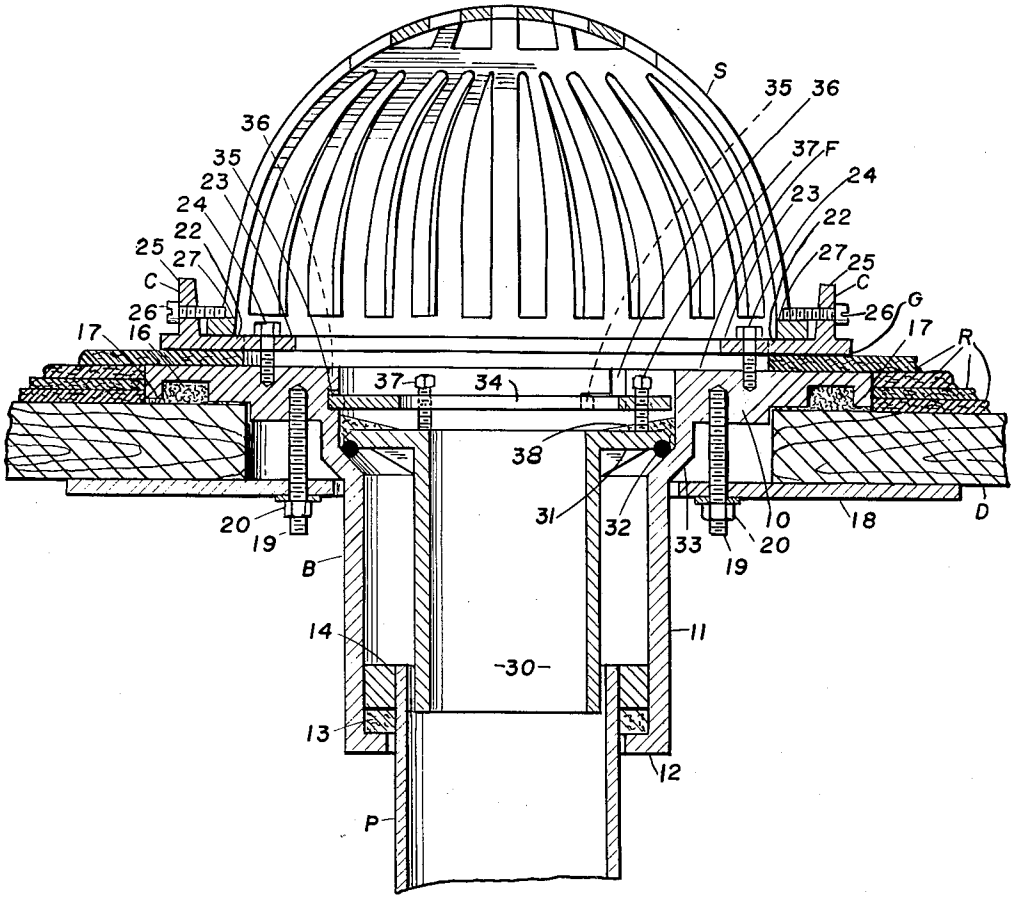
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ROOF DRAIN

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ROOF DRAIN

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The present invention relates to improvements in roof drains.

A commonly used type of roof drain comprises a basin extending through an opening cut in the roof deck planking, a basin flange resting upon the roof deck, a basin outlet to which drain piping is connected by a threaded or caulked joint, and suitable clamping means by which the flashing or top layers of the roofing sheets are sealed to the drain. In the roof drains of the prior art where an external caulk pipe joint is used, difficulty has often been encountered in caulking the drain basin outlet to drainage piping of the building due to the close working space available beneath the roof deck. Extending the basin outlet structure downwardly to give sufficient clearance or working space for caulking operations results in a large and cumbersome drain fixture, and furthermore in high cost for the fixture. Where a threaded or internally caulked joint is used with the basin external to the pipe, after a period of time leaks often develop due to weathering at the joint or other causes. The present invention is directed to a roof drain fixture adapted to a threaded joint, or an interior caulk joint which may be caulked from above the roof deck, wherein a joint shrouding and protecting means is provided.

The drawing shows a vertical substantially axial section through the drain of this invention in the enviroment of use.

In the drawing, D represents the planking of the roof deck with an opening therethrough to receive the drain basin, R the multiple layers of water proofing material with which the roof deck is overlaid, B the basin of a roof drain extending downwardly through the opening in the roof deck, P the drain piping connected to the basin, F a circumferential flange at the upper end of the basin resting on the roof deck, G a flashing clamp for sealing the top layer of roofing material to the top surface of flange F, and S a dome shaped strainer resting on the top of the flashing clamp. The cylindrical portion **11** of the basin B is provided at its lower end with an internal shoulder **12**, which may be provided with threads for engaging the piping P, or as shown in the drawing, to retain caulking material for a caulked joint comprising bottom and top layers of oakum and poured lead or like materials which may be applied to the joint in the usual manner during construction operations.

The under side of the flange "F" includes a shoulder portion **10** which may fit within the opening in the decking, and a portion outwardly thereof having a circumferential groove **16**, providing in effect an annular rim **17** to be set in roof mastic, the outer periphery-adjacent surfaces of the deck flange "F" and of the deck planking "D" being smeared with mastic, with the excess flowing up into groove **16**. By means of the centrally apertured deck clamping plate **18** disposed about the cylindrical portion of the basin on the underside of the decking "D," the studs **19** threaded into the flange shoulder **10** and extending through the plate **18**, and the clamping

nuts **20** the drain flange "F" may be drawn down tightly to hold the drain basin in place and form a water-tight seal between the underside of the deck clamp and the topside of the deck planking by means of the mastic previously mentioned.

The lower layers of roofing felt are laid in and mopped by hot tar on the deck planking butting against rim **17** of the deck flange. In that manner these layers of roofing, so applied supplement the water-tight seal between roof drain and deck planking and extend over the entire deck area. The top layers of roofing extending inwardly over the periphery of the flange "F" are similarly laid in and mopped with hot tar directly on top of the lower layers. In that position they augment the water-tight seal produced by the lower layers. Further, the edges of the top layers which extend inwardly over the periphery of flange "F" are held in sealed relation thereto by the clamping bolts **24** extending through the lugs **23** and threaded into flange F. A vertical rim near the outer periphery of the clamping ring base **22** is slotted to provide a plurality of vertical projections **25** spaced from each other to form a gravel stop ring with V-shaped drainage notches around the edge of the dome shaped drain screen S resting on the ring base **22**. On opposite sides of the flashing clamping ring, a pair of these projections **25** may be threaded to receive retaining screws **26** extending inwardly to engage the screen or strainer rim **27**.

Within the basin or wall B there is provided a cylindrical joint shroud **30**, the lower end of which extends into the drain piping P and the upper end of which is provided with a circumferential flange **31**, the edge of which is grooved to receive ring packing or gasket **32** for sealing the upper end of the shroud to a supporting shoulder **33** on the basin spaced inwardly from the upper surface of the flange **10**. To hold the joint shroud in position and in sealed relation to the basin B, there is provided a shroud pressure ring **34** removably engaging the inner circumference of the basin B by means of the bayonet pin and slot structures **35**, **36** on the ring and basin respectively and clamping screws **37** threaded into the pressure ring to bear endwise upon the shroud flange. Caulking **38** such as mastic or similar material may be applied as a water proofing seal between the upper surface of the shroud flange and the basin B.

By the shroud structure provided in the drain of this invention water is introduced into the drain pipe at a point beyond the joint so that water does not come in contact with the joint. The joint is therefore protected from the action of flowing water and from weathering. Hence the use of an inside joint whether threaded or caulked is feasible, a point of particular advantage with a caulked joint since the interior caulked joint may be made from the roof with the strainer removed, thereby obviating the difficulties encountered by the use of an external caulked joint. The several clamping and sealing structures also contribute to ease in installation in a water-tight manner.

I claim:

1. In a roof drain fixture a flanged basin type drain body having a flange adapted to be sealed to the top surface of the roof sheathing structure, the basin structure comprising a depending cylindrical sleeve adapted to extend through the roof sheathing with the lower end thereof inwardly flanged to support a caulking joint adapted to connect the depending cylindrical portion of the drain body to a drain pipe, said cylindrical portion having an inwardly tapering shoulder formed in the top portion thereof, a joint shrouding cylindrical conduit disposed entirely within the depending cylindrical portion of the drain body and of less diameter than the depending

cylindrical portion of the drain body and adapted to extend downwardly into a drain pipe connected to the body, said conduit having a top flange supported on the tapered shoulder of the depending cylindrical portion of the drain body, a packing seat disposed on the underside of the shroud flange, packing disposed on the inwardly extending tapering shoulder of the cylindrical depending portion of the drain body, a pressure ring detachably secured within the drain body opening above said tapered shoulder and pressure screws carried by the ring and bearing on the shroud flange to compress said packing on the tapering shoulder of the body.

2. A roof drain having the structure described in claim 1 wherein the top of the flange on the shroud conduit is sealed with sealing compound to the depending cylindrical portion of the drain body.

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