Jan. 2, 1923.

1,440,817.

J. W. CALHOUN.

BOTTOM FOR WATER METERS.

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Fig. 1.

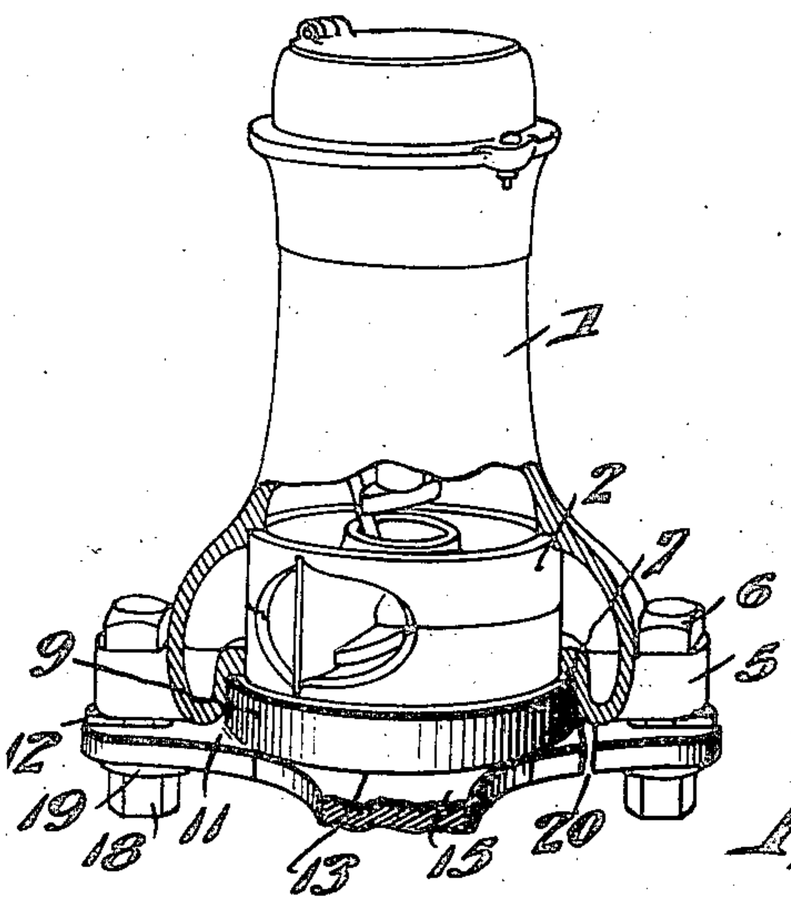


Fig. 2.

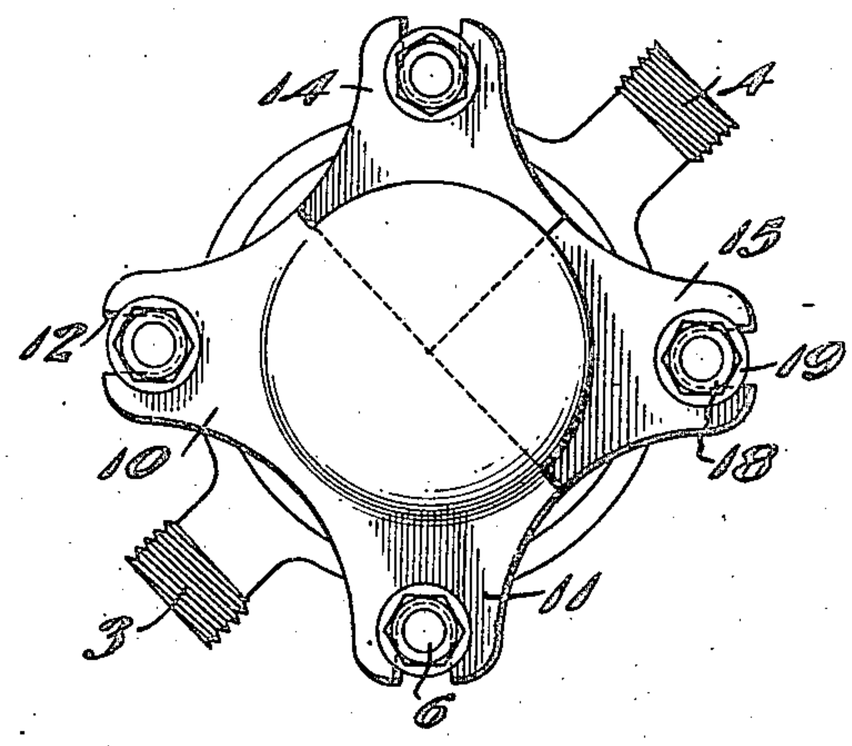


Fig. 3.

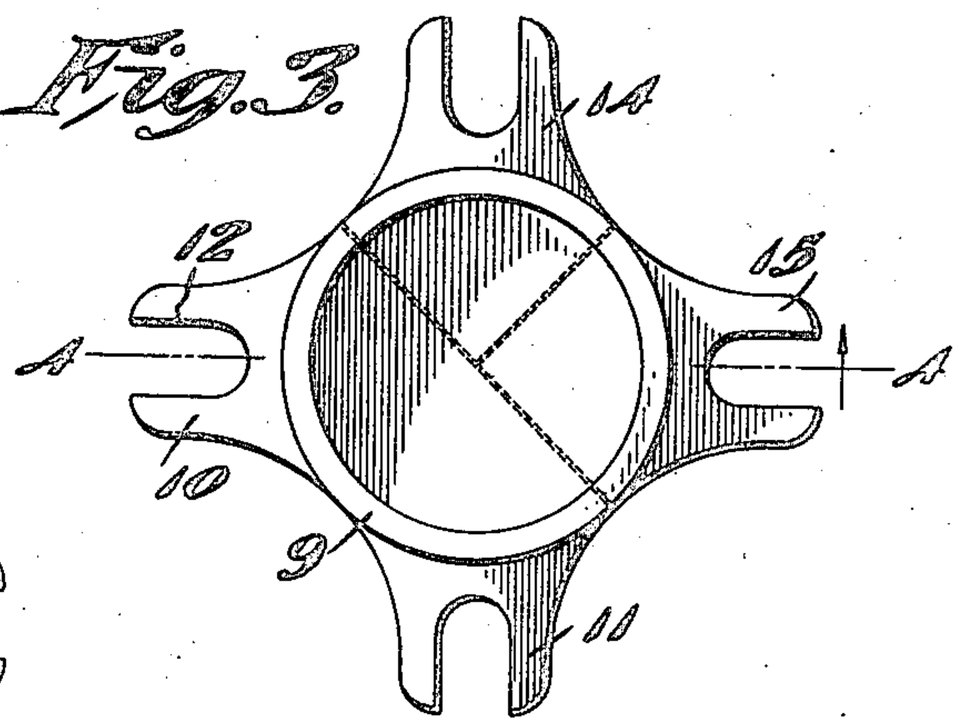


Fig. 5.

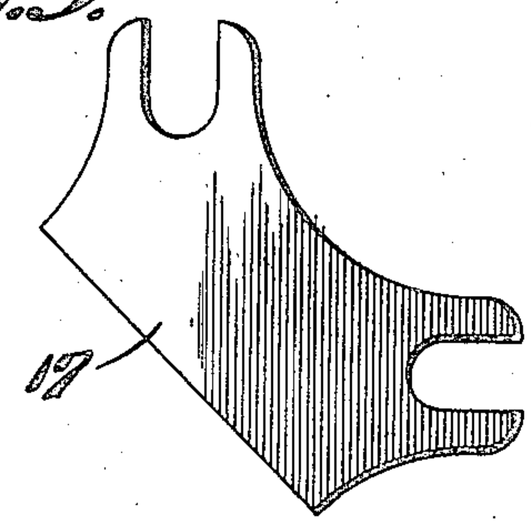


Fig. 4.

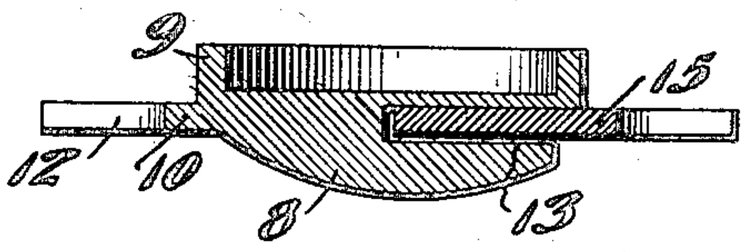
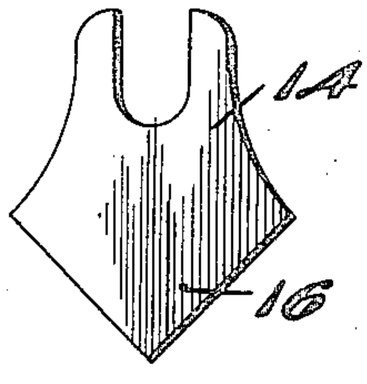


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN W. CALHOUN, OF CHESTER, PENNSYLVANIA.

BOTTOM FOR WATER METERS.

Application filed March 4, 1922. Serial No. 541,238.

To all whom it may concern:

Be it known that I, JOHN W. CALHOUN, of Chester, in the county of Delaware and State of Pennsylvania, citizen of the United States, have invented certain new and useful Improvements in Bottoms for Water Meters, of which the following is a specification.

My present invention relates to bottoms for water meters, and particularly to a structure adapted for use in conjunction with meters installed in cold climates or used in other connections where there is possibility of freezing.

An object of this invention is to provide a bottom closure for water meters which is so constructed that should the meter freeze and the pressure thus become excessive within the casing securing portions of the bottom will break to relieve the pressure and permit further expansion without injury to the case or working parts.

A further object resides in so constructing the breakable portions of the bottom that the main portion of the bottom is not affected and only readily replaceable frangible portions will be broken, thus permitting repair and replacement at normal expense and with minimum labor.

A still further object lies in providing a main portion of the bottom which is of bronze or other metal capable of being finished and machined to provide the proper seat, and which will be non-corrosive; and, in forming the frangible portions of cast iron or like metal which is readily breakable under the pressure of freezing and which can be replaced at almost negligible cost as compared with the cost of an entire new body.

With these and other objects in view, which will be apparent from the drawings, specification and claims, this invention includes certain novel features of construction and combinations of parts which will now be set forth.

In the drawings:

Figure 1 is a view in perspective of a meter with parts in section to show my improvement applied thereto.

Fig. 2 is a view in elevation of the lower end of the meter illustrating my improved meter bottom fitted thereon.

Fig. 3 is a top plan of the meter bottom with the frangible portions in place.

Fig. 4 is a sectional view on line 4—4 of Fig. 3.

Fig. 5 is a detail showing a slightly modified construction of the frangible portion.

Fig. 6 discloses one of the frangible portions as shown fitted in the body portion.

The meter casing 1 can be of any desired form, and the working parts, generally indicated at 2, are of any approved type. The casing 1 has the two connecting nipples 3 and 4, and the bolt ears 5 are provided adjacent the bottom of the casing and are bored to receive the clamping bolts 6. The casing has a machined seat 7 around its open lower end.

My improved meter bottom comprises a body member 8 which has a flange 9 on its upper or inner face. This body is made of bronze, cast iron, or other suitable metal and the flange 9 is machined and finished to fit the seat 7. The body 8 is thickened in its middle portion and has the bolt receiving lugs or ears 10 and 11 formed integral with and extending radially therefrom, these lugs or ears being spaced and being provided with openings 12 to receive adjacent clamping bolts 6.

At its opposite side the thickened body 8 has a slot or groove 13 formed to extend inwardly substantially to a medial line, this slot or groove being in a plane with the lugs or ears 10 and 11. The bolt lugs or ears 14 and 15, made of cast iron or other suitable frangible material, are provided with extensions 16 to be received in the notch or groove 13 so that the frangible lugs or ears are removably and replaceably associated with the body portion to lie in the same plane with the integral lugs 10 and 11 and to be substantially opposite these lugs.

The two frangible lugs 14 and 15 might be made as a single member 17, as illustrated in Fig. 5, and a greater or lesser number of lugs or ears might be provided to extend radially from the body 8, the essential point being that the lugs on the body must be disposed in such relation that the clamping bolts fitted therethrough can not clamp the meter bottom immovably in place.

In the use of my improved structure the meter bottom is fitted with the flange 9 in the seat 7 of the casing 1 and is adjusted to bring the openings of the several lugs or ears 10, 11, 14 and 15 into registry with the openings of the ears 5 on the casing. Clamp

bolts 6 are then fitted through the registering openings and clamp nuts 18 are tightened against washers 19 fitted over the clamp bolts 6 and against the lugs of the meter bottom. The bottom is thus clamped in place and forms an efficient closure for the bottom of the casing. In freezing weather the water within the meter will freeze and the pressure within the casing is exerted upon the various lugs 10, 11, 14 and 15 by which the bottom 8 is clamped in place. Before the pressure becomes sufficient to damage the casing or the working parts the lugs 14 and 15 will snap or break across as indicated at 20 in Fig. 1, and in this way damage to or straining of the casing or working parts is precluded. The body 8 and the lugs 10 and 11 are uninjured, and new frangible lugs can be fitted to replace those which have been broken, without disconnecting the meter from the line or otherwise disturbing or disarranging the parts.

While, in the foregoing, I have described specific embodiments, and have mentioned only certain possible modifications it will be appreciated that in practice I do not limit myself to such specific details as herein set forth, but may resort to any practical modifications falling within the scope of the invention as defined in the appended claims.

I claim:

1. A bottom for water meters having frangible replaceable lugs extending from the body thereof by which the bottom is held in place.

2. A bottom for water meters comprising a body portion and replaceable frangible lugs extending from the body, by which the bottom is held in place.

3. A bottom for water meter casings to prevent damage from freezing comprising with a body portion fitted to close the casing, a frangible lug extending from the body portion forming a part of the retaining means for the bottom and adapted to break under freezing pressure.

4. A bottom for water meter casings to prevent damage from freezing comprising, with a body portion fitted to close the casing and having clamping lugs integral therewith, other clamping lugs of frangible material extending from and replaceably associated with the body and adapted to break under freezing pressure.

5. A bottom for water meter casings adapted to prevent damage from freezing comprising, with a thickened body fitted to close the casing and provided with clamping lugs, said body having a notch or groove therein in the plane with the clamping lugs, frangible clamping lugs replaceably fitted in the notch or groove.

In testimony whereof I hereunto affix my signature.

JOHN W. CALHOUN.