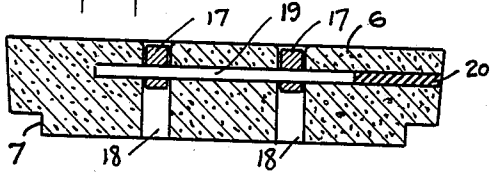
Oct. 8, 1940. F. M. BROOKS 2,217,097

METER BOX COVER

Filed July 6, 1937

Fig. 4



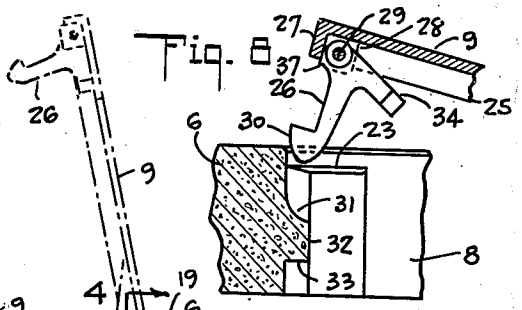


Fig. 1

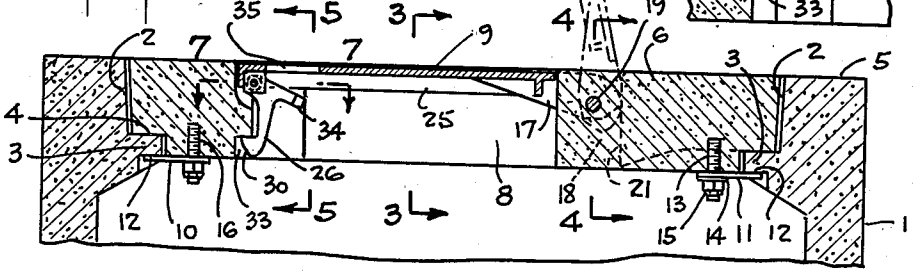


Fig. 2

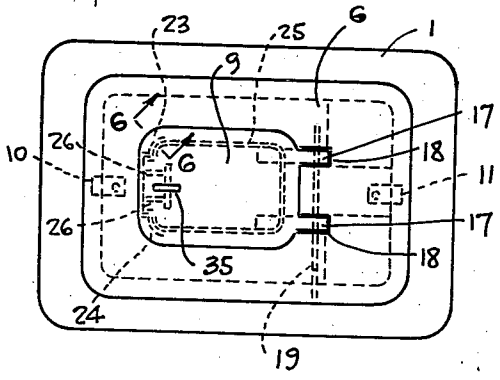


Fig. 3

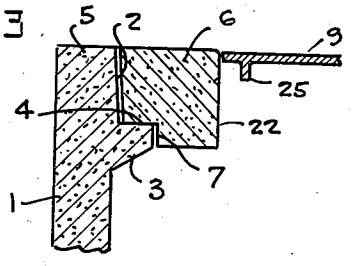


Fig. 5

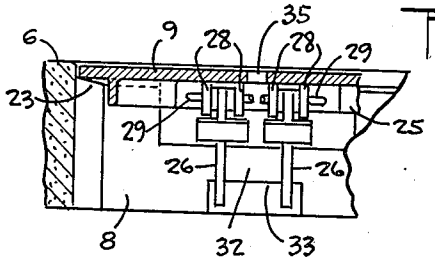


Fig. 7

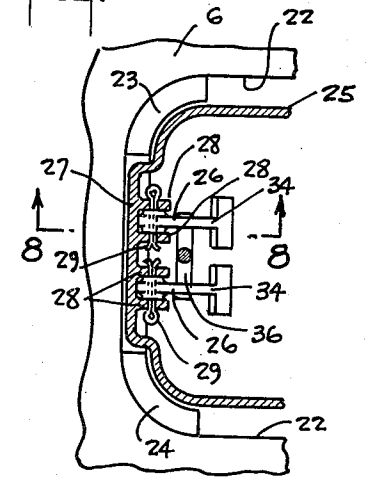
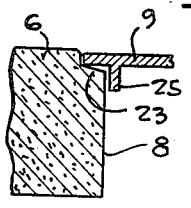


Fig. 8



INVENTOR

Frank M. Brooks

BY John Flam

ATTORNEY

Patented Oct. 8, 1940

2,217,097

UNITED STATES PATENT OFFICE

2,217,097

METER BOX COVER

Frank M. Brooks, San Marino, Calif.

Application July 6, 1937, Serial No. 152,282

4 Claims. (Cl. 220—55)

This invention relates to a cover for sunken boxes, such as water meter boxes.

It has been common in the past to provide a concrete box to form a chamber in which a meter is disposed. Such boxes were usually closed with a cover of metal or concrete, that could be removed to enable reading of the meter as required. The box is usually so installed that the cover is substantially flush with the ground, so as to leave no obstructions above ground, and, when installed in an alleyway or street, it is strong enough to bear the load of any traffic that occurs over the box.

It is one of the objects of this invention to improve and simplify meter box covers of this general character.

It has been customary, before reading the meter, to lift the cover off the box; or to provide a lid in the cover that may be removed, for exposing the dials. It is another object of this invention to provide a hinged metal lid in a concrete cover, while obviating the necessity of a metal frame in the cover for the lid.

Another problem encountered with boxes of this character is the accumulation of dirt or water around the hinges and the edges of the lid, making it difficult to open it when desired. By the aid of the present invention, the lid and its seat are self-cleaning, and there are only inconsequential planes where such foreign matter may accumulate.

It is still another object of this invention to prevent unauthorized removal of the cover as a whole; and further to deter the unauthorized opening of the lid, by the aid of a simple but effective locking arrangement.

It is still another object of this invention to ensure against the possibility that the lid be left inadvertently open after a reading is accomplished. This result is obtained by so arranging the lid and the lock that gravity will return the lid to closing position.

From the objects stated above, it will be evident that this invention accomplishes a most important function in eliminating public liability of the water system operator. A practical self-closing hinged lid avoids the possibility of an open hole causing accidents. Ordinarily many meter box covers or lids are removed by unauthorized persons or curious or mischievous children. Such danger is also more apparent at times when the junk value of iron is high such as at present, which encourages theft.

This invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of one embodiment of the invention. For this purpose there is shown a form in the drawing accompanying and forming part of the present specification. This form will now be described in detail, illustrating the general principles of the invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of this invention is best defined by the appended claims.

Referring to the drawing:

Figure 1 is a longitudinal sectional view of the top portion of a meter box incorporating the invention;

Fig. 2 is a top plan view of the meter box illustrated in Fig. 1;

Fig. 3 is a fragmentary sectional view taken along plane 3—3 of Fig. 1;

Fig. 4 is a sectional view taken along the plane 4—4 of Fig. 1;

Fig. 5 is a sectional view taken along the plane 5—5 of Fig. 1;

Fig. 6 is a fragmentary sectional view taken along plane 6—6 of Fig. 2;

Fig. 7 is a fragmentary horizontal sectional view taken along plane 7—7 of Fig. 1; and

Fig. 8 is a fragmentary sectional view taken along the plane 8—8 of Fig. 7, but showing the lid partially opened.

In the present instance the meter box 1 is illustrated as being substantially rectangular in form and having an open top. This meter box may conveniently be made of concrete or cement or other non-metallic plastic material. It is disposed over a meter and in such position that its top will form a substantially flush surface.

The opening in the top of box 1 is formed by the inwardly sloping walls 2 (Figs. 1 and 3) leading to a shoulder or flange 3. The top surface 4 of the flange 3 is substantially horizontal and disposed below the top surface 5 of the box walls.

A cover member 6 is intended to form a covering for the top of the box 1 and to rest upon the horizontal surface 4. This cover member in the present instance is shown as also made of a non-metallic moldable material, such as concrete. As shown most clearly in Figs. 1 and 3, the cover member 6 has a depending portion 7 which extends for substantially the depth of the vertical face of the flange 3.

The cover member 6 is provided with a viewing aperture 8 adapted to be closed by a lid 9. The viewing aperture 8 is utilized when the lid 9 is open, as shown in the dotted lines in Fig. 1, to

inspect or read the meter disposed within the box 1.

In meter boxes utilized in the past, no particular provisions were made to prevent lifting the cover member 6 with its lid off the box 1. One of the features of this invention resides in the manner in which this unauthorized removal of the cover member 6 is prevented.

Referring to Fig. 1, the cover member 6 is provided at opposite edges with locking bars 10 and 11. These locking bars are adapted to extend below horizontal surfaces 12 formed in the underside of the flange 3. It is apparent that when the locking bars 10 and 11 are in position of Figs. 1 and 2, it is impossible to remove the cover member 6.

In order to permit installation of this cover member 6, one of the bars, such as 11, is intended to be moved out of locking relation with the flange 3. For this purpose this bar is pivoted on a threaded stud 13 which may be cast into the concrete material forming the cover member 6. A washer 14 and crown nut 15 may be used to retain the pivoted bar 11 against complete removal. Of course the bar 10 at the opposite edge of the cover member 6 is firmly attached to the cover member 6 by means of the embedded stud 16. In order to install the cover member 6, the pivoted bar 11 is rotated so that it lies parallel to the adjacent edge of the cover member 6. Then the cover member 6 is lowered and slanted so that at its left hand edge, as viewed in Fig. 1, the bar 10 may be slipped underneath the flange 3. Then the right hand end of the cover member is lowered and by reaching through the opening 8, the locking bar 11 may be turned to the closed position illustrated.

It is also to be noted that the lid 9 and opening 8 are not exactly centrally disposed in the cover member 6. The left hand edge of aperture 8 is nearer the corresponding left hand edge of cover member 6. In this way even if an unauthorized person may succeed in opening the lid 9, he will have ready access only to the bar 10, which is not pivoted, and he would be deterred from attempting to find a releasable lock at other parts of the mechanism.

The lid 9 for closing the aperture 8 is shown in this instance as made of metal, such as cast iron. In order to save manufacturing cost, this lid 9 is directly pivoted to the cover member 6 without any intervening metallic frame. For this purpose, as seen most clearly in Fig. 2, the lid 9 may be provided with a pair of integrally cast hinge lugs 17. These lugs are accommodated in corresponding slots 18 formed in one edge of the aperture 8. As shown most clearly in Fig. 4, these slots 18 extend entirely through the cover member 6 from top to bottom thereof. In this way there is no tendency for dirt or other foreign matter to accumulate adjacent the hinges, for normally the dirt will pass through the slots 18 beyond the hinges.

The means for pivoting the lid 9 by the aid of the lugs 17 includes a pivot rod 19 (Figs. 1, 2 and 4). This pivot rod 19 is accommodated in apertures through the hinge lugs 17, as well as in a clearance cored hole in the cover member 6. The cored hole is preferably not extended entirely through the cover member 6. After the rod 19 is in place, it can be prevented from accidental removal by a filling 20 of plastic material, such as mastic or tar.

Provisions are made to ensure that the lid 9 can never be opened far enough to prevent its return to the closed position of Fig. 1 by the aid of gravity. For this purpose the rear edges 21 of slots 18 are so located that they act as stops against the hinge lugs 17 before the lid 9 assumes a vertical position. The limiting position of lid 9 is illustrated by dotted lines in Fig. 1. When released from that position it automatically falls to the closed position shown in full lines.

It is important also to reduce as far as possible any shoulders or narrow spaces where dirt may accumulate around the opening 8. For this purpose, for substantially its entire perimeter the aperture 8 is provided with a substantially continuous vertical wall 22 (Figs. 3 and 7), except at a few places where a shoulder is provided to serve as a stop for the closed door 9. In the present instance these shoulders 23, 24 (Figs. 2, 6 and 7) are shown as of arcuate form, and arranged adjacent the left hand corners of the aperture 8. Furthermore, as seen more clearly in Figs. 5 and 6, the top surfaces of these shoulders slope downwardly so as to assist in the shedding of dirt or moisture. The lid 9 is so arranged that it engages the shoulder 23 only adjacent its inner portion where the shoulder is strongest. In this way the danger of chipping the shoulders 23, 24, due to the impact when dropping the lid 9 in place, is obviated.

As shown most clearly in Figs. 1, 2 and 6, a strengthening rib 25 may extend substantially around the entire lower edge of the lid 9.

Provisions are made to lock the lid 9 in the closed position of Fig. 1. This locking arrangement may include one or more latches 26 shown in this instance as pivoted on the lid 9 adjacent the front edge thereof. In order to provide pivoting means for the latches, the front edge 27 (Fig. 8) is provided with integrally cast lugs 28. The latches 26 are independently pivoted in these lugs as by the aid of cotter pins 29. The forward edge 30 of the latches is curved and arranged to contact with a sloping shoulder 31 disposed between the arcuate shoulders 23 and 24, as the lid 9 is closed. This engagement between surfaces 30 and 31 causes the latches 26 to be rotated in a counterclockwise direction as viewed in Fig. 8. In this way the latches can pass the vertical face 32 disposed below the outer edge of the surface 31 and finally to engage the lower horizontal face 33 below the surface 31. The locked position of the latches 26 is indicated in Fig. 1. The intermediate nearly closed position of the lid 9 is indicated in Fig. 8.

Each of the latches 26 may be provided with a counterweight arm 34, tending to keep both of the latches 26 in locking engagement.

Whether one or more latches, such as 26, are utilized, provisions are made to utilize an implement for releasing them from the locking shoulder 33. For this purpose the lid 9 is provided with a longitudinal slot 35. Through this slot an appropriately bent bar may be inserted, and when turned at right angles to the slot 35, may engage underneath the counterweight arms 34 in order to rotate the latches 26 in an opening direction, and also for lifting the lid 9. When but one latch 26 is utilized, this implement may be in the form of an angled rod. In the present instance, there being two latches 26, use is made of a T-shaped implement 36 (Fig. 7), which has oppositely directed horizontal extensions for engaging both of the arms 34. The head of this T-shaped implement may be first passed through the longitudinal slot 35 and then turned at right angles to assume the position of Fig. 7 under-

neath the arms **34**. A lifting force on the implement **36** will cause first a disengagement of the latches **26** and then a lifting of the lid **9**.

The lid **9** may be maintained in the lifted position shown in dotted lines in Fig. 1 until inspection is completed. Upon release of the lid **9** it automatically drops to the full line position of Fig. 1. In the meanwhile the latch **26** has engaged the sloping surface **31** to permit the latch to pass below the vertical wall **32**.

If desired, clockwise rotation of the latches **26** may also be limited so as to prevent these latches from striking the upper edge of the aperture **8**. This may be accomplished as shown in Fig. 8 by the aid of the stop lug **37** formed integrally on the latches.

What is claimed is:

1. In a device of the character described, a cover member formed of plastic non-metallic material, and having a viewing aperture, a metal lid for the aperture, adapted to lie substantially flush with the cover member, there being slots adjacent an edge of the aperture, said lid having hinge lugs accommodated in the slots, and a pivot rod extending through the slots and the lugs and disposed in an appropriate hole in the cover member.

2. In a device of the character described, a cover member having a viewing aperture, a lid for closing the aperture, and a pivoted latch carried by the lid, said cover member having a downwardly sloping shoulder at one edge of the aperture, adapted to be contacted by the latch to rock the latch inwardly of the aperture, there being a bottom abrupt surface below the sloping shoulder that is adapted to be engaged by the latch when the lid is in place.

3. In a device of the character described, a cover member having a viewing aperture, a lid for closing the aperture, and a pair of independently pivoted latches for locking the lid and placed side by side, said lid having a slot between the latches to permit entry of an unlocking implement for simultaneously disengaging both latches.

4. In a device of the character described, a cover of cementitious material for a meter box, adapted to be supported with its upper surface flush with the top of the box by a ledge within the box, there being a viewing aperture in the cover, means to releasably secure the cover on the ledge, said means being accessible only through said aperture, a metallic lid for closing the aperture, said lid being hinged to the cover and arranged to be substantially flush therewith when closed, means operative to prevent the lid remaining open, and latch means adapted to lock the lid in closed position and operated by gravity, said latch means being arranged to be engaged for releasing by an appropriate tool insertable through an opening in the lid, substantially the entire viewing aperture being defined by a substantially vertical wall extending through the cover.

FRANK M. BROOKS.