April 28, 1964 G. C. WERNER 3,130,651

MOUNTING FOR HINGED COVERS

Filed Aug. 23, 1960

Fig. 1.

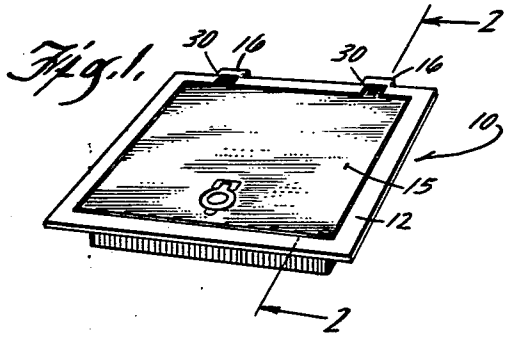


Fig. 2.

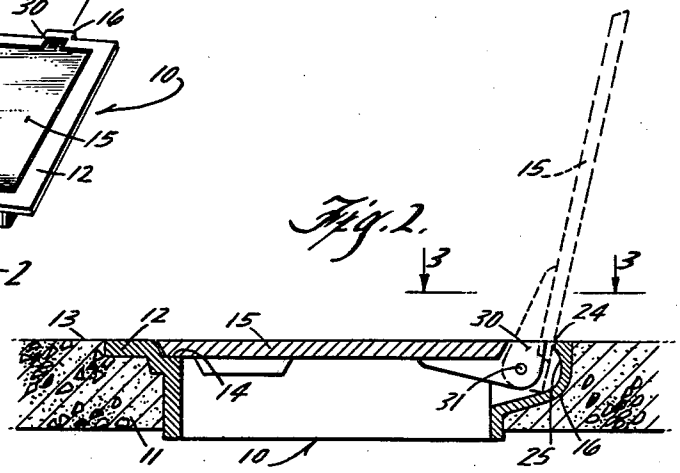


Fig. 3.

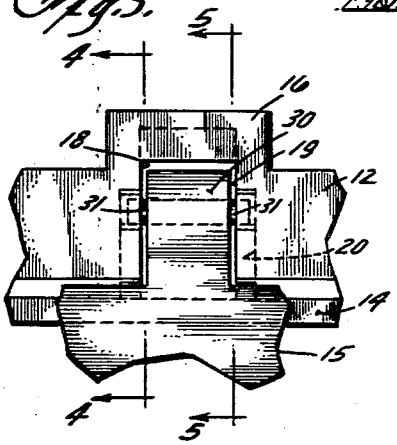


Fig. 5.

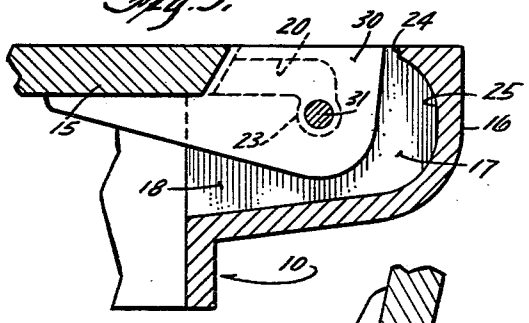


Fig. 4.

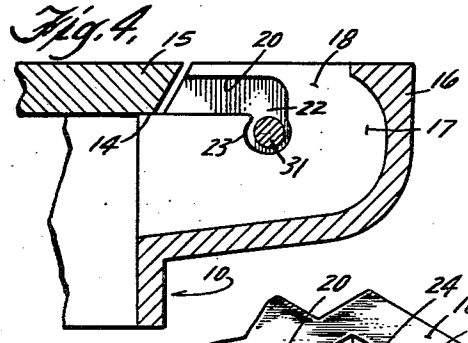


Fig. 6.

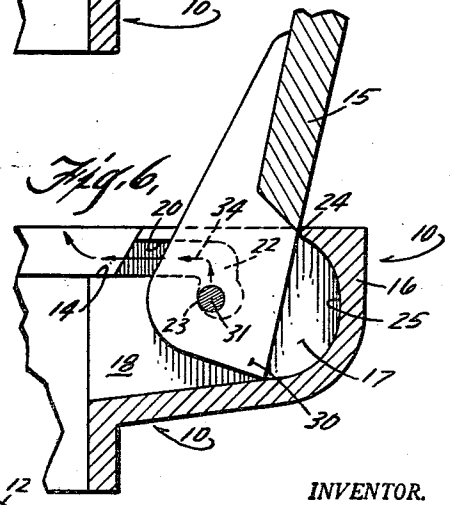
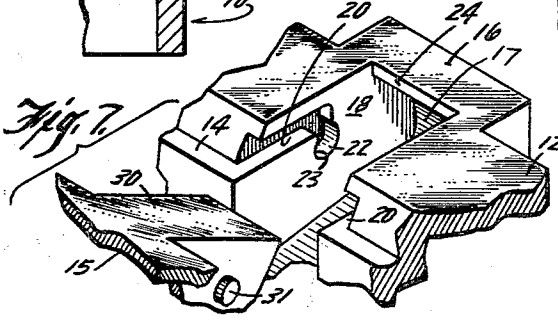


Fig. 7.



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MOUNTING FOR HINGED COVERS

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6 Claims. (Cl. 94—36)

This invention relates to a mounting for hinged covers.

The invention has particular reference to, and is exemplified by disclosure of, the hinged connection between a manhole cover and its mounting casting. The casting provides a hinge pocket means opening rearwardly from the seat upon which the cover rests when closed. The pocket provides side walls with opposed channels extending rearwardly at the level of the seat and having downwardly extending terminal portions. Lug means extending rearwardly from the cover has laterally projecting pins which, by manipulation of the cover, can be introduced into the opposed channels and moved rearwardly therein and downwardly into the aforesaid channel extensions, where the pins are releasably pivoted to accommodate the raising and lowering of the cover.

The downward extensions of such channels have slight enlargements in a forward direction into which the pins will move as the cover is elevated beyond the vertical, the cover bearing on the rear walls of the pocket and being restrained in a nearly upright position by engagement of the pins against the undercut side margins of the pocket means forwardly of the downward extension of the channels.

The arrangement is one in which the cover is instantly removable without tools when in a raised position and yet will stand securely when open and will seat tightly and flush with its base casting when closed.

In the drawings:

FIG. 1 is a view in perspective showing a preferred embodiment of the cover and base casting assembly embodying the invention.

FIG. 2 is a view taken in section on an enlarged scale on the line 2—2 of FIG. 1.

FIG. 3 is a fragmentary detail view on a further enlarged scale taken in section on the line 3—3 of FIG. 2.

FIG. 4 is a view taken in section on the line 4—4 of FIG. 3.

FIG. 5 is a view taken in section on the line 5—5 of FIG. 3.

FIG. 6 is a view similar to FIG. 5 showing the cover standing in its open position, the cover being fragmentarily illustrated.

FIG. 7 is a fragmentary detail view in perspective showing the cover and base casting slightly separated, as in mounting or removal of the cover.

In the manhole usage selected for exemplification of the invention, the base casting 10 is set into the pavement 11 with its flange portion 12 recessed into the paving material to be flush with the upper surface 13 of the pavement. The casting provides at 14 a seat for the cover 15. The particular subject matter of this application is a flush hinge structure for detachably connecting cover 15 with the base casting 10 and for accommodating hinged movement of the cover between the full line position shown in FIG. 1 and FIG. 2 and the raised position shown in dotted lines in FIG. 2.

For the purposes hereof, the hinge structure is duplicated near opposite sides of the cover 15. The base casting 10 has two rearwardly projecting pockets 16 each of which has an interior cavity 17 opening into the interior of base casting 10. The casting provides opposing side walls 18 and 19. At least one of the side walls of each pocket, and preferably both thereof, are provided with

channels 20 which open from the seat 14 in a generally horizontal rearward direction, each such channel having a downwardly turned portion at 22 which is slightly enlarged at its lower end to undercut the horizontal run of the channel at 23.

The cavity 17 is also extended rearwardly at 25 beneath the margin 24 at the rear of the pocket.

The cover 15 has an ear 30 projecting rearwardly into each pocket. Each such ear has one or more lugs or pins 31 dimensioned and located to fit into the channel or channels 20 formed in the casting side walls which define the respective pockets 17. Instead of cast lugs, it is preferred that the pins be prefabricated. The cover may readily be used to manipulate the pins 31 into or from the respective channels 20 bordering the cavities of pockets 17. At the rear of the channels 20, the pins or lugs 31 rest in the enlarged downward extremities of the channels to provide transversely aligned fulcrums upon which the cover is pivotally movable between its open and closed positions. In the closed position shown in FIGS. 1 to 5, the cover rests on the seat 14, its ears 30 substantially filling the cavities of the respective pockets. In the open position of the cover as shown in dotted lines in FIG. 2 and fragmentarily illustrated in full lines in FIG. 6, the cover pivots against the margin 24 at the rear of the pocket, while its pin or lug 31 seats in the undercut portion of the channel to hold the cover securely against further rearward or any upward movement.

While the cover is very rigidly supported either in its closed or its open position, nevertheless it will be apparent that the lugs or pins 31 can be manipulated out of the channels 20 with great ease, the direction of movement being shown by arrows 34 in FIG. 6. Converse movement re-engages the cover with the base casting with equal facility.

As already indicated, the provision of two channels and two pins or lugs per pocket is optional inasmuch as one will suffice where there are at least two pockets. However, the use of two pivot pins per cover is greatly preferred because of its strength and smoothness of operation. The pins or lugs 31 may either be cast integral with the covers or may comprise lengths of rod inserted in the ears. In practice, stainless steel pins 31 are used to provide the pivotal interlock between the covers and bases.

I claim:

1. The combination with a cover having rearwardly projecting ear means provided with pin means projecting laterally in opposite directions, of a base provided with an opening and a seat about the opening and upon which the margin of the cover rests and having rearwardly extending pocket forming means opening through the seat and into which the ear means extends, the pocket forming means having oppositely facing lateral surfaces provided with laterally opening channels overhung by a portion of the pocket forming means and opening to said seat with the bottom of the channel substantially at seat level and provided at corresponding distances rearwardly of said seat with downward extensions in which said pin means are removably fulcrumed, the pin means being slidable along the respective channels between said extensions and said seat, the seat supporting said pin means to sustain part of the weight of the cover during removal and replacement of the cover.

2. The device of claim 1 in which the ear means comprises a pair of laterally spaced ears, the pin means projecting oppositely from the respective ears, the base having separate cavities constituting said pocket forming means and in which the respective ears are disposed when the cover is seated.

3. The device of claim 2 in which the pocket forming

means includes means providing a rear shoulder against which the cover abuts when pivoted from its seat to an open position, the downward extension of said channels in the respective pocket forming means being undercut to receive respective pin means in the open position of the cover.

4. The combination with a base casting provided with a seat spaced below its top face, of a cover normally disposed upon and fitting the seat and pivotally movable therefrom between seated and open positions, the base casting having rearwardly extending pocket forming means provided with opposed lateral faces having channels extending rearwardly from the seat with lower side surfaces opening substantially flush with said seat and provided at their ends remote from the seat with downward extensions forwardly undercut, the cover having ears substantially fitting the pocket forming means between the said faces thereof and having pin means dimensionally fitting the channels and providing fulcrums in the downward extensions of the channels upon which the cover is movable between its seated and open positions, the pin means being readily manipulatable through the channels to and from positions of support on the seat free of said channels whereby the cover may be mounted and dismounted by such manipulation.

5. The device of claim 4 in which the pocket forming means has a rear shoulder and a cavity underlying such shoulder, the said shoulder being engaged by the cover

in its said open position and providing a fulcrum upon which the cover pivots to urge its said pin means forwardly into the undercut portions of the downwardly extending parts of the respective channels.

6. The combination set forth in claim 4 in which the base casting has a beveled surface inclined from its top face toward said seat and through which said channels open at the level of said seat.

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