Dec. 26, 1950 F. T. DIXON 2,535,275

MANHOLE LID CLAMP

Filed Jan. 28, 1946

Fig. 1.

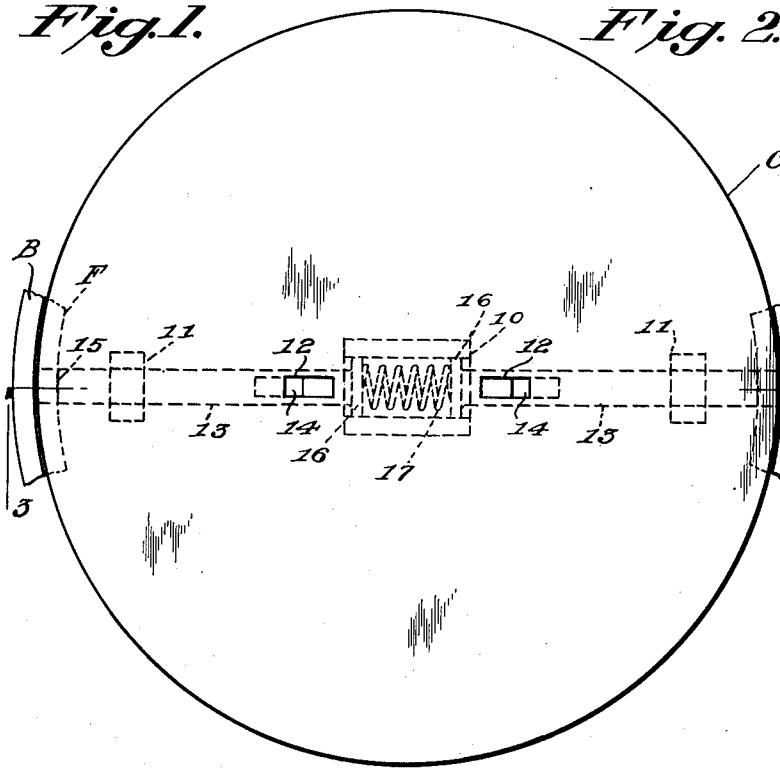


Fig. 2.

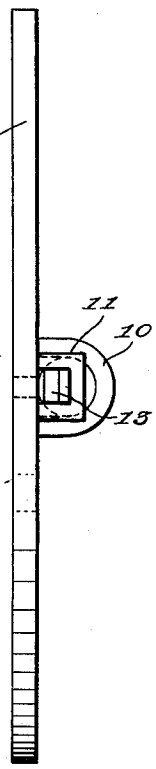


Fig. 3.

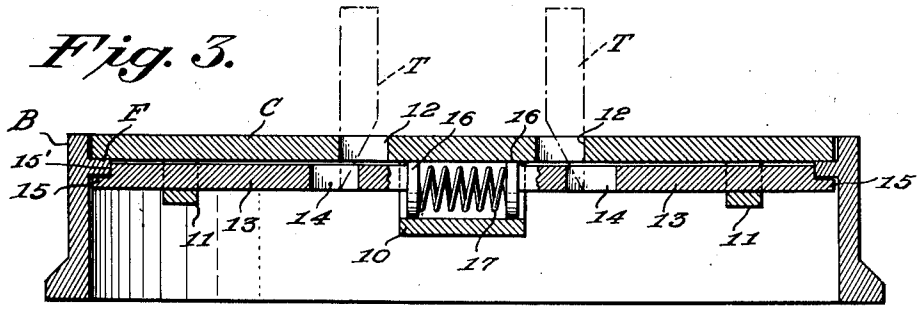


Fig. 5.

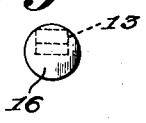
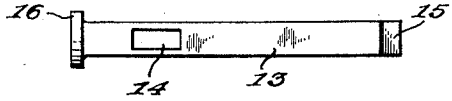


Fig. 4.



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MANHOLE LID CLAMP

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2 Claims. (Cl. 94—35)

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This invention relates to man hole covers and is particularly concerned with releasable locking mechanism for retaining the cover in locked position with the manhole base.

As is known, man holes are openings to sewers or other underground passages and as at present constructed embody a metallic flanged cylindrical base at the mouth of the opening and which is normally covered by a lid or cover.

The covers as now generally in use are in the form of rather heavy discs having their margins resting on the base flange and the weight of the covers only, are relied upon to retain same in position.

The importance of covers for man holes cannot be overestimated as an unguarded open manhole presents a great danger to the public. While the usual manhole cover will retain its position in closing the manhole under ordinary conditions, there is, however, a likelihood of same being displaced by flooded sewers or even by automotive wheels in the event that the cover has become warped. At any rate, a manhole cover loosely seated on a manhole base is subject to vibration by wheels passing over same with a resulting annoying noise.

It is accordingly a primary object of this invention to provide a manhole cover having mechanism associated therewith for locking the cover in position on a manhole base whereby the above noted objections are overcome.

In the provision of locking mechanism for retaining manhole covers in closing position on manhole bases, it is important that such locking mechanism be readily releasable for removing the covers and that the locking mechanism be so constructed that the release thereof can be effected only by authorized persons in order to avoid unauthorized removal as by pranksters or the like.

It is accordingly a further object of the invention to provide a manhole cover having releasable locking mechanism carried thereby and which is effective to lock the cover to a manhole base, and the locking mechanism being so constructed and so associated with the cover that it can be released only by special tools to be in the possession of persons authorized to remove the cover.

Other objects and advantages of the invention will become apparent in the course of the following detailed description, taken in connection with the accompanying drawing, wherein:

Fig. 1 is a top plan view of a manhole cover together with a fragment of a manhole base and

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showing the locking mechanism mainly in dotted lines beneath the cover.

Fig. 2 is a right side edge view of the cover with the locking mechanism as when the cover is removed from the base.

Fig. 3 is a vertical sectional view in the plane of line 3—3 on Fig. 1.

Fig. 4 is a top plan view of one of the latches included in the locking mechanism.

Fig. 5 is a left end view of the latch shown in Fig. 4.

Referring now in detail to the drawing, C designates the cover which may have any desired surface configuration.

The cover C is provided on its under face with a housing 10 which is preferably integral with the cover and which is of generally semi-cylindrical form open at its opposite ends. The housing 10 is preferably disposed centrally of the cover and is elongated with its axis in a diameter of the cover.

The cover is further provided with a pair of stirrups or latch guides 11 defining openings alined with the opening in the housing and with the axes of the stirrup openings in the same diameter as above referred to. The cover C is further provided with a pair of rectangular apertures 12 also in said diameter of the cover, and the apertures are in spaced relation with each thereof adjacent an end of the housing 10.

A pair of latches 13 are provided and each is of elongated form and is rectangular in cross section. Each latch is provided with a rectangular aperture 14 of the same size as apertures 12. Each latch further includes a tongue 15 on one end thereof for engagement beneath the flange F of a manhole base B, and each latch further includes a circular head 16.

The latches 13 are mounted as indicated more clearly in Fig. 3 wherein the body portions thereof slidably extend through the stirrups 11 and the heads 16 thereof are disposed within the housing 10 adjacent the opposite ends thereof in the locked position of the cover.

A coil spring 17 is disposed within the housing 10 with its opposite ends bearing on the heads 16 of the two latches 13.

When the cover C is in its locked position of Fig. 3 the tongues 15 engage beneath the base flange F and the shoulders 15' above the tongues are forced against the cylindrical wall of the flange by the spring 17. In the locked position the apertures 12 and 14 while being in the same diameter of the cover are staggered, that is, apertures 14 are further from the ends of hous-

ing 10 than are apertures 12, the apertures 12 and 14 however, overlapping as shown such that there is a through opening at each pair of apertures 12, 14.

The locking mechanism is released by use of a pair of tools T which in effect are wedges and in use the points thereof are inserted into both apertures of each pair 12, 14, and the wedges are then forcibly driven in for moving the latches 13 toward each other with a resulting compression of the spring 17, and until the apertures are alined with the rectangular portions of the tools disposed therein. In this position of the latches the tongues 15 are withdrawn from beneath the flange F, and the cover C can be lifted from its closing position.

When it is desired to restore the cover to closing position, it is laid on flange F, and then the tools T are knocked out of the apertures whereupon the spring 17 will automatically move the latches to cover locking position.

It is to be noted that while the latches 13 and spring 17 are free of each other, they will retain a symmetrical and operative position on the cover since the latches are outwardly movable to equal extents as governed by flange F, and the tools T draw the latches inwardly equal distances, and for this reason the latch heads 16 and spring 17 will always remain in the open ended housing 10.

While I have disclosed my invention in accordance with a single specific embodiment thereof, such is to be considered as illustrative only, and not restrictive, the scope of the invention being defined in the subjoined claims.

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

1. In a structure of the character disclosed, a circular manhole cover provided with a pair of rectangular apertures in a diameter thereof and in spaced relation to the center thereof, a pair of alined elongated latches slidably supported by the cover on the underside thereof in said diameter and provided with locking tongues on their opposite ends, the adjacent ends of said latches being in spaced relation and positioned between said apertures, a spring supported by said cover and disposed between said adjacent ends for forcing said latches apart to locking position, and a rectangular aperture in each latch of the same dimensions as the apertures in the cover, the latter apertures being normally displaced in said diameter relative to the first apertures but lapping same whereby providing through openings for the insertion of the wedged tools for driving the latches toward each other against the action of said spring.

2. A structure according to claim 1 wherein said latches are slidably supported in stirrups depending from the under side of said cover, and wherein said spring and the adjacent ends of said latches are disposed in a housing depending from the under side of said cover and disposed between the first named apertures.

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