No. 620,588. Patented Mar. 7, 1899.

J. J. HOPPES.

METER BOX OR CASE.

(Application filed Feb. 16, 1898.)

(No Model.)

Fig. 1

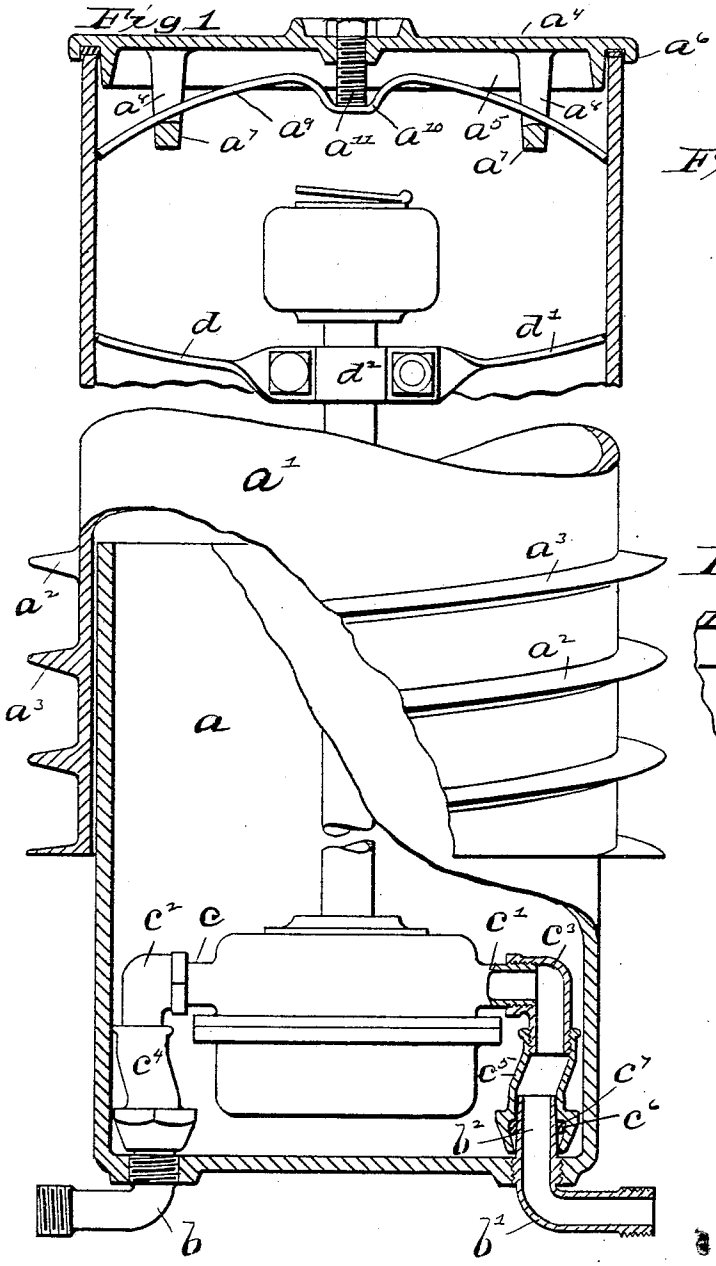


Fig. 2

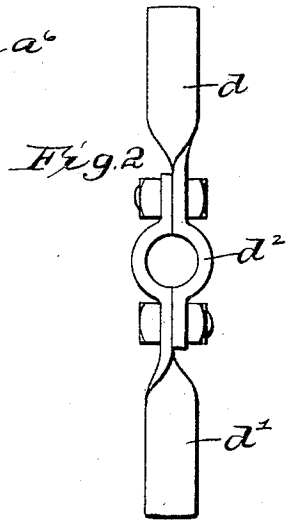


Fig. 3

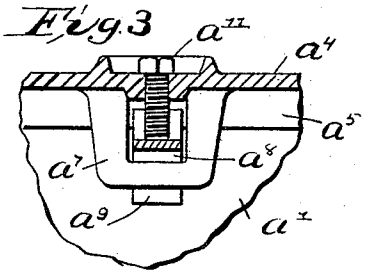
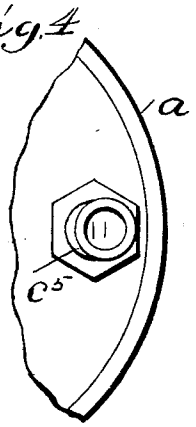


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN J. HOPPES, OF SPRINGFIELD, OHIO.

METER BOX OR CASE.

SPECIFICATION forming part of Letters Patent No. 620,588, dated March 7, 1899.

Application filed February 16, 1898. Serial No. 670,473. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HOPPES, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Meter Boxes or Cases, of which the following is a specification.

My invention relates to improvements in boxes or casings for water-meters and similar devices; and the object of my invention is to provide a suitable receptacle adapted to be placed in the ground below the freezing-line and inclose the meter or other device, the construction being such that access may be had to the interior of the casing and the meter readily removed or replaced in said receptacle while the same is in the ground, the construction also being such that meters having varying distances between their inlet and outlet openings may be used in the same casing.

A further object of my invention is to provide a novel construction to form an anchor for the casing and also means whereby the casing while in the ground may be lengthened or shortened, so that the top thereof may be kept in the proper relative position to the surface of the ground.

I attain these objects by the construction shown in the accompanying drawings, in which—

Figure 1 is a partial vertical sectional view of a device embodying my invention, with some of the parts broken away. Figs. 2, 3, and 4 are detail views of parts of my device, which will be hereinafter described.

Like parts are represented by similar letters of reference in the several views.

In the said drawings the outer casing of my device is formed in two parts a and a', a being the lower part of the casing, which may be of cast-iron of plain cylindrical form. It is provided with a bottom plate, which is preferably cast integral with the sides. This bottom is provided with openings for an inlet-pipe b and an outlet-pipe b'. These pipes pass through the openings and are secured therein in any suitable manner and are formed on their inner ends with nipples or nozzles b^2, preferably tapered on their outer peripheries. The nipples extend into the box in planes parallel with the axis of said box. The upper part a' of the box is also preferably of cast-iron and of plain cylindrical form, except its lower part, which is formed with projecting flanges a^2 a^3 in the nature of a screw on its outer periphery. The inner periphery is smooth and of slightly-larger diameter than the outer periphery of the lower part a and adapted to fit over the lower part to form a continuous telescoping box.

The box is provided with a suitable cover a^4, formed with an inner depending flange a^5 and an outer depending flange a^6. Between these flanges a flexible washer is secured, which is adapted to rest on the sides of the box at the top. The cover is formed with depending ears a^7, having openings a^8 therein. Through these openings a flat steel bar a^9, formed in the nature of a spring, is adapted to pass. This bar is longer than the diameter of the box and is preferably bow-shaped, with a depression at its middle, as shown at a^{10}. The cover at its center has a screw-threaded opening through which a screw a^{11} is adapted to pass. This screw is adapted to bear on said spring in the bottom of its depression and with the guides or ears a^7 forms means for forcing the ends thereof outwardly against the sides of the casing, for it will be seen that by tightening the screw the bar or spring will be slightly straightened and the ends passed outwardly. It will be seen that by thus passing outwardly the ends of the bar, which are cut at right angles to its length, the bar will impinge with the sides of the box, and thus form a lock for the cover.

The meter may be of any ordinary construction, as shown in Fig. 1. It is, however, provided with extended inlet and outlet openings c and c'. To these extensions or spuds are secured downwardly-projecting pipes or elbows c^2 and c^3, which are screw-threaded on their outer peripheries at their lower ends. Connecting these elbows to the nipples b^2 are offset couplers c^4 and c^5. These couplers are provided with slip connections adapted when the couplers are in place over the nipples to form tight connections between the inlet and outlet pipes b and b' and the meter. I construct the couplers with offset portions or with the openings in the respective ends in different parallel planes and with the axis of the intervening portion lying in a plane at an angle to the parallel planes. The lower por-

tion is provided with an annular groove c^6, having a packing-ring c^7, of rubber or other suitable material, fitted therein and adapted to fit snugly around the nipples to form a perfectly tight joint. From this offset construction it will be seen that if the elbows c^2 and c^3 are not exactly in line with the nipples the connection between them may easily be made by turning the couplers on the elbows until the lower openings are in line with the nipples. When this is accomplished, the meter may be lowered into position and the connection before spoken of completed by the slip connection.

The meter will be preferably provided with an extension at the top from its body to the dial-plate in a well-known manner, so that the dial is carried to a point at or near the top of the casing. This extension is held in an upright position by means of a suitable support. I preferably form this support of two flat steel bars d and d', which are twisted near their inner ends at right angles to their body portions. Adjacent to the inner ends they are bent to form a semicircle, and when secured together in position they form a collar d^2, as shown in Fig. 2. This collar is adapted to be placed around the extension from the meter, and when placed within the box the outer ends of the bars are adapted to impinge with the sides of the box, thus holding the extension rigidly in position. From this construction it will be seen that by loosening the screw a^{11} the cover may be easily removed and the reading of the meter obtained at any time, and by pulling up on the sides of the cross-support formed of the pieces d and d' the meter itself may be lifted out of the box or placed therein at any desired time for repairing or otherwise, the supply-opening being of course provided with the customary stop-cock for this purpose. It will be seen, further, that by the use of the peripheral screw-shaped flanges on the outside of the upper part of the casing the casing may be readily adjusted to the proper position with reference to the top of the ground before it is finally and firmly set. The lower part of the box will be placed in ground first and the earth filled in for a portion of the way. The upper part of the casing will then be placed over the lower part and the earth further filled in. By turning the upper part of the casing it will, through the agency of the screw-threaded flanges, be raised or lowered to suit the surface of the ground, and when finally embedded firmly in the ground these flanges will anchor the upper part of the casing firmly. At the same time the upper part of the casing may be free to move slightly by the freezing and thawing of the surface of the ground without in any way interfering with the lower part of the casing where the meter or other device is placed. It will be seen, further, that by the use of the adjustable couplers, having their respective ends offset or in different parallel planes, means are provided by which the couplers may be adjusted to meters of different sizes within certain limits, so that meters having outlet and inlet openings at varying distances apart may be employed in the same sized casing, and when once adjusted they can be readily removed or replaced without any further adjustment.

Having thus described my invention, I claim—

1. The combination with an outer casing, of inlet and outlet pipes extending into said casing and terminating in parallel nipples having plain peripheries, a meter with its connection and couplers having offset portions as described, adapted to fit over said nipples, substantially as specified.

2. The combination with an outer casing, of a cover for said casing having depending loops extending downwardly from its bottom, a curved bar longer than the diameter of the casing yieldingly held in said depending loops and a screw in said cover adapted to press on said bar to cause the ends thereof to impinge with the sides of the casing, substantially as specified.

3. The combination with an outer box or casing formed of two parts, one part adapted to telescope on the other and having spiral flanges formed on the outer periphery of the upper part, of an inlet and an outlet pipe extending through and into said casing said pipes having plain parallel ends slightly tapered to form nipples, couplers each having their respective ends in different parallel planes and yielding packing-rings within said couplers adapted to fit over said nipples, substantially as specified.

4. An outer telescoping casing having pipes which terminate therein in projecting parallel nipples, in combination with a meter having downwardly-projecting sleeves secured thereto, offset couplers forming adjustable connections between said nipples and the sleeves of said meter, and a removable dial-support adapted to be held in place by the impingement of its ends with the sides of said casing, substantially as specified.

5. The combination with a box or casing, of a cover for said casing, depending loops extending from said cover, a bar longer than the diameter of the casing and bow-shaped with depressions at its center and adapted to be held yieldingly by said depending loops, a screw in said cover adapted to press on said bar to cause the ends thereof to contact with the sides of the casing.

6. The combination with a case or support having an outlet and inlet pipe extending from the bottom thereof, a meter having outlet and inlet openings and two-part adjustable couplers forming connections between the outlet and inlet openings in said support, and the corresponding openings in said meter, said couplers having offset portions to form adjustable connecting devices, substantially as specified.

7. The combination with a meter casing or

support having outlet and inlet pipes, coupling devices having slip connections adapted to be joined to or detached from said outlet and inlet pipes, said coupling device having offset portions to form adjustable connections with said outlet and inlet pipes, substantially as specified.

8. The combination with a meter box or support having outlet and inlet pipes, of coupling devices, substantially as described, adapted to be connected with said outlet and inlet pipes and constructed at the respective ends thereof so as to be further adapted to be movable on said pipes and by such movement to adjust the opposite ends thereof to a greater or less distance apart, substantially as and for the purpose specified.

9. The combination with a box or casing, a meter, an extension for the dial-plate extending upwardly from the body of said meter, a support impinging the sides of said casing and adapted to prevent any upward or lateral movement of said extension and meter.

In testimony whereof I have hereunto set my hand this 11th day of February, A. D. 1898.

JOHN J. HOPPES.

Witnesses:

CHAS. I. WELCH,

EARL G. WELCH.