Dec 2, 1941. E. M. KLING 264,760

FILL PIPE BOX

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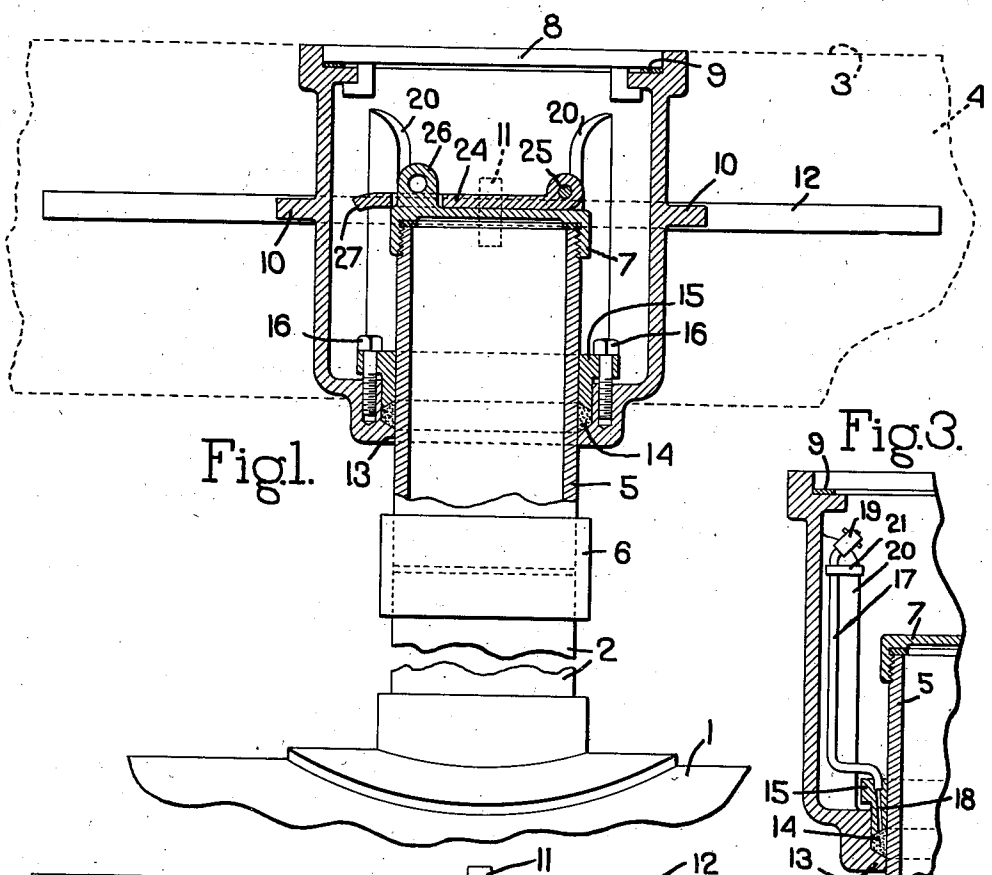


Fig.1.

Fig.3.

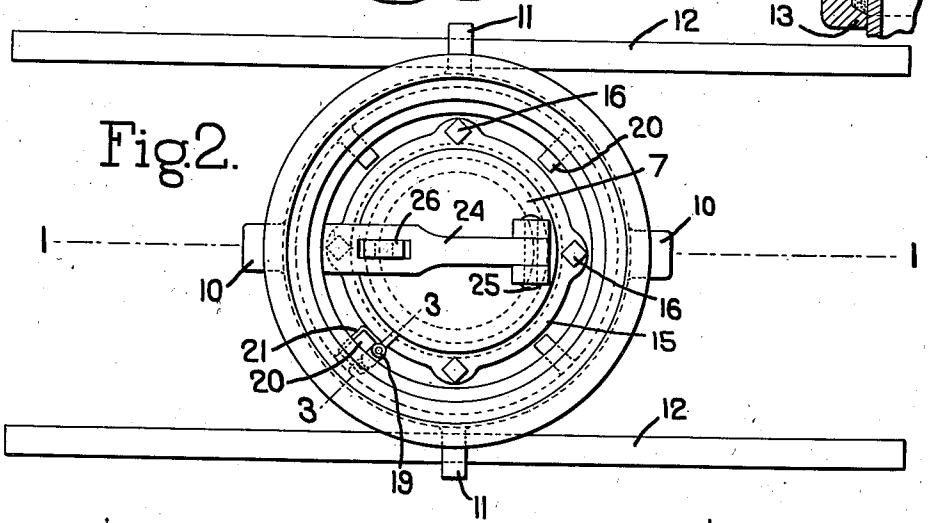


Fig.2.

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FILL PIPE BOX

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1 Claim. (Cl. 220—86)

This invention relates to a fill pipe box of the so-called slip type. Such fill pipe boxes are extensively employed to cover and protect the inlet end of a fill pipe leading to a tank or reservoir of gasoline or other fluid located in the ground and find a large use in connection with filling stations. The fill pipe box is embedded in the ground or other base and usually in a base of concrete or cement with the top of the box flush with the surface. The tank containing the gasoline or other fluid is located in the ground and a fill pipe leads therefrom into the fill pipe box. The inlet end of the fill pipe is usually provided with a removable cover and the tank is filled by removing the cover of the fill box, the cover of the fill pipe and connecting a hose from the tank wagon to the fill pipe.

Owing to changing temperature and to settling or variations in the soil or other conditions, it is desirable to provide for a relative longitudinal movement between the fill pipe box and fill pipe.

The present invention has for its object to provide a fill pipe box of the slip type which will permit this required relative longitudinal movement but which will at the same time provide a water-tight joint between the fill pipe box and fill pipe and in which the means for securing this water-tight slip joint is entirely within and enclosed by the box and is adjustable and repairable from within the box and is thus always readily accessible. Thus any danger of water collecting in the fill pipe by passing up through the space between the two is prevented. If such a collection of water should occur and freeze, it not only would render difficult the filling operation but it would break or damage the fill pipe box. If it remained liquid, unless great care were used, it would pass into the fill pipe upon the removal of the covers and mix with the gasoline or other fluid which, of course, is detrimental.

The invention has for its further object to provide lubricating means within and enclosed by the box for maintaining at all times the effective condition of the water-tight joint.

The invention has for its further object to provide in combination with a fill pipe box embodying the invention a separable upper section of the fill pipe cooperating therewith to insure the required water-tight joint while permitting the required relative longitudinal movement.

While the invention is useful under various conditions, it is particularly useful in a cold climate where low temperature or freezing conditions frequently occur.

The stated objects and other objects and purposes of the invention will appear more fully from the accompanying description and drawing and will be particularly pointed out in the claim.

In the drawing:

Fig. 1 is a view partially in side elevation and partially in vertical cross section taken on the line 1—1 of Fig. 2 showing a preferred form of the invention.

Fig. 2 is a top plan view of the construction shown in Fig. 1 with the cover of the fill pipe box removed.

Fig. 3 is a detail in vertical cross section taken on the line 3—3 of Fig. 2.

The drawing illustrates simple and preferred forms of construction embodying the invention as used in connection with a gasoline supply tank or reservoir located below the surface of the ground. A portion of such a tank 1 is shown as provided with a fill pipe 2 extending upward therefrom to adjacent the surface 3 of the ground or other base, which in this case is indicated in dotted lines as a bed 4 of cement or concrete. The fill pipe is shown as provided with an upper end section 5 which may be made of different material from the main pipe and finished to present a smooth, cylindrical exterior surface. This end section is united to the main pipe by any suitable coupling 6. The inlet end of the fill pipe is provided with a suitable removable cover 7 herein shown as threaded thereto.

The fill pipe box is of the usual cup shape fitting over the fill pipe end section 5 surrounding and protecting the inlet end of the fill pipe and provided with the removable cover 8 and interposed gasket 9 to form a water-tight joint at the top. The cover and upper end of the fill pipe box is desirably made flush with the surface 3 of the ground or other base in which it is located.

In order to secure a firm anchoring of the fill pipe box in the base, there is provided, in addition to the usual projecting lugs 10, one or more, in the case illustrated two, apertured ears 11 rigid with the side wall of the box and projecting exteriorly therefrom and a long bar 12 extending through the aperture in each ear. Thus, notwithstanding any irregularity in the constitution of the base, whether of cement, concrete or other form, the fill pipe box is firmly anchored so as to maintain its upper surface flush with the surface of the base.

The fill pipe box at its lower end presents an inner concentric shoulder 13 and this shoulder fits closely against the fill pipe end section. A suitable packing 14 rests upon this shoulder to surround and engage the fill pipe end section. A

gland 15 is adjustably secured to the box above the shoulder and acts to force the packing against the fill pipe to form a water-tight joint. A simple means for thus securing the gland to the fill pipe box and providing for thus adjustably forcing the packing against the fill pipe end section is shown as a plurality of cap screws 16 passing through a flange on the gland and threaded into the bottom of the fill pipe box and operable from their upper ends within the box.

It is essential that the packing 14 shall be kept in effective condition so as not to become dry and hard. This packing may be of any suitable material capable of being maintained soft and flexible by lubrication. To maintain its effective condition means are provided for supplying lubricant thereto. In the form illustrated in Figs. 1, 2 and 3, a tube 17 is mounted in the gland 15 and communicates through a hole 18 drilled therein with the packing and extends upward from the gland to adjacent the top of the fill box where it is provided with a suitable fitting 19. The interior of the fill box is usually provided with a plurality of inwardly extending vertical ribs 20 and this tube 17 is conveniently extended up alongside one of these ribs and secured thereto near its upper end by a staple or other connection 21. Thus this lubricant supplying means is located entirely within and is enclosed and protected by the box.

The removable cover 7 of the fill pipe is shown as provided with a usual type of locking device consisting of an arm 24 hinged thereto at 25, fitting over an apertured lug 26 on the cover and having a projecting end 27 extending radially past the ribs 20 so that when a padlock is fastened in the apertured lug 26, the cover cannot be unscrewed by reason of the end 27 coming into engagement with one of the ribs 20.

There is thus presented a simple and efficient construction for carrying out the objects and purposes of the invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

A fill pipe box of the slip type, wherein the box is embedded in the ground or other base and fits over a fill pipe having its inlet within and protected by the box and wherein slip or relative longitudinal movement between the fill pipe and the box is required, comprising an inner concentric shoulder at the lower end of the box, packing on the said shoulder located within the box for surrounding and engaging the fill pipe when projecting into the box and removable and replaceable from the interior of the box, a gland within the box and adjustably secured to the box above the shoulder and operable from within the box to force the packing against the fill pipe to form a water-tight joint while permitting relative longitudinal movement between the box and the fill pipe and a tube communicating at its lower end with the packing and extending upward entirely within and enclosed by the box to adjacent the top thereof and secured to the wall of the box for supplying lubricant to the packing to maintain its effective condition.

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