

No. 713,935.

Patented Nov. 18, 1902.

W. R. ARNOLD.
VENT HOLE CLOSURE.

(Application filed Mar. 12, 1902.)

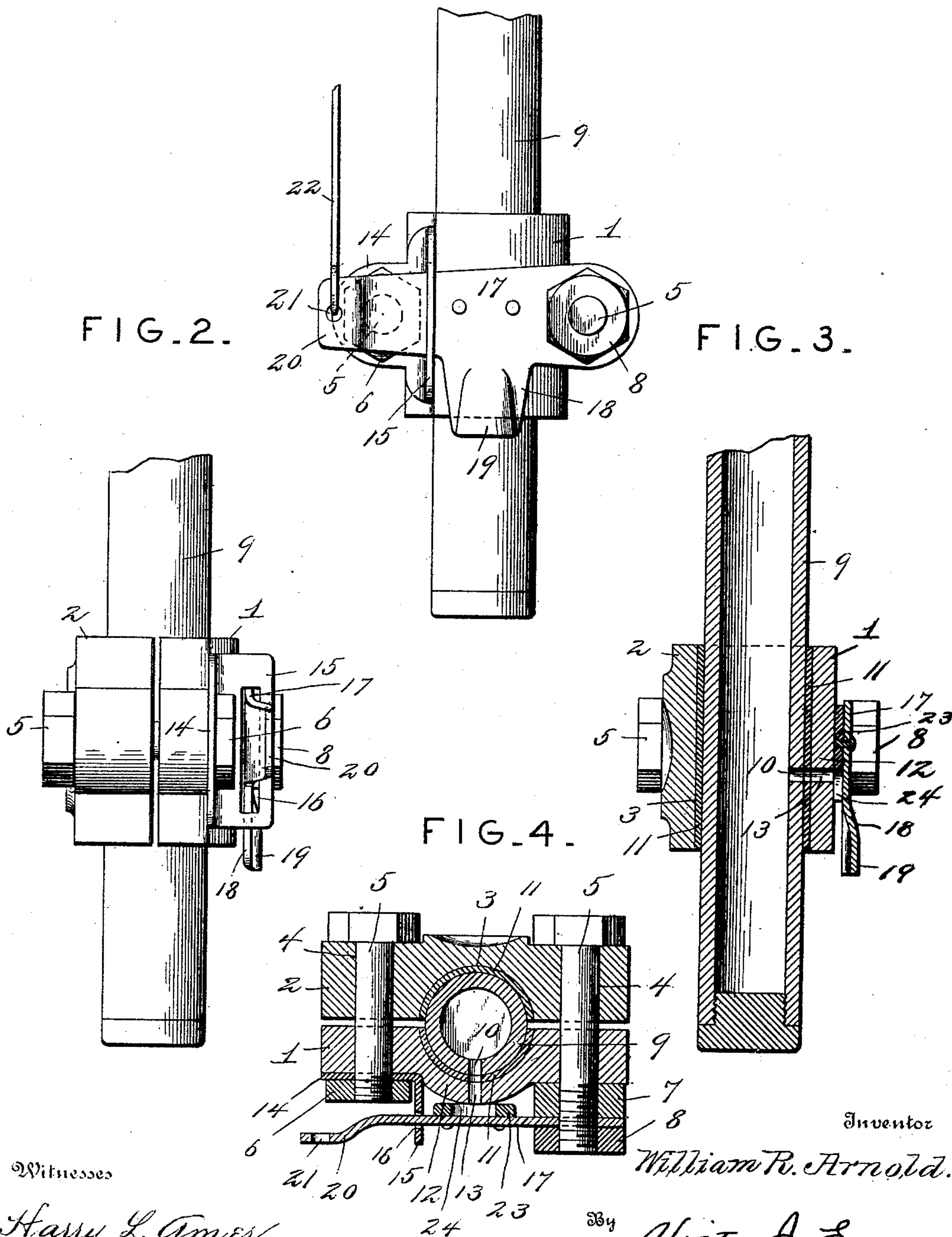
(No Model.)

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.



Witnesses

Harry L. Amer.
Chas. S. Hoyer.

Inventor

William R. Arnold.

By

Victor J. Evans.
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM R. ARNOLD, OF SAWYER, NEBRASKA.

VENT-HOLE CLOSURE.

SPECIFICATION forming part of Letters Patent No. 713,935, dated November 18, 1902.

Application filed March 12, 1902. Serial No. 97,925. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. ARNOLD, a citizen of the United States, residing at Sawyer, in the county of Fillmore and State of Nebraska, have invented certain new and useful Improvements in Vent-Hole Closures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a vent-hole closer for pumps and the like; and the primary object of the same is to provide a simple and effective organization of devices adapted to be attached to a pump or other pipe and operated from the top of a well or cistern at a distance from the point of attachment of the closer to open and close the vent in the pipe, so as to allow the water to run out of the pipe into the well, cistern, or other receptacle and obviate freezing.

A further object of the invention is the provision of means for the purpose set forth which are adapted to be easily and quickly applied in operative position and embodying features of construction which tend to render the operation desired effective.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is an elevation of a portion of a pump or other pipe, showing the improved device applied thereto. Fig. 2 is an elevation of the parts shown by Fig. 1, taken in a plane at right angles to the position of said parts, as shown by Fig. 1. Fig. 3 is a transverse vertical section through the pipe and the improved device or attachment. Fig. 4 is a horizontal section through the pipe and improved device or attachment.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numerals 1 and 2 designate metallic clip members or blocks, each of which has a semicircular recess 3 at the center of the inner side thereof and both formed with apertures 4, extending transversely through the opposite terminals to receive clamping-bolts

5. Said clamping-bolts 5 are headed at one end and screw-threaded at the other, and the one bolt is longer than the other. The shorter clamping-bolt is engaged by a single nut 6 and the longer bolt by two nuts 7 and 8, and both bolts serve to firmly clamp the clips or blocks 1 and 2 in adjusted position in relation to the pipe 9, which may be a part of a pump or other water-conveying conduit and provided with a vent hole or opening 10, leather or other suitable packings 11 being placed in the recesses 3 to insure a stable or firm binding of the clips or blocks on the pipe.

At the center of the outer side of the clip or block 1 an enlargement 12 is formed and projects outwardly in a convex plane, and through the center of said enlargement is an opening 13, which coincides or alines with the vent-opening in the pipe 9, the packing 11 at the same point being formed with a corresponding opening, so as to produce an outlet. The nut engaging the shorter bolt 5 also holds in place an angular keeper 14, having a forwardly-projecting member 15 with an elongated vertical slot 16 therein. Between the nuts 7 and 8 and freely movable on the terminal of the longer bolt 5 engaged by said nut is one end of a shut-off or pivoted valve 17, having a depending guard 18, which is centrally outstruck, as at 19. The free extremity of the shut-off or pivoted valve 17 extends through the slot 16 in the member 15 of the keeper, the width of the said extremity of the valve and the length of the slot being so proportioned that the valve may be raised and lowered to carry out the operation desired. The end of the shut-off or valve opposite that engaging the longer bolt is bent outwardly, as at 20, for clearance purposes and has an aperture 21, to which a pull or other rod 22 is attached for controlling the open and closed positions of the shut-off or valve at a distance from the point of application of the improved attachment as an entirety. The part of the shut-off or valve which extends across the outlet formed by the openings 10 and 13 and that in the front packing has a gasket 23, securely attached thereto and preferably formed of rubber, and the purpose of this gasket is to bear against

the projection 12 around the opening 13 and shut off or prevent the flow of water from the pipe 9. The lower central portion of the gasket 23 is cut away or formed with a slot 24, and when the shut-off or pivoted valve 17 is elevated this slot coincides with the opening 13, thereby permitting the water to flow out of the pipe and be deflected downwardly into the well, cistern, or other receptacle, in accordance with the application of the improved device, by striking against the depending guard 18, and thereby avoid inconvenient spurting, the outstruck central portion 19 of the guard providing a clearance for the downward flow of the water. When the shut-off or pivoted valve is pushed downwardly, the solid part of the gasket closes the opening 13, and hence the water will be prevented from running out of the pipe.

As before indicated, the improved device may be used generally in connection with pipes; but it is particularly adapted for use on well or cistern pipes or tubes to overcome freezing tendencies. The nuts 7 and 8, in connection with the longer bolt 5, provide means for pivoting the shut-off or valve 17, and the degree of pressure of the gasket against the convex projection 12 may be easily regulated through the medium of the nut 8. Moreover, it will be seen that the clamping effect of the longer bolt 5 is not in the least impaired by the application of the shut-off or pivoted valve thereto, in view of the fact that the nut 7 is not disturbed in its securing function.

In view of the simplicity of the device, it can be easily applied in operative position and moved from one place to another or taken from one pipe and applied to another, and though the preferred form of the device has been shown it will be understood that changes in the proportions, dimensions, and minor

details may be resorted to without in the least departing from the principle of the invention.

Having thus fully described the invention, what is claimed as new is—

1. In a device of the class set forth, the combination with a pipe having a vent, of clips secured to the pipe by bolts passing through the opposite extremities thereof, the one bolt being longer than the other and having its screw-threaded terminal projected forwardly, a pair of nuts mounted on the said projected terminal of the longer bolt, and a shut-off valve pivotally mounted on the said projected terminal of the longer bolt and held between the two nuts, the said valve having movement in front of the vent, the adjacent clip provided with an opening registering with said vent.

2. In a device of the class set forth, the combination with a pipe having a vent, of clips applied to the pipe, the one clip being formed with a convex projection at the center having a vent therethrough registering with the vent in the pipe, bolts passed through the extremities of the clips, a keeper held by one of the bolts, a valve pivotally supported by the other bolt and movably projected through the keeper, said valve being movable vertically in a plane parallel with the pipe to open and close the vents, the valve having an annular gasket on its rear face bearing closely against said convex projection and also having a depending centrally outstruck guard to provide a clearance for the downward flow of the water, and means for operating the valve.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM R. ARNOLD.

Witnesses:

E. J. BARBUR,
F. SKIPTON.