187-371

No. 887,591. PATENTED MAY 12, 1908.

J. H. COOK.

MANHOLE LOCKING DEVICE.

APPLICATION FILED JUNE 24, 1907.

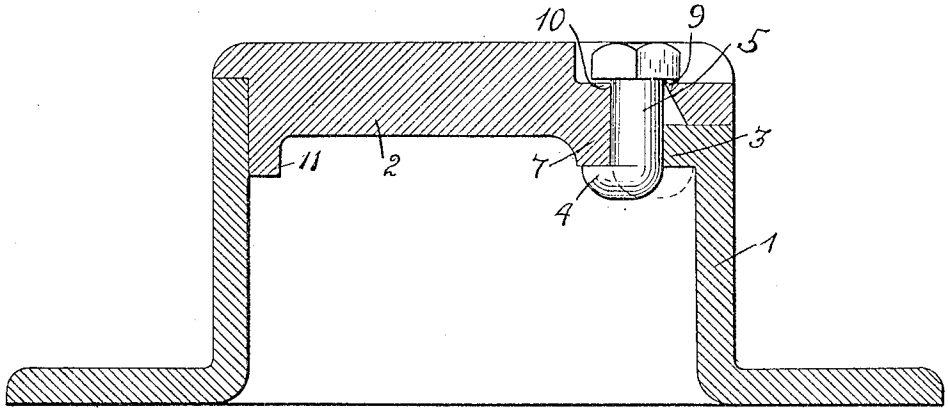


FIG. 1

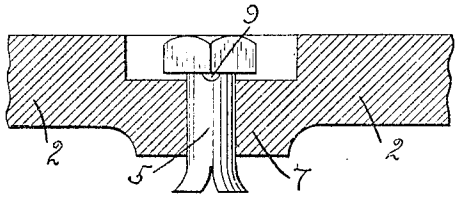


FIG. 2

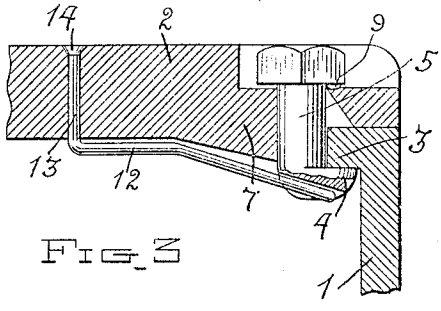


FIG. 3

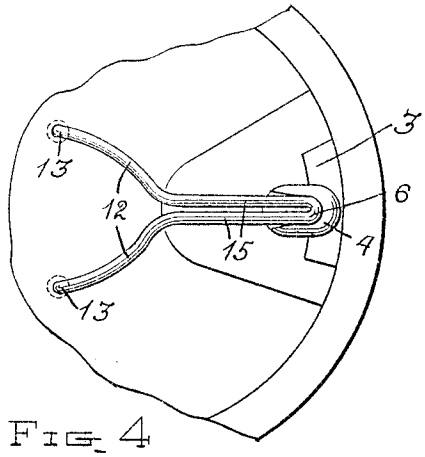


FIG. 4

Witnesses

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MANHOLE-LOCKING DEVICE.

No. 887,591. Specification of Letters Patent. Patented May 12, 1908.

Application filed June 24, 1907. Serial No. 380,529.

To all whom it may concern:

Be it known that I, JOHN H. COOK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Manhole-Locking Devices; and I do 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 manhole covers.

The object of the invention is in a ready, practical and inexpensive manner to assemble the lock bolt with the cover in such manner as to preclude accidental or attempted detachment, and also to prevent turning of the bolt by hand for the purpose of removing the cover.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a manhole cover locking device, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts,—Figure 1 is a vertical sectional view through a manhole cap and cover, exhibiting the improvements of the present invention applied thereto; Fig. 2 is a fragmentary detail view, showing more particularly the construction of the lock bolt; Fig. 3 is a view similar to Fig. 1, showing a modified form of the invention; Fig. 4 is an inverted plan view showing more particularly the feature included in Fig. 3 that is not displayed in Figs. 1 and 2.

Referring to the drawings, 1 designates the cap of the manhole, which may be of the usual or any preferred construction, and employed in any position desired, and 2 the manhole cover. The cap is provided on one side with an inward projecting lug 3, which may be of any desired contour, and is designed to be engaged by a locking toe 4, carried by the shank 5, of the lock bolt, which shank may be of any preferred contour in cross section. The locking toe 4 has its upper face disposed at right angles to the axis of the shank, and its rear portion, adjacent to the shank, is cleft at 6, as shown in Fig. 2, in order to permit spreading of the lower end of the shank, this to prevent the accidental or attempted detachment of the bolt from the cover.

As shown in Fig. 2, the bolt passes through a boss 7 arranged on the under side of the cover, and this boss operates to reinforce the bolt and prevent any tilting movement thereof. The upper face of the cover at the point where the bolt is located is provided with a depression 8, which is furnished for the purpose of allowing the head of the bolt to occupy a plane below that of the upper face of the cover, thus to shield it from injury. On the under side of the head, on the end of the shank opposite that from which the locking toe projects, is formed a downward projecting boss 9 that is adapted, when the bolt is in locked position, that is to say with the locking toe in engagement with the lug 3, as indicated by dotted lines in Fig. 1, to engage a seat 10 formed in the lower wall of the depression 8, the coaction between the boss and the seat 7 preventing the turning of the bolt by hand, but the engagement between these parts being of such character as to permit the ready turning of the bolt by a wrench, or other appropriate implement. By reason of the fact that the lower end of the bolt is cleft, there will be a tendency, due to the inclination or taper of the walls of the cleft portion by contact with the bolt opening of the boss 7, always to hold the boss 9 in engagement with the seat 10.

As shown, the cover is provided with a depending lug 11, in transverse alinement with the boss 7 to engage with the inner wall of the cap, thus to prevent the cover from being pried out without first unlocking the bolt.

As a matter of further improvement, there may be combined with the cover a spring lock-bolt engaging device, shown in detail in Figs. 3 and 4, the object of which is to supplement the boss 9 and seat 10 in preventing turning of the lock-bolt by hand for the purpose of removing the cover. This spring member is constructed of a single piece of resilient wire, and consists of two appropriately-curved arms 12, the terminals 13 of which are disposed at right angles to the length of the members 12, and extend through openings in the cover 2 and have their ends upset, as at 14. The length of wire forming the member is bent upon itself to form a locking finger 15, which is adapted to engage and rest in the cleft 6 of the locking toe 4, as clearly shown in Fig. 4, whereby without the

exercise of considerable force, as from a wrench, the bolt cannot be turned to move the locking toe out of engagement with the lug 3.

As shown in Figs. 1 and 2, the boss 9 is disposed on the opposite side of the bolt shank to that from which the locking toe projects, while in the arrangement shown in Figs. 3 and 4, this boss is arranged on the same side of the shank as the locking toe. Either arrangement may be adopted as found most convenient, and it will be found to operate successfully under either condition.

It will be seen from the foregoing description that although the improvements herein defined are simple in character, they will be thoroughly effective for the purpose designed, and may be adapted for use in connection with manhole covers already in use without requiring any change in their structural arrangement other than the provision of a seat 10 which may be readily provided by drilling a slight depression in the cover.

Having thus fully described the invention, I claim:—

1. In combination, a manhole casing, a lug thereon, a cover for the casing, a locking bolt for the cover having a head provided on its under face with a locking lug, a terminal locking toe on the bolt and means to hold the toe in engagement with the casing lug.

2. A lock-bolt for manhole covers having a terminal partially cleft locking toe, and a head provided on its under face with a locking lug.

3. The combination with a manhole cap provided with an inwardly projecting lug, of a cover, and a lock bolt carried thereby having a partially-cleft locking toe to engage the lug.

4. The combination with a manhole cover of a lock-bolt carried thereby and having a partially cleft locking toe, and a spring member having a finger to engage the cleft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN H. COOK.

Witnesses:
J. W. GARNER,
C. H. GRIESBAUER.