Oct. 6, 1931. O. N. GREDELL 1,825,726

MANHOLE COVER

Filed Sept. 26, 1929

Fig. 1.

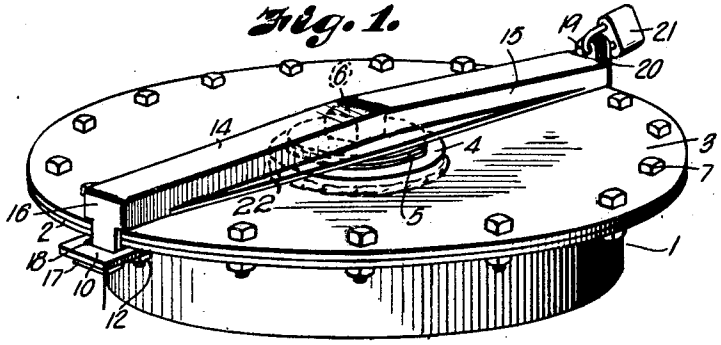


Fig. 5.



Fig. 2.

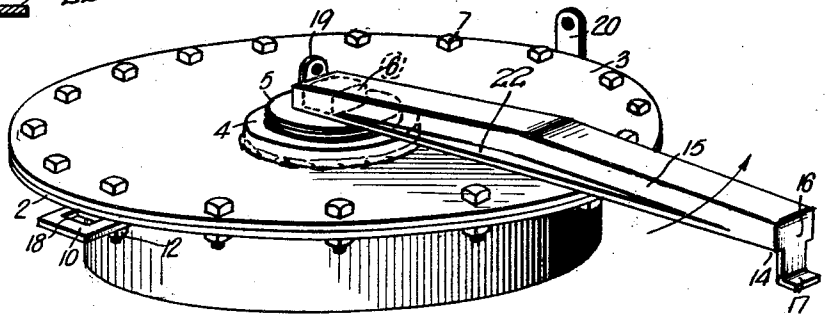


Fig. 3.

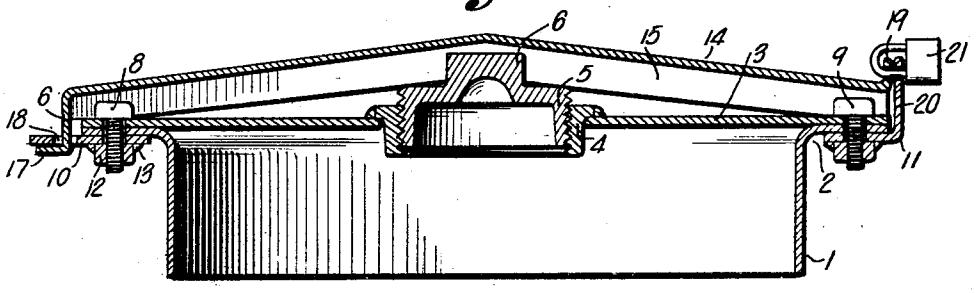
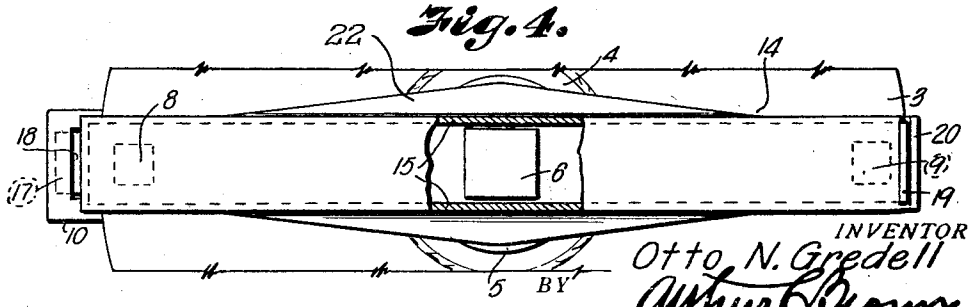


Fig. 4.



INVENTOR

Otto N. Gredell

BY Arthur C. Brown

ATTORNEY

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1,825,726

UNITED STATES PATENT OFFICE

OTTO N. GREDELL, OF KANSAS CITY, MISSOURI, ASSIGNOR TO STANDARD STEEL WORKS, OF NORTH KANSAS CITY, MISSOURI, A CORPORATION OF MISSOURI

MANHOLE COVER

Application filed September 26, 1929. Serial No. 395,417.

My invention relates to manhole covers and more particularly to locks for guarding a cover against molestation, the principal objects of the invention being to guard cover attaching bolts by means adapted for guarding also the filler plug in the cover, and to adapt a plug-operating wrench for service as a cover-locking member.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of a manhole cover provided with a lock embodying my invention.

Fig. 2 is a similar view illustrating the locking member positioned to serve as a nut-operating member.

Fig. 3 is a vertical central section of the device in locked position.

Fig. 4 is a fragmentary plan view of the cover in locked position, the web of the locking wrench being partly broken away to illustrate its relation with the nut.

Fig. 5 is a cross section of the lock wrench.

Referring in detail to the drawings:

1 designates a manhole ring comprising a tubular member having a peripheral horizontal flange 2 at its upper end. A cover 3 comprising a circular plate is adapted to overlie the flange 2 and provided with a central filler opening in which a screwthreaded bushing 4 is fixed, to receive a pipe or the like. A shouldered filler cap or plug 5 adapted to close the opening comprises a threaded portion and a squared head 6 adapted to be operated by a wrench.

The cover plate is attached to the ring by means including bolts 7 extending through the cover and the ring flange which may be removed to afford access to the tank on which the manhole cover may be mounted.

I further provide attaching bolts 8 and 9 located at diametrically opposite points on the cover and flange for securing the cover to the ring, said bolts being adapted respectively to secure a latch leaf 10 and a lock-supporting bracket 11 to the ring and cover plate, for purposes presently described.

Nuts 12 welded as indicated at 12 to the lower faces of the members 10 and 11, have screwthreaded openings registering with bolt-receiving openings in the members, whereby the bolts 8 and 9 may be inserted downwardly through the openings in the cover plate and ring flange and through the leaf and bracket into the nuts for attaching the members 10 and 11 to the ring.

It is apparent therefore that the heads of the nuts will engage the upper face of the cover plate and will lift the members 10 and 11 and urge them into secure engagement with the under surface of the ring flange.

I further provide a wrench 14 comprising an elongated channel-like member having parallel depending side flanges 15 spaced suitably for receiving the nut 6 at any position therealong.

The wrench is provided with an elongated end wall 16 having a longitudinally extending edge flange or latching tongue 17 for insertion in a slot 18 formed in the leaf 10 whereby the front end of the wrench will be latched to the leaf and to the ring when the channel-like wrench extends diametrically across the cover plate and covers the nut 6 as illustrated in Figs. 1 and 3.

The opposite end of the wrench is provided with an apertured upstanding ear 19 and the member 11 has an upstanding flange 20 apertured to receive the bolt of a padlock 21 for locking the wrench in nut-covering position.

The channel member preferably has an upwardly offset middle portion whereby the ends may engage the surface of the cover while the center extends at a sufficient elevation above the cover to pass over the shoulders of the cap and still enclose the nut 6.

The structure just described provides therefore that when the wrench is positioned with its latching tongue 17 engaged in the slotted leaf 10 and its locking ear 19 secured to the bracket 11, the channel of the wrench covers and guards both the central filling and the cover attaching bolts 8 and 9.

Access to the tank through the threaded

bushing 4 is thus prevented since the locked wrench guards the nut 6 and also by reason of the fact that even though the bolts 7 may be removed for displacing the cover plate, the bolts 8 and 9 are guarded by the wrench and cannot be tampered with until the wrench is removed.

The wrench is preferably reinforced by wings 22 projecting laterally from the lower edges of the channel flanges to stiffen the wrench against strain due to operation thereof for moving the plug 5. The wings taper from the center of the wrench towards the ends thereof, and thus leave relatively narrow portions that may be conveniently grasped for manipulating and operating the same.

In using the device constructed and installed on a tank, the wrench may be employed for screwing or unscrewing the threaded plug 5 and has sufficient length to afford suitable leverage for this purpose, the locking end of the wrench being applied to the nut whereby the end having the depending finger extends outwardly from the manhole cover while the wrench is being rotated.

When it is desired to lock the cover, the latching tongue is inserted in the slotted leaf and the wrench pivoted downwardly until its opposite end engages the cover, the side flanges thus enclosing and securely guarding the cover attaching bolts and the filler cap, and the wrench may then be locked in guarding position by the padlock.

What I claim and desire to secure by Letters Patent is:

1. In combination with a manhole cover including a ring and a cover plate having an opening and a plug threaded in the opening, a wrench comprising a channel bar for engaging and covering the plug, and means including a leaf and a lock-receiving bracket fixed to the ring at diametrically opposite points thereof for locking the wrench to the ring in covering engagement with the plug.

2. In combination with a manhole cover including a cover plate having a central opening and a nut threaded in the opening, a wrench comprising an elongated channel having flanges spaced to receive the nut for selectively covering and operating the same, and means including a leaf and a lock-receiving bracket fixed to the cover plate at diametrically opposite points thereof for locking the wrench to the cover in nut-covering position.

3. A manhole cover comprising a flanged ring, a cover plate having a central opening, a nut threaded in the opening, means securing the plate to the ring including diametrically opposite bolts, a wrench comprising an elongated channel having spaced flanges for selectively engaging the nut to operate the same and for covering said bolts, and means for locking the wrench to the ring in bolt-covering position.

4. In a device of the character described including a flanged ring, an apertured cover, and a square headed plug threaded in the aperture of the cover, a wrench comprising an elongated channel member for operating the plug and having a latching lip on one end and a locking ear on the other, and means located at diametrically opposite points on the ring flange for engaging respectively the lip and the ear to latch the wrench to the ring.

5. In a device of the character described including a flanged ring, an apertured cover, and a plug threaded in the aperture of the cover, a wrench comprising an elongated channel member for operating the plug and having a latching lip on one end and a locking ear on the other end, means located at diametrically opposite points on the ring flange for engaging respectively the lip and the ear to latch the wrench to the ring, and means attaching the cover to the ring including means attaching the lip and ear to the ring flange.

6. In a device of the character described including a flanged ring, an apertured cover, and a square headed plug threaded in the aperture of a cover, a wrench comprising an elongated channel member for operating the plug and having a latching lip on one end and a locking ear on the other end, means located at diametrically opposite points on the ring flange for engaging respectively the lip and the ear, and means including nuts attached to the lip and the ear and bolts extending through the cover and the ring flange for securing the cover to the ring.

7. In a manhole cover including a cylindrical ring having a peripheral flange, a cover plate provided with an axial opening, a plug screwthreaded in the opening, a lock comprising a channel member adapted to engage the plug for operating the same, a laterally projecting slotted leaf, a locking bracket, and diametrically opposite bolts having heads engageable with the cover for securing the leaf and bracket to the ring, said lock having a tongue engageable in the slotted leaf and an ear adapted to be locked to the bracket.

8. In combination with a manhole cover including a plate having an opening, a plug closing the opening and fastening devices securing the cover plate to the ring, a wrench member comprising a channel-shaped member having an upwardly offset portion for engaging the plug and having end portions for covering selected fastening devices and means for locking the wrench member in position over the plug and fastening devices to prevent their unauthorized removal.

9. In combination with a manhole cover including a ring and a cover plate having an

opening, a plug closing the opening and fastening devices securing the cover plate to the ring, a wrench comprising an elongated member, means on said member for receiving the plug and for covering the fastening devices, and means for locking the wrench in position over the fastening devices and the plug to prevent their unauthorized removal.

10. In combination with a manhole cover including a ring and a cover plate having an opening, a plug closing the opening, and fastening devices for securing the cover plate to the ring, a member for covering the fastening devices and the plug, and means for locking said member in covering position to prevent unauthorized removal of the cover plate and plug.

11. In combination with a manhole cover including a ring and a cover plate having an opening, a plug closing the opening and fastening devices for securing the cover to the ring, a wrench member for covering the fastening devices and the plug, means secured to the ring by said fastening devices for engaging the wrench member, and means for locking the wrench member to said engaging means.

In testimony whereof I affix my signature.

OTTO N. GREDELL.