

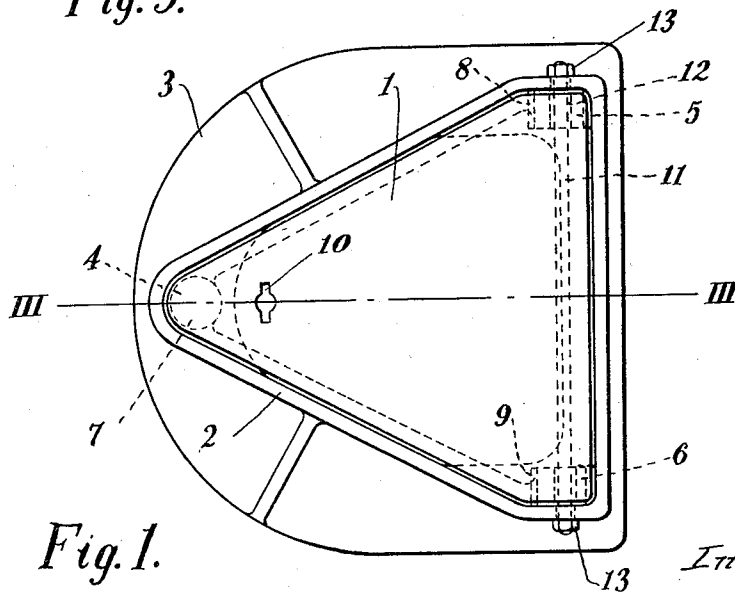
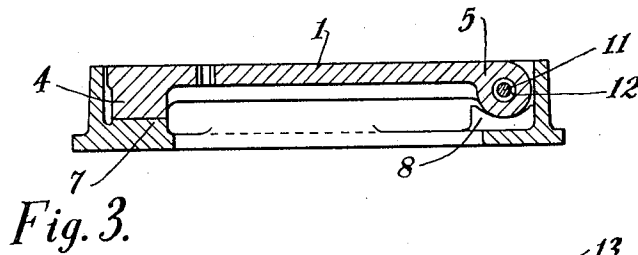
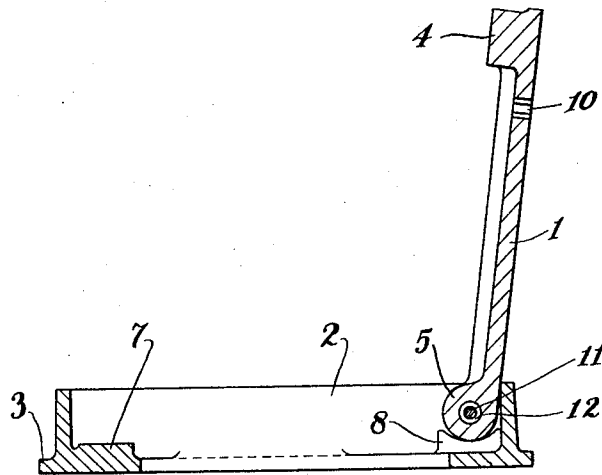
Sept. 5, 1933.

C. J. HARTLEY
MANHOLE COVER AND FRAME

1,925,635

Filed Sept. 30, 1932

3 Sheets-Sheet 1



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Atty

Sept. 5, 1933.

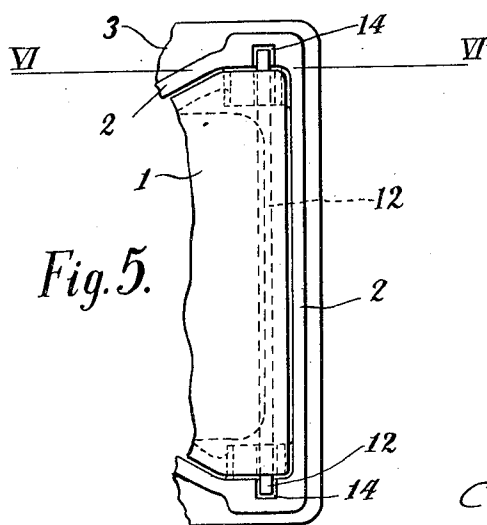
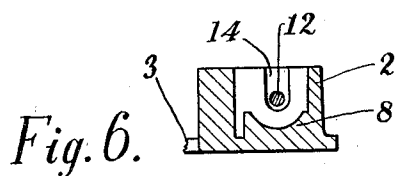
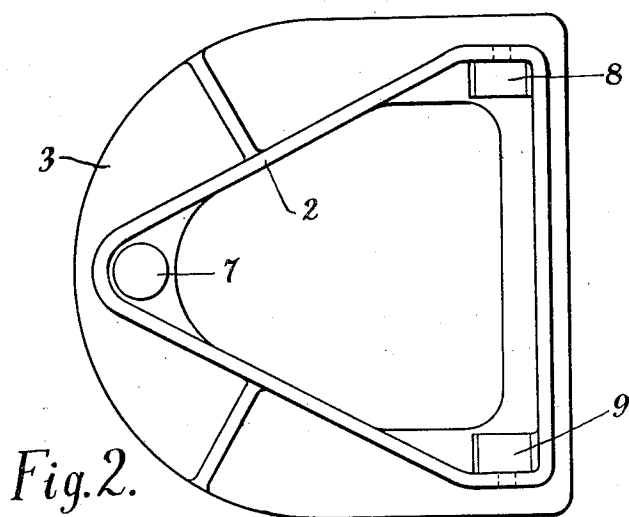
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1,925,635

MANHOLE COVER AND FRAME

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3 Sheets-Sheet 2



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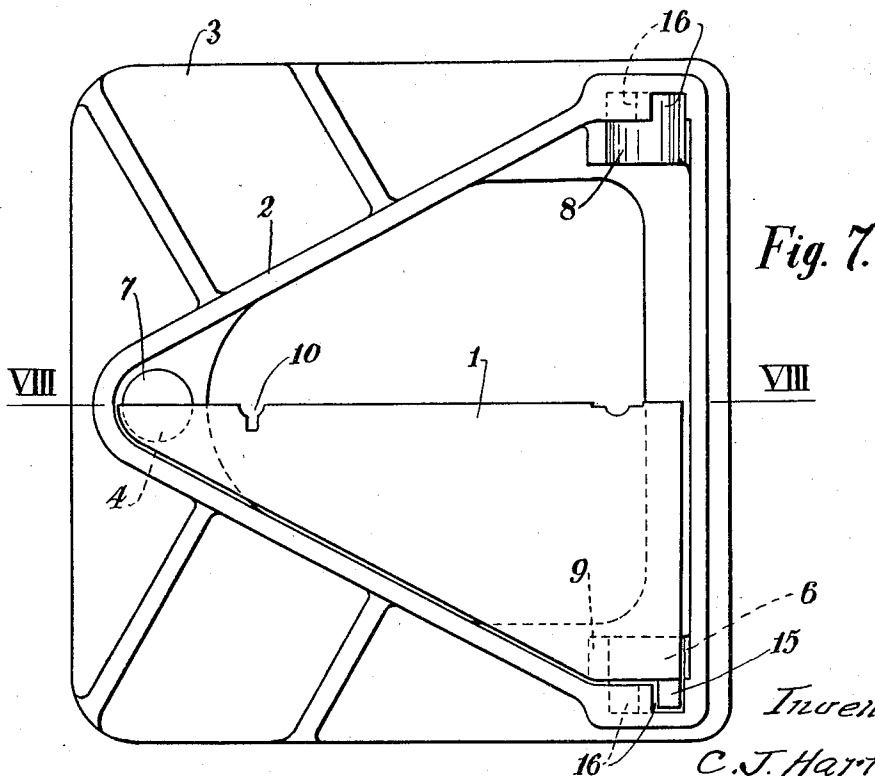
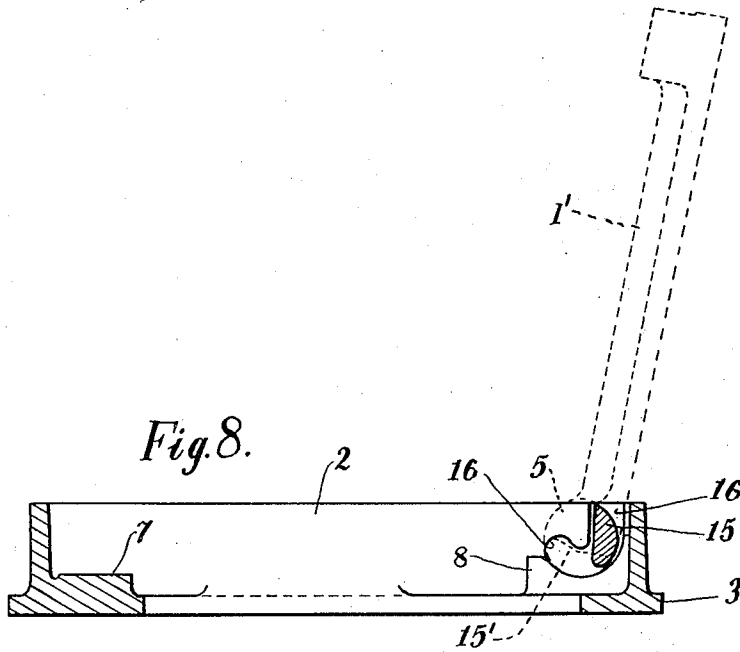
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1,925,635

MANHOLE COVER AND FRAME

Filed Sept. 30, 1932

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

1,925,635

MANHOLE COVER AND FRAME

Cyril John Hartley, Stoke-upon-Trent,
EnglandApplication September 30, 1932, Serial No.
635,691, and in Great Britain September 8,
1931

2 Claims. (Cl. 94—36)

The invention relates to improvements in covers for sewers, drains or underground conduits or gratings for gullies or the like, the term "manhole cover" being used hereinafter to include any of the above or similar covers or gratings.

A manhole cover according to the invention possesses several advantages over the usual form of cover. It is light, easily raised about its pivots and does not rock in its frame.

These advantages are obtained by the manhole cover being of triangular form and having pivots situated adjacent to two of its corners, so that it can be easily raised from its frame about these pivots by the operator lifting the cover at or near its third corner. Rocking of the cover is avoided by the provision in the frame of three points of support for the cover, these points of support, for example, being in the form of pads in the frame adapted to receive and preferably correspond to bosses on the cover adjacent to the corners thereof, two of said bosses constituting the pivots of the cover.

The invention also includes details hereinafter described and pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a plan of one form of triangular cover in closed position in its frame.

Figure 2 is a plan of the frame with the cover removed.

Figure 3 is a sectional elevation on III—III, Figure 1,

Figure 4 being a similar view, but with the cover in the open position.

Figure 5 is a plan of a portion of another form of frame and cover,

Figure 6 being a sectional elevation on VI—VI, Figure 5.

Figure 7 is a plan of a further form of frame and cover, only half of the cover being shown in the lower half of the figure.

Figure 8 is a sectional elevation on VIII—VIII, Figure 7.

In the form of the invention illustrated by Figures 1 to 4, a cover 1 of substantially triangular shape in plan is inserted in a correspondingly shaped frame 2 having a flanged base 3.

The triangular cover 1 has three bosses 4, 5 and 6, which rest on three points of support or pads 7, 8 and 9 on the frame 2. The bosses 5 and 6 are cylindrical and the pads 8 and 9 have cylindrical bearing surfaces to receive them. The boss 4 has a flat undersurface to bear on the corresponding upper bearing surface of the pad 7.

The cover 1, when in the closed position, is thus

firmly supported at or adjacent to its three corners and has no tendency to rock.

The bosses 5 and 6 act as pivots for the cover 1 when it is raised, for example, by a key inserted in a key-hole 10 near the corner remote from said pivots, the triangular form of the cover 1 rendering this raising or pivotal action much easier than would be the case if the cover were of square or rectangular form.

A retaining pin 11 passes through the bosses 5 and 6 and the adjacent parts of the frame 1, the holes 12 in the bosses being of greater diameter than that of the pin to allow plenty of clearance between the pin 11 and the bosses 5 and 6, in order that the bosses bear on the pads 8 and 9 and not on the pin.

The pin, as shown in Figure 1, may have nuts 13, but its ends may simply penetrate into slots 14 in the adjacent parts of the frame 2, as shown in Figures 5 and 6, so that the cover may be removed entirely from the frame if required, without necessitating removal of nuts.

In the form shown in Figures 7 and 8, the bosses 5 and 6 have laterally projecting lugs 15, 15, penetrating into slots 16, 16, in the adjacent parts of the frame 2. The slots 16, 16, are of invert form. When the cover 1 is in the closed position, the lugs 15, 15, are at the upper ends of the slots 16, 16, as indicated in full lines in the lower part of Figure 7 and in Figure 8. The lugs 15 thus close the slots against entry of dirt. When the cover is raised about its pivotal bosses 5 and 6, the lugs 15 then move in the slots 16 to the position indicated by dotted lines at 15', Figure 8, and retain the cover in its raised position, as shown in dotted lines at 1'. When the cover 1 is again lowered, the lugs 15 return into the upper parts of the slots 16, ejecting any dirt which may have entered while the cover was raised.

The triangular cover is easily lifted, as it is not only light and well balanced, but the V shaped lifting corner offers less frictional resistance than does a square or rectangular cover when the space between the edges of the cover and the frame is clogged with dirt or rust.

I claim:

1. In combination, a triangular manhole cover, a frame therefor, bosses carried by and depending below the manhole cover at the respective ends of one side of said cover, pads on the frame to provide bearing supports for the bosses in all relative positions of the cover, means for pivotally connecting the frame and cover, a boss depending from the cover at the meeting ends of the

remaining sides of the cover, and a pad on the frame to receive the last named boss.

2. In combination, a triangular manhole cover, a frame therefor, rounded bosses depending below the cover at the respective ends of the base line thereof, pads on the frame shaped to correspond with the curvature of the bosses to provide for bearing contact in all positions of the

cover relative to the frame, means for pivotally connecting the cover and frame, a pad on the frame having a relatively flat bearing surface, and a depending boss at the apex of the cover having a flat bearing surface to cooperate with the flat bearing surface of the last named pad.

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10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150