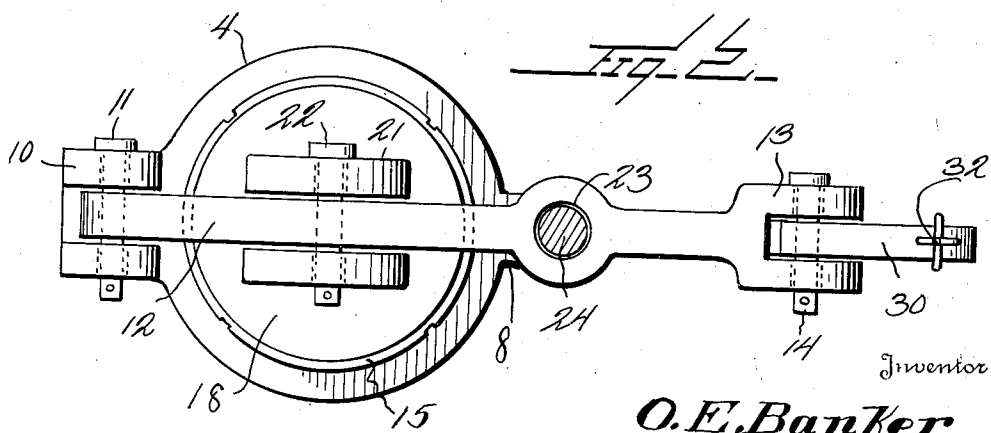
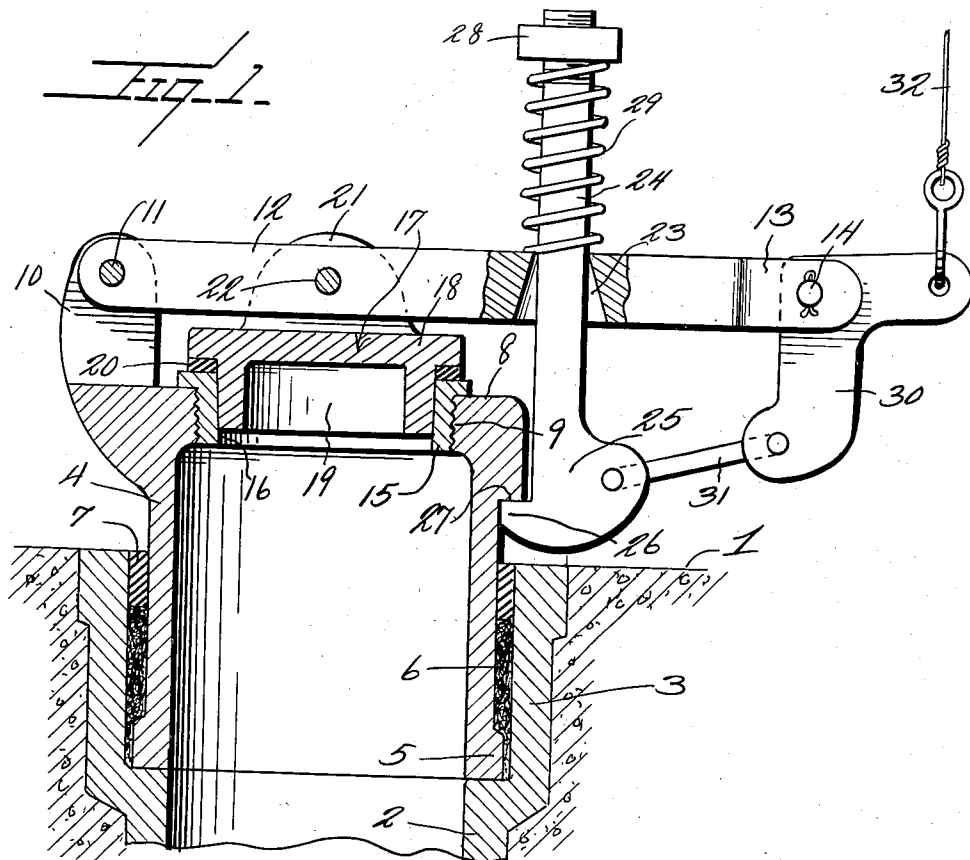
March 18, 1941.

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2,235,308

CELLAR DRAIN VALVE

Filed April 16, 1940



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2,235,308

CELLAR DRAIN VALVE

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Application April 16, 1940, Serial No. 329,951

4 Claims. (Cl. 137—139)

This invention relates to the class of valves and pertains particularly to a valve which is adapted to be quickly opened from a remote point.

The primary object of the present invention is to provide a novel type of valve which is designed to be placed in a cellar drain where such cellar is subjected to flooding so that when such flooding has occurred, the drain valve may be opened easily and quickly from a remote point to permit the fluid water to run off without requiring one to wade into the water to reach the valve.

Another object of the invention is to provide a valve of the character stated which is of simple construction so that it may be manufactured at small cost and at the same time to provide a valve which is durable and easily operated.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Fig. 1 illustrates the valve structure embodying the present invention in position in a drain pipe, and in vertical section with the drain pipe.

Fig. 2 is a view in top plan of the valve structure, the latch stem being in transverse section.

Referring now more particularly to the drawing, the numeral 1 designates a floor such as the floor of a cellar or other low room which may be subject to flooding. The numeral 2 designates the upper end of a drainage pipe which is embedded in the floor and which is flush at its top end with the floor surface, the said drain pipe being slightly enlarged at its top end, as indicated at 3, to receive a portion of the drain valve unit.

The valve structure embodying the present invention comprises a tubular or cylindrical body 4, the lower end of which is flanged, as indicated at 5, and is designed to be extended into the enlarged upper end 3 of the drain pipe. The body is secured in position by packing material 6 and a suitable packing ring 7 which is inserted between the body and the portion 3 of the drain pipe as illustrated.

The body 4 is disposed vertically in the end of the drain pipe, as shown, and the upper end of the body is of reduced interior diameter, as indicated at 8, and interiorly threaded, as at 9. Extending upwardly from the upper end of the body is a pair of spaced bearing ears 10 between which extends a pivot pin 11. The pivot pin passes through and supports an end of a valve shifting arm 12 which extends at its opposite end a substantial distance beyond the body 4 from the ears 10, as shown, and terminates in the bifurcation 13 between which furcations extends a pivot pin 14.

Threaded into the upper end of the body is a valve seat ring 15, the inner or seat surface 16 of which is slightly tapered, as shown.

The numeral 17 designates the valve plug which has the flat top portion 18 and the exteriorly tapered cylindrical portion 19 which is adapted to be extended into the ring 15 to engage against the seat 16. The circular portion 19 of the plug is inset from the periphery of the top 18 leaving a shoulder against which a gasket 20 is secured to be pressed against the top of the ring 15 when the plug is seated.

The top of the plug 17 carries a pair of spaced ears 21 between which the arm 12 passes and the arm is pivotally coupled to the valve plug ears by the pivot pin 22. Between the pivotal connection of the arm with the valve plug and the bifurcated end of the arm, the arm is provided with a guide aperture 23 which increases in diameter from its upper to its lower end, as shown in Fig. 1, and extending through this aperture 23 is a latching pin 24, the lower end of which is formed to provide a head 25 having a hook bill 26. The top of the body 4 is formed to provide a lip 27 beneath which the bill of the hook engages when the arm is disposed horizontally across the upper end of the body with the valve plug seated. The upper end of the latch pin 24 carries a nut 28 and between this nut and the arm is an expansion spring 29 which normally tends to force the arm and the bill of the hook together.

Supported upon the pin 14 is a bell crank 30, one arm of which hangs downwardly from the arm 12 when the valve is closed, and is connected by a link 31 with the head 25 of the latch pin. The other arm of the bell crank has a pull wire or cord 32 coupled therewith by means of which the bell crank may be actuated from a remote point to facilitate the opening of the valve.

It will be seen from the foregoing that when the valve is closed and the plug 17 is seated within the ring 15, the bill of the latch will be engaged under the lip of the valve body and the spring 29, tending to force the arm 12 and the latch bill together, will maintain the plug firmly seated.

When the valve is opened, the plug 17 is moved upwardly out of the ring 15, the arm 12 is moved downwardly by the bell crank 30 and the link 31, and the spring 29, tending to force the arm 12 and the latch bill together, will maintain the plug firmly seated.

seated. When the valve is to be opened, a pull upon the cord 32 will effect the oscillation of the latch pin 24 so as to disengage the bill from the lip 27, and when this disengagement occurs, the spring 29 being suddenly released will pull the latch hook away from the lip and permit the arm to be freely raised so as to remove the plug 17 from its seat, thus opening the valve.

What is claimed is:

1. A valve of the character described, comprising a body formed to permit fluid to pass therethrough and having an open end, means forming a valve seat at said open end, a valve disposed upon said seat, an arm pivotally coupled at one end to the body and extending across and having pivotal connection with said valve, a latch having a long shank extending through an opening in the arm for reciprocal and swinging movement relative thereto, a hook at an end of the shank, the body having a lip engageable by said hook, a spring surrounding the shank and bearing on the arm and attached at one end to the other end of the shank to maintain the valve on its seat when the hook is in engagement with said lip, and means carried by the arm and connected with the latch facilitating the disengagement of the hook from the lip.

2. A valve structure, comprising a body formed to pass fluid therethrough and having an outlet end, a valve seat at said end, a valve disposed upon said seat, an arm pivotally attached to the body and extending across and having pivotal engagement with the valve, said arm having a guide aperture therethrough and terminating at its other end in a bifurcation, a latch pin extending through said aperture and terminating at one end in a hook, the body having a lip with which the hook engages, an expansion spring carried by the latch pin upon the side of the arm opposite from the hook and bearing upon the arm and having connection with the pin, a crank member pivotally supported in said bifurcation, a link operatively coupling the crank member with the hook end of said latch pin, and a flexible member operatively coupled with said crank for effecting the oscillation of the same from a remote point.

3. A valve of the character described, comprising a body having two open ends, a valve seat at one of said ends, a valve adapted to position upon said seat, an arm pivotally coupled at one end to the body and extending across and having pivotal connection with said valve, the arm extending transversely of the end of the body when the valve is on its seat, said body having a lip upon the side opposite from the pivotally coupled end of the arm, the arm having an aperture therethrough which is vertically extended when the arm is in valve closed position, the aperture being of gradually increasing diameter from the upper to the lower end, a hook member having a relatively long shank extending through said aperture and a bill upon one end adapted to engage said lip, an expansion spring encircling the hook shank and engaging the arm upon the upper side thereof and remote from the bill and having its other end connected with the end of the shank remote from the bill, said spring being under compression when the hook bill is in engagement with said lip and said tapering aperture facilitating the oscillation of the hook shank for relative movement between the bill and the lip.

4. A valve of the character described, comprising a body formed to permit fluid to pass therethrough and having an open end, means forming a valve seat at said open end, a valve disposed upon said seat, an arm pivotally coupled at one end to the body and extending across and having pivotal connection with said valve, a latch having a shank freely extended through and opening in the arm for reciprocable and swinging movement relative thereto, a hook at one end of the shank, the body having a lip engageable by said hook, a spring interposed between the arm and an end of the latch shank and tending to move the shank longitudinally in a direction to maintain the valve on its seat when the hook is in engagement with said lip, a member oscillatably mounted upon the arm upon the side of said latch remote from the valve, means connected with the chamber for effecting its oscillation, and a link coupling said member with said latch.

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