

Feb. 14, 1950

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2,497,577

FLOOR DRAIN AND COVER THEREFOR

Filed April 25, 1947

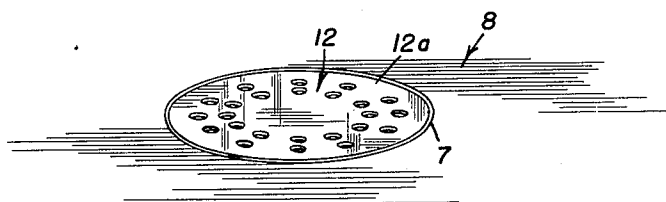


Fig. 1.

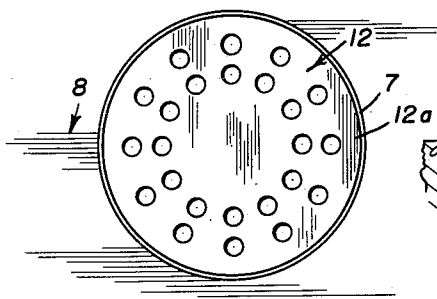


Fig. 2.

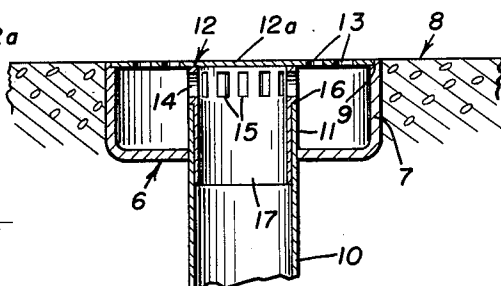


Fig. 3.

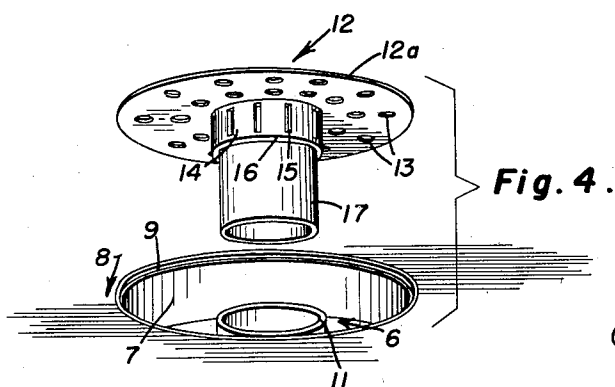


Fig. 4.

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UNITED STATES PATENT OFFICE

2,497,577

FLOOR DRAIN AND COVER THEREFOR

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Application April 25, 1947, Serial No. 743,987

3 Claims. (Cl. 182-31)

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The present invention relates to sewers, cess-pools and drains in general and has reference, more particularly, to a so-called floor drain and improved cover means therefor.

The primary object of the present invention is to provide a novel cover and trap arrangement in which the parts have interfitting relationship, this in such a manner that the cover may be situated flush with the traction surface of a floor, whereby to enable heavy vehicles to roll thereover, the construction and coaction of the parts being such as to effectively and rigidly sustain the cover in place in a manner to prevent same interfering, with minimum obstruction by the cover, due to the fact that it is maintained, at all times, satisfactorily and reliably in place.

More specifically, it is an object of the invention to provide a cup-like trap which is embedded in the concrete floor with its upstanding rim terminating flush with the surface of the floor, the rim having an annular ledge for effectively and firmly seating the marginal edge portions of the coacting disk-like cover.

Another object has to do with a structural assemblage of the type generally referred to wherein the cover is provided on its underside with a centrally situated and depending nipple, the latter being telescopically fitted into the adjacent upper end portion of the drain pipe, there being a shoulder to rest firmly on the upper end of said pipe, in a manner to distribute stress and strain and to adequately support ordinary loads, whereby to prevent displacement of the cover and to facilitate application and removal thereof.

In carrying out the principles of the invention the upper end of the drain pipe protrudes into the central region of the cup, said upper end terminating on a plane below the upper end of the surrounding rim of said cup or trap.

Further, novelty is predicated upon an apertured disk-like cover or lid provided on its underside with the aforementioned depending nipple-like coupling, the latter having its upper end portion shouldered and its lower end portion reduced in diameter to telescope firmly and effectively into the coacting upper end of said drain pipe.

Other objects, features and advantages of the invention will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Figure 1 is a perspective view showing the top

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or outer surface of the cover and the surrounding ledge equipped rim of the coacting trap, the latter being embedded.

Figure 2 is a top plan view of the structure seen in Figure 1.

Figure 3 is a fragmentary vertical sectional view showing all of the parts and their relative coacting relationship.

Figure 4 is perspective view with the cover lifted off to expose the underlying trap.

Reference being had to Figures 3 and 4 wherein all of the details are shown, it will be seen that the trap proper is in the form of an annular receptacle or cup 6, the same having its rim portion 7 embedded in the concrete or equivalent floor 8. The upper edge of the rim is flush with the surface of the floor and said upper edge is provided with an annular groove defining an annular seating ledge 9. The drain pipe is denoted by the numeral 10 and has its upper end portion 11 piercing the central portion of the trapping cup and extending up into the cup as shown in Figure 3. The upper extending end terminates on a plane below the upper end of the rim 7.

The closure means, as a unitary assemblage, is denoted by the numeral 12 and comprises a lid or cover 12a, the latter of disk-like form and the same having a plurality of drainage holes 13. On its underside and formed centrally and integral with the cover is the aforementioned nipple-like retaining and assembling coupling. This has its upper end portion 14 provided with a plurality of intake slots or equivalent openings 15. This portion 14 is relatively thick and defines an annular shoulder 16 which rests firmly on the upper edge of the drain pipe extension 11. The lower major portion of the coupling is reduced in diameter as at 17 and this part telescopes snugly into the upper end portion of the drain pipe, causing the shoulder 16 to rest firmly on the extension 11. The parts are of course proportioned so that when the shoulder 16 comes to rest, the marginal edge of the disk cover likewise rests firmly on the ledge or trap shoulder 9. Consequently, and by way of this arrangement, stability and rigidity are insured and stress and strain are uniformly distributed. What is more, the cup, in conjunction with the drain pipe, provides an adequate foundation for the cover. Therefore, the cover being firmly seated, will serve as an adequate base to sustain heavy weights imposed thereon, such as for example, by heavy duty truck wheels and the like.

As before indicated, not only is the structure strong and durable and susceptible of attaining

the ends sought, but the manner of assembling parts is such that the cover may be readily removed and replaced. Then, too, the cover in this arrangement does not shift or become displaced. Consequently, it follows that a construction perfected in accordance with the principles of the instant invention is efficient and otherwise aptly suited to accomplish requisite results.

Changes in shape, size, materials and rearrangement of details and parts may be resorted to in actual practice, so long as they do not depart from the spirit of the invention or the scope of the appended claims, as is well understood.

What is claimed as new is:

1. In a floor drain of the class described, a drain pipe, a cup-like trap secured to the upper end portion of said drain pipe, said trap including an upstanding annular rim, the upper end of said rim being provided on its inner peripheral surface with an endless groove constituting an annular cover supporting ledge, and a circular cover having its marginal edge portion seated on said ledge with its upper surface flush with the upper edge of said rim, the upper end of said drain pipe extending into said cup and terminating on a plane below the underside of said cover, and said cover having an integral central depending coupling telescoping into the upper end of said drain pipe and provided with an apertured and shouldered portion, the shouldered portion resting on the upper end of said drain pipe.

2. In a floor drain of the class shown and described, a relatively fixed drain pipe, a circular cup-like trap secured to the upper end portion of said drain pipe, said trap including a marginal upstanding annular rim, the upper portion of said rim being provided at its inner peripheral surface with an endless groove constituting an annular cover supporting ledge, and a circular

cover having its marginal edge portion seated on said ledge with its upper surface flush with the upper edge of said rim, the upper end of said drain pipe extending into said trap and terminating on a plane below the underside of said cover and said cover being provided with a centrally disposed integral depending tubular coupling telescoping in part into the adjacent upper end portion of said drain pipe and including a reinforced apertured portion providing a shoulder, said shoulder resting directly on the upper end of said pipe.

3. As a new article of manufacture and as a significant part of a floor drain construction of the class shown and described, a perforated disk-like cover provided on its underside and at its center with a tubular integral coupling, the lower major portion of said coupling being imperforate and constituting a fitting which is adapted to telescope into the upper end portion of a drain pipe and the remainder of said coupling being relatively thick and provided with drain inlet holes and also providing a shoulder which is adapted to rest directly and firmly on the upper end of the stated drain pipe.

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