

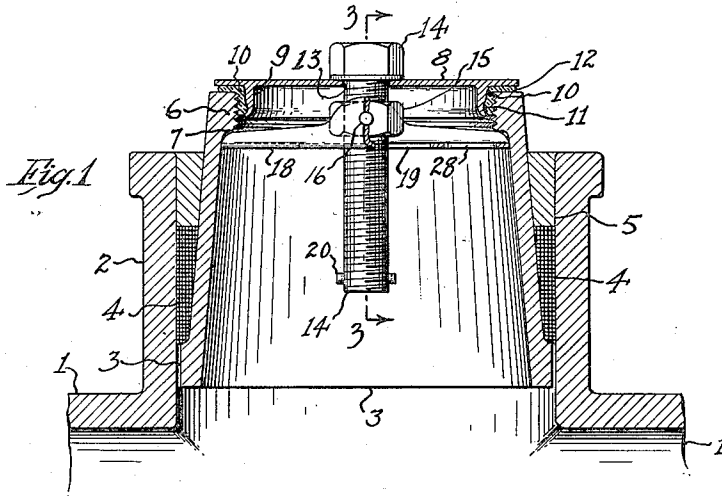
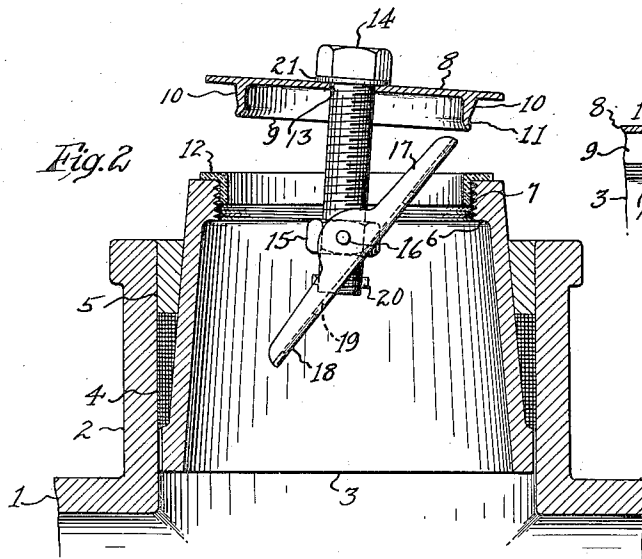
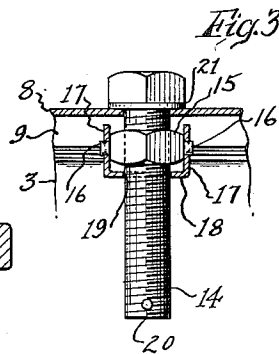
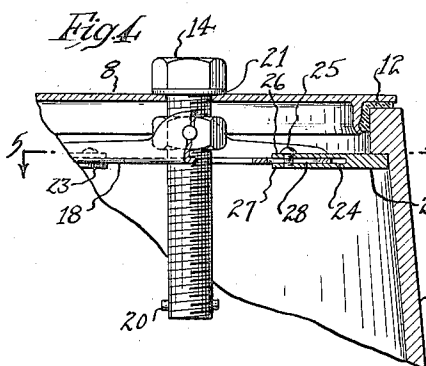
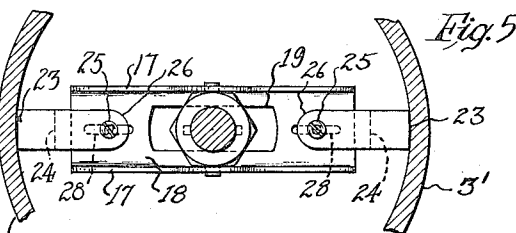
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CLEAN-OUT COVER

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CLEAN-OUT COVER

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4 Claims. (Cl. 137-76)

This invention relates, generally, to covers and the invention has reference, more particularly, to a novel cleanout cover especially adapted for covering and sealing cleanout openings of sewer and other piping.

Heretofore, it has been common practice to close cleanout openings in drainage ferrules of sewer or soil piping by the use of threaded plugs. The use of such plugs is often objectionable because they oftentimes leak and can withstand but little pressure. It is often difficult or even impossible to remove such plugs after they have been installed for a time owing to their tendency to become rusted in place. Often the threads of the plugs or the threads of the drainage ferrules are injured in removing the plugs so it is impossible to replace the plug and make the same tight. Furthermore, plugs made by different manufacturers often have various styles of threads thereon, so that when a plug is damaged when removing the same, it is sometimes difficult to obtain a similar plug for closing the cleanout opening.

The principal object of the present invention is to provide a novel cleanout cover that is adapted to be easily and quickly installed or removed whenever desired, the said cover fitting the pipe drainage ferrules regardless of the type or condition of the threads of such ferrules and providing a tight seal for the ferrule openings regardless of pressure conditions within the soil or sewer piping.

Another object of the present invention lies in the provision of a novel cleanout cover of the above character comprising a plate member having a depending annular flange adapted to project into the cleanout opening of the drainage ferrule, the said flange being so shaped as to force packing tightly against the inner wall of the drainage ferrule, thereby forming a tight joint; the said cleanout cover having fastening means including a bolt and pivoted arm for readily attaching the cover to the ferrule.

Other objects of this invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

The invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a sectional view of piping equipped with the novel cleanout cover of this invention.

Fig. 2 is a view similar to Fig. 1 but illustrates the manner of inserting or removing the cleanout cover.

Fig. 3 is a fragmentary sectional view taken substantially along line 3-3 of Fig. 1.

Fig. 4 is a fragmentary sectional view illustrating the cleanout cover applied to an unthreaded drainage ferrule, the ferrule being of such diameter as to require the use of extension pieces on the pivoted bolt arm, and

Fig. 5 is a fragmentary sectional view taken along line 5-5 of Fig. 4.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

Referring now to the said drawing, the reference numeral 1 designates soil pipe having a T 2 providing an opening for receiving the drainage ferrule 3. Ferrule 3 is sealed into the T 2 as by oakum 4 and lead 5. The drainage ferrule 3 enables access to the interior of the soil pipe for the purpose of testing the pipe or for cleaning out the same. The upper portion of the drainage ferrule 3 is provided with an inwardly directed annular boss 6 that is ordinarily threaded at 7 to receive a threaded plug, that is not shown in the drawing. Such plugs are usually fitted with a wrench hold, and in some cases a plug cannot be removed except by the use of excess force, resulting in the breaking of the threads 7 or the threads on the plug. When this occurs, it is impossible to replace the plug satisfactorily and in such case the cleanout cover of this invention can be employed to close and seal the cleanout opening in the drainage ferrule.

According to the preferred arrangement, the novel cleanout cover comprises a disc shaped cover plate 8 adapted to overlie the top of the drainage ferrule 3. Cover plate 8 is formed with a depending annular flange 9 that is positioned radially inwardly somewhat of the periphery of the cover plate 8 so as to project downwardly into the hollow interior of ferrule 3 when the cover plate is assembled on this ferrule. The outer surface of the depending flange 9 is shaped so as to provide an upper somewhat convex portion 10 and a lower concave portion 11 for cooperating with a gasket 12 in sealing the joint between the cover plate and the drainage ferrule.

The gasket 12 may be made of asbestos or other suitable material and is of angle shaped cross section so as not only to overlie the top of ferrule 3 but also to extend downwardly between the cover plate flange 9 and boss 6 of the ferrule 3. The convex upper portion 10 of flange 9 serves to push the packing or gasket 12 radially outwardly tightly against the threads 7 of boss 6, whereas the concave lower portion 11 of the

flange 9 serves to retain the gasket in place and prevents the same from being squeezed downwardly past the lower edge of the flange 9.

In order to secure the cover plate 8 to the drainage ferrule 3, the cover plate is provided with a central aperture 13 for receiving a bolt 14. A washer 21 is preferably interposed between the head of bolt 14 and the top of cover plate 9. Bolt 14 extends downwardly through aperture 13 and has a nut 15 threaded thereon. Nut 15 is provided with trunnions 16 that extend through bearing apertures provided in the side flanges 17 of a pivoted arm 18. Arm 18 is provided with a central longitudinal slot 19 to accommodate the bolt 14, the said slot 19 enabling arm 18 to turn through a desired angle with respect to the bolt shank. The ends of arm 18 are adapted to engage the underside of boss 6 at diametrically opposite points or at opposite sides of the drainage ferrule, to thereby retain cover plate 8 in position upon this ferrule, as shown in Fig. 1.

The center of gravity of the pivoted arm 18 is preferably slightly to one side of the trunnions 16 so that when this arm is free to turn, it will tilt as shown in Fig. 2, thereby enabling easy removal of this arm from within the drainage ferrule when desired. The shank of bolt 14 is shown as provided with suitable means at its lower end, such as the pin 20, for preventing the disconnection of nut 15 from bolt 14.

In use, assuming that it is desired to attach the cleanout cover to the ferrule 3, then the nut 15 carrying arm 18 is positioned on the lower portion of the shank of bolt 14 and the ends of arm 18 are made to engage the under surface of boss 6. The bolt 14 is then threaded down through the nut 15 causing flange 9 and gasket 12 to enter the mouth of the ferrule 3. As bolt 14 is tightened, it forces flange 9 further downwardly into the ferrule causing the convex surface portion 10 of this flange to press the gasket 12 outwardly against the threads 7 thereby sealing the joint between the cover plate and the ferrule.

The lower concave surface portion 11 of the flange 9 engages the lower portion of the gasket 12 and prevents the flow or escape of this gasket downwardly past the lower edge of flange 9. The lower peripheral surface portion of the cover plate also serves to press that portion of the gasket 12 overlying the top of ferrule 3 down upon the ferrule, thereby further sealing the joint between the cover plate and the ferrule. The cleanout cover now effectively closes and seals the mouth of the drainage ferrule.

When it is desired to remove the cleanout cover, it is merely necessary to unthread the bolt 14 causing nut 15 to move downwardly on the shank of this bolt so that pivoted arm 18 may tilt and disengage the boss 6, whereupon the cover may be removed. The bolt 14 and the nut 15 are preferably made of a non-corrodible metal such as brass so as to enable easy relative movement of these members at all times.

Some of the drainage ferrules are larger than others and in order to accommodate such larger ferrules, the pivoted arm 18 is arranged to carry extension pieces or members 23 (see Figs. 4 and 5). These extension pieces are slotted at 24 for receiving the end portions of the arm 18, the slot 24 serving to divide a part of the extension piece into upper and lower portions 26 and 27 that are adapted to respectively overlie and underlie the arm 18. A screw 25 projects downwardly through an aperture in upper portion 26, through a longitudinal slot 28 in the arm 18 and is threaded into

the lower portion 27. By loosening screw 25 the extension piece may be adjusted longitudinally with respect to arm 18 to accommodate any particular drainage ferrule, and the retightening of this screw will bind portions 26 and 27 against arm 18, thereby securing the extension piece in adjusted position.

The cover plates 8 may be made in a plurality of sizes to accommodate drainage ferrules of different diameters, whereas the extension pieces 23 enable a single size of arm 18 to accommodate all sizes of ferrules.

The novel cleanout cover of this invention may be readily applied to unthreaded drainage ferrules, such as the ferrule 3' shown in Fig. 4, in which case the flange 9 presses the gasket 12 against the smooth surface of boss 6 forming a tight joint. Thus, when using the novel cleanout cover of this invention it is not necessary to thread the drainage ferrules.

In practice, the cleanout cover has been found to readily withstand all pressures obtainable in practice without leaking and to be easily and quickly attached to or detached from drainage ferrules at any time regardless of the length of installation of the cover in use.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, as defined in the following claims, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A cleanout cover comprising, a cover plate having a depending annular flange spaced radially inwardly from the periphery thereof for projecting downwardly into the open mouth of a drainage ferrule, a bolt having its shank projecting downwardly through said cover plate, a nut threaded on said bolt shank, and an arm pivotally mounted on said nut so as to turn on an axis extending substantially at right angles to the axis of said bolt, the ends of said arm serving to releasably engage the interior of the drainage ferrule to thereby hold said cover plate down upon the top of the drainage ferrule.

2. A cleanout cover comprising, a cover plate having a depending annular flange spaced radially inwardly from the periphery thereof for projecting downwardly into the open mouth of a drainage ferrule, a gasket interposed between said cover plate and the drainage ferrule, said annular flange serving to press said gasket in sealed relation against the mouth of the drainage ferrule, a bolt extending downwardly through a central aperture provided in said cover plate, whereby the shank of said bolt is adapted to project into the drainage ferrule, a nut threaded on said bolt shank, and an arm pivotally mounted on said nut for up and down swinging movement and arranged so that its ends will directly engage opposite sides of the inner wall of said drainage ferrule to hold said cover plate tightly down upon the top of the drainage ferrule when said bolt is screwed down tight.

3. A cleanout cover comprising, a circular cover plate having a depending annular flange spaced radially inwardly from the periphery thereof for projecting downwardly into the open mouth of a drainage ferrule, a gasket interposed between said cover plate and the drainage ferrule, said annular flange having a convex outer surface portion serv-

ing to press said gasket radially outwardly against the mouth of the drainage ferrule, a bolt extending downwardly through a central aperture provided in said cover plate whereby the shank of
5 said bolt is arranged to project into the drainage ferrule, a nut threaded on said bolt shank, and an arm pivotally mounted on said nut so as to turn on an axis extending substantially at right angles to the axis of said bolt, the center of
10 gravity of said arm being to one side of its pivotal axis, whereby the same when free will assume an inclined position, said arm being arranged so that its ends will engage the inner wall of the

drainage ferrule to hold said cover tightly down upon the top of the drainage ferrule when said bolt is screwed down tight.

4. In a cleanout cover of the character described, a cover plate, a bolt extending downwardly through said cover plate, a nut threaded
5 on the shank of said bolt, an arm pivotally mounted on said nut, and extension pieces removably attached to the end portions of said arm for engaging opposite inner walls of a drainage fer-
10 rule, and means for adjusting said extension pieces longitudinally of said arm.

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