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ROOF DRAIN

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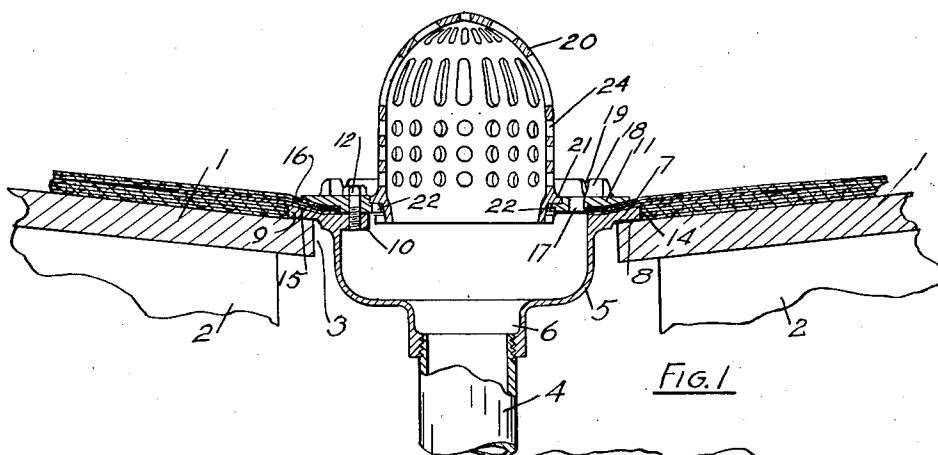


FIG. 1

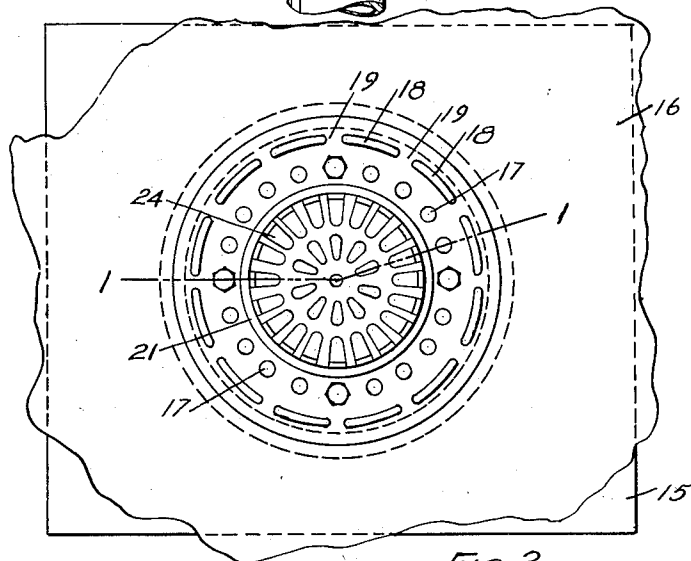


FIG. 2

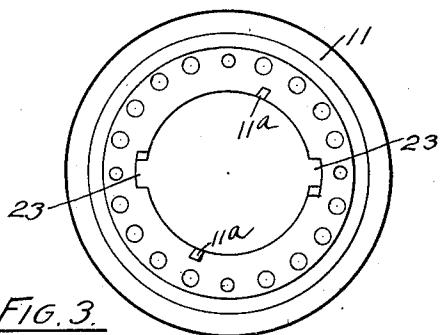


FIG. 3

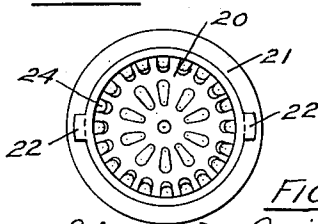


FIG. 4

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ROOF DRAIN

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3 Claims. (Cl. 182—31)

Roof drains as commonly made are provided with a drain cup leading to the discharge. This drain cup is also provided with a flange resting on the roof over which the several plies of waterproofing felts are usually carried. A clamping ring secures the edges of these felts around the opening and a dome strainer is usually arranged within the cup and within the ring. These drains have some serious faults. The waterproofing felts are laid upon the roof, ply upon ply with hot pitch swabbed on each ply. When these felts are brought under the clamping ring, as is the custom, the pitch has become cold and hard before the clamping ring is applied so that it is impossible to compress the felts into a tight joint when the ring is drawn down by the screws. When the intense hot sun of midsummer strikes the roof, the pitch softens, the joint at the clamping ring becomes loose and tar from the pitch flows into the drain, sometimes in sufficient quantity to completely clog the drain pipe. With the present invention the outer edge of the flange of the cup has a thickness which serves as an abutment for the edges of the different plies of the waterproofing felts except the two top layers. In this way the discharge of tar into the drain is avoided in as much as with the top layers carried over the flange the joint can be sealed with a plastic cement which can be compressed into a tight joint entirely eliminating the leakage of tar into the drain.

The past practice has been to rest the dome on the bottom of the cup. This leaves an open pocket between the dome and the walls of the cup for the accumulation of material which tends to plug the drain. In the present invention this difficulty is obviated in that there is no open pocket to catch dirt or other material and the roof water is carried to the cup primarily through openings in the clamping ring, practically at the roof level so that an accumulation of material at this point is largely obviated. The absence of any fastening means, also often results in a displacement of the dome and a consequent lack of protection against foreign substances entering the drain pipe. In the present invention the dome strainer is detachably fixed and consequently its displacement is avoided and the plugging of the normal drainage openings is also avoided. Features and details of the invention will appear from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing as follows:—

Fig. 1 shows a vertical section of the device on the line 1—1 in Fig. 2.

Fig. 2 a plan view of the roof drain.

Fig. 3 a bottom view of the clamping ring.

Fig. 4 a bottom view of the dome strainer.

1 marks the roof, 2 the joists supporting it, 3 a roof drain opening and 4 the drain pipe.

A drain cup 5 has a discharge opening 6 from which the drain pipe leads. The cup is provided with a surrounding flange 7, the bottom of this flange having a seating surface 8 adapted to engage the roof at the periphery of the opening 3. The flange has a relatively thick abrupt edge 9.

The cup also is provided with a number of ears 10 around its inner periphery at the top and a clamping ring 11 is secured to the cup by screws 12 which extend through the flange ring and into the ears 10. The major portion of the waterproofing felts are cut to abut at 14 the edge 9 of the flange of the cup. A flashing plate 15 extends around the cup and over the flange 7 and extends back a slight distance from the edge of the flange sealing the joint between the felts and the abutting edge of the flange. The top felt plies 16 are carried over the plate and in on to the flange 7 and cup. The flange ring 11 clamps these plies on to the upper edge of the cup and flange. These top plies can be sealed to each other and to the flashing plate 15 by plastic cement which can be compressed by the clamping ring 11 to form a positively tight joint prohibiting tar from flowing into the drain. The flange is sloped from the outer edge to the cup so that there is a slight depression in the overlapping top layers. The ring 11 is beveled on its under-side and terminates in a comparatively sharp edge so that the upper surface of the clamping ring is practically in continuation of the upper surface of the roof.

The clamping ring is provided with a series of drain openings 17 which lead through the ring into the cup. A guard ring 18 is arranged on the clamping ring outside of the openings 17. This guard ring forms a gravel stop and tends to prevent the passage of material over the openings 17. Slots 19 are carried through the ring 18 at intervals which permit the water to flow to the openings 17 of the dome openings.

The dome 20 is provided with a flange 21 surrounding its bottom which seats on the inner edge of the clamping ring. The dome extends through the clamping ring and is provided with ears 22 which are adapted to pass through slots 23 in the inner edge of the clamping ring, these ears and slots forming a bayonet joint by means of which the dome may be assembled and locked

with the clamping ring. Openings 24 in the dome are at an elevation with relation to the roof to carry off heavy rainfall and to come into play should paper, leaves and other material clog the openings 17 in the clamping ring 11, which prevents clogging as has been experienced where the dome has been set on the bottom of the cup.

We preferably provide the clamping ring with stop shoulders 11a by means of which the lugs 22 may be definitely positioned in locking relation with the clamping ring. Instructions cast on dome for inserting and removing.

What we claim as new is:—

1. In a roof drain, the combination of a drain fitting having a discharge cup and a surrounding flange, the flange having an edge adapted to abut a roof covering leading to the drain, a clamping ring secured to the fitting adapted to clamp plies of the roof covering on the fitting, said ring having drain openings leading directly to the cup, and a radially slotted guard ring outside the drain openings.

2. In a roof drain, the combination of a drain fitting having a discharge cup and a surrounding

flange, the flange having an edge adapted to abut a roof covering leading to the drain, a clamping ring secured to the fitting adapted to clamp plies of the roof covering on the fitting and having openings leading directly to the cup, and a drain dome attached to the ring inside the openings.

3. In a roof drain, the combination of a drain fitting having a discharge cup and a surrounding flange having an edge adapted to abut a roof covering, the flange sloping from the edge to the cup, a clamping ring secured to the fitting and having a tapered under surface adapted to engage plies of the covering, said ring having a comparatively thin edge and a top surface in continuation substantially with the roof surface, said flange having drain openings leading to the cup, a radially slotted guard ring outside the drain openings, and a dome detachably secured to the clamping ring inside the openings.

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