

United States Patent

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 [31] **A3564/68**

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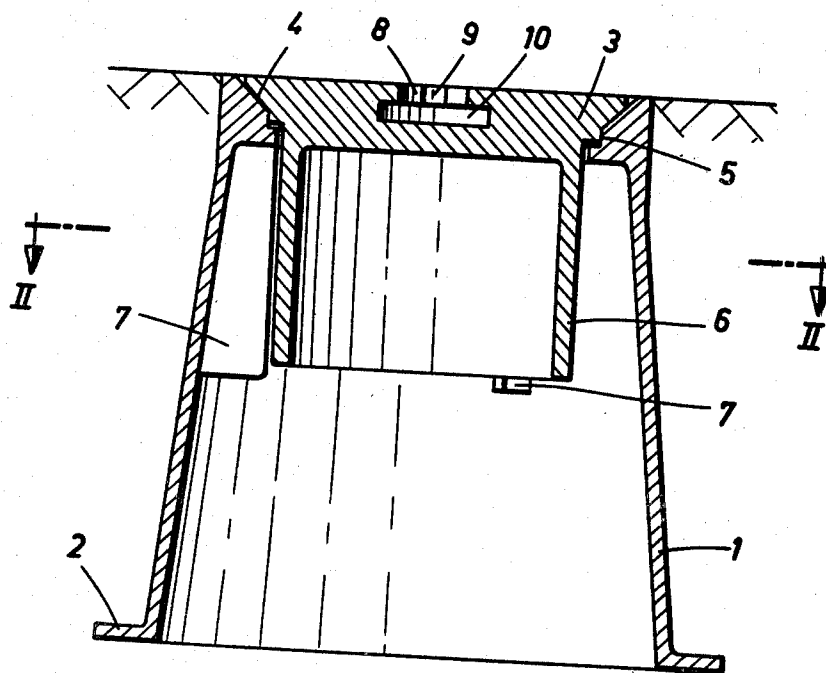
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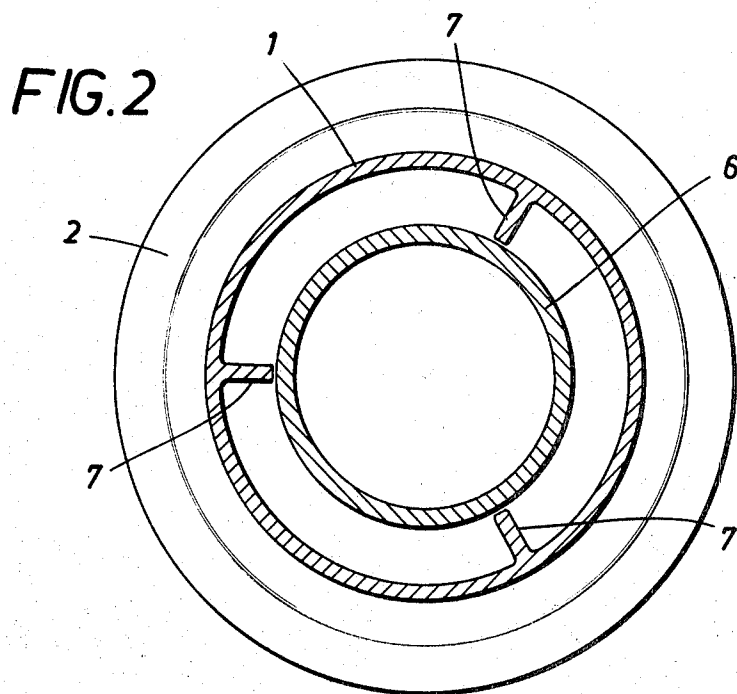
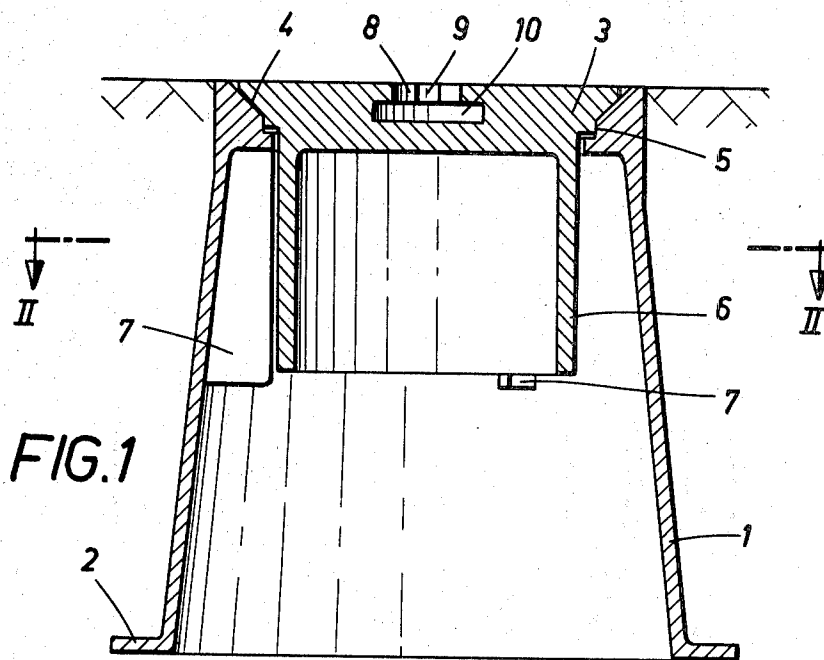
[54] **VALVE ACCESS BARREL FOR USE IN STREETS**
 6 Claims, 8 Drawing Figs.

[52] U.S. Cl..... **137/371**
 [51] Int. Cl..... **F16e 5/00**
 [50] Field of Search..... **137/363-372**

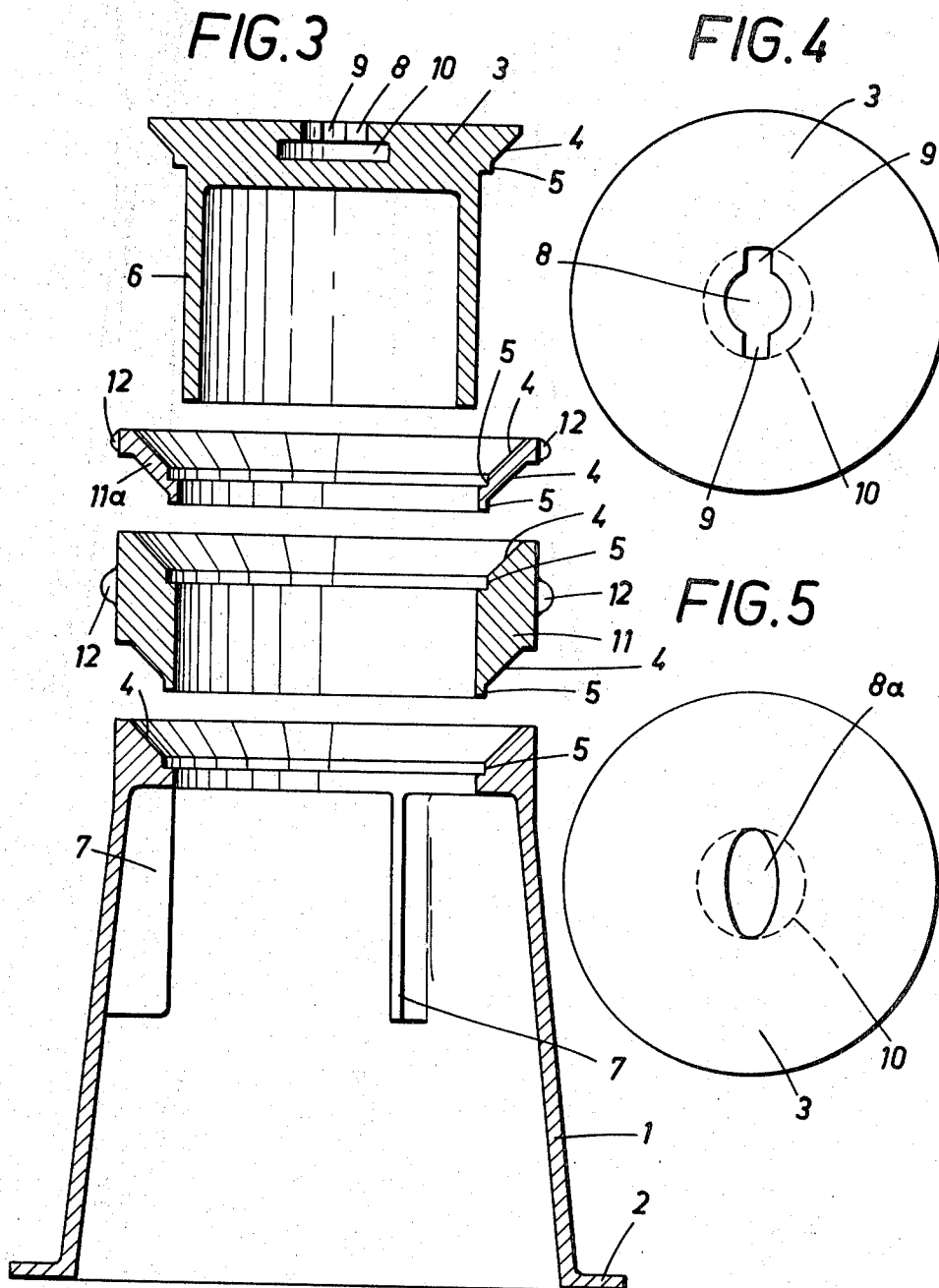
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ABSTRACT: A barrel body structure having a bottom flange and open top and bottom ends has detachably connected to it a cover closing said barrel body structure at said top end thereof. A pilot extension is carried by said cover and depends into said barrel body structure and engages the same. The cover has a largest outside diameter which is smaller than the outside diameter of said barrel body structure at said top end thereof. Said cover is formed with a downwardly facing, conical seat face. The barrel body structure is formed with an upwardly facing, conical seat face in mating engagement with said seat face of said cover.

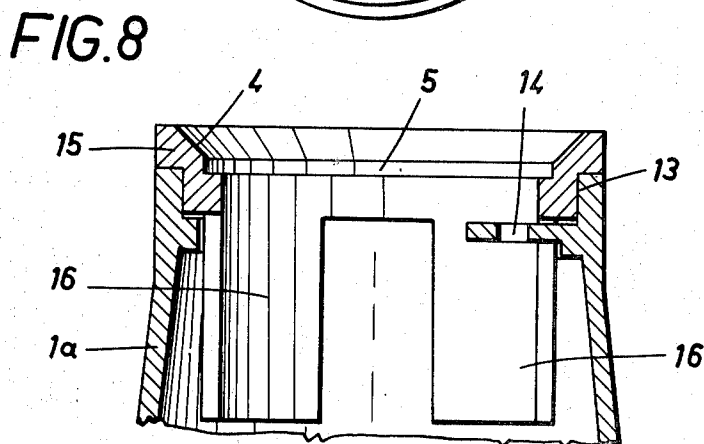
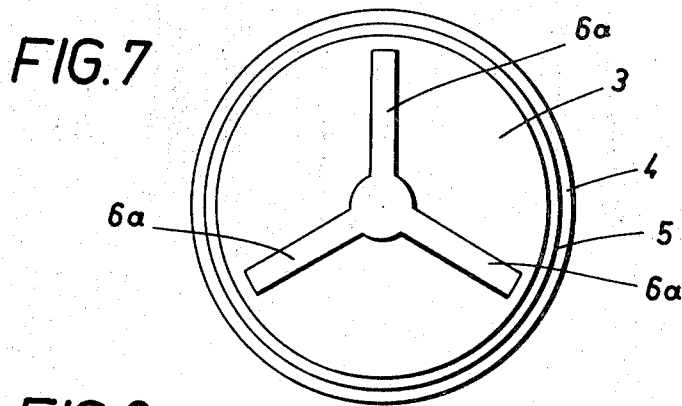
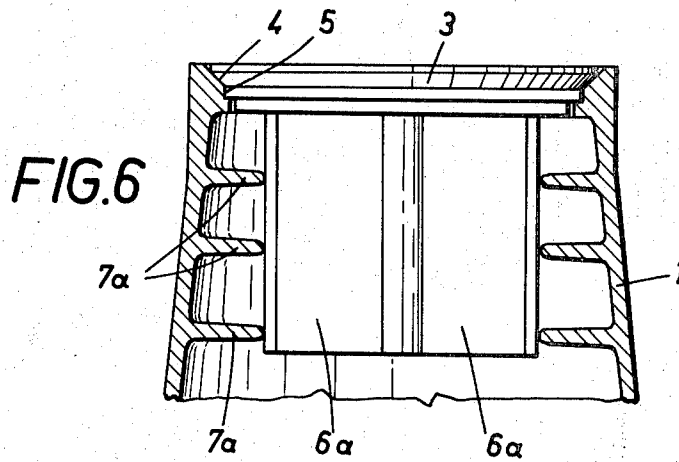




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VALVE ACCESS BARREL FOR USE IN STREETS

Valve access barrels for use in streets consist, as a rule of a frustoconical or cylindrical, hollow barrel body, which is provided with a bottom flange, open at the bottom and adapted to be closed by a cover at its top, and are incorporated in the street so that their top end face or the top face of the cover is aligned with the street surface and the barrel shields on all sides the top end portion of the actuating stem or the like of the valves incorporated in underground water mains so that a wrench can be applied to the end portion of the stem when the cover has been removed.

It is an object of the invention to provide a valve access barrel which is simple in structure, can be adjusted to different street levels without need for additional alterations and ensures a good fixation of the cover without need for special fixing parts.

The invention relates to a valve access barrel which comprises a hollow barrel body, which is frustoconical or cylindrical, provided with a bottom flange, open at the bottom and adapted to be closed at the top by a cover and to be increased in height by selectively usable, annular attachments, the barrel body, attachments and cover having conical seat faces which mate each other, the outside diameter of the attachments corresponding to the outside diameter of the barrel body at the top thereof and the largest outside diameter of the cover being smaller than said outside diameter of the barrel body at the top thereof. In such a valve access barrel, the above-mentioned object is accomplished in that the cover is adapted to fit directly into the barrel body and each attachment and carries a pilot extension, known per se, which extends into the barrel body and preferably cooperates with ribs of the barrel body. Because the cover need not be inserted into a separate connector but may be inserted into each attachment as well as into the barrel body itself, there is no need for the previous connector, which could be closed only by the cover. The basic structure now consists only of the barrel body and the cover. The selectively usable attachments may simply have an annular configuration. If the height of the valve access barrel is to be increased because the street level is to be changed, it is sufficient to remove the cover, apply the proper attachment and close the latter with the cover. There is no need to break away street covering material surrounding the barrel because the top end face of the barrel or cover is exposed in any case and there is no need to lift a part which has a cylindrical periphery bonded to the concrete or other material of the street covering. As the pilot extension is carried by the cover itself and extends into the barrel body through any attachment which has been interposed, and the barrel body has also ribs which cooperate with the pilot extension, the cover will be reliably held in any case without need for a fixing bolt or the like. It will be understood that the pilot extension of the cover will locate any attachment in position because it extends through the same.

In a development of the invention, each of the conical seat faces of the barrel body, attachments and cover is downwardly adjoined by a cylindrical centering surface, which may be subsequently machined without special expenditure so that the fitting of the mating parts will be further improved.

Old valve access barrels having a cylindrical or prismatic seat for the cover are often still installed in streets. To enable a modification of such barrels or to increase them in height according to the teachings of the invention, a usual barrel body having a cylindrical or prismatic seat for the cover is provided with a transitional attachment, which fits said seat and forms a conical seat face and an adjoining centering surface for the cover and any remaining attachment and carries a hollow cylindrical guide, which depends into the barrel body and serves to guide the pilot extension of the cover. Said guide may be divided into segments.

Several embodiments of the invention are shown by way of example on the drawing, in which:

FIGS. 1 and 2, respectively, are a vertical axial sectional view and a horizontal transverse sectional view taken on line II-II of FIG. 1 and show a built-in valve access barrel.

FIG. 3 is an axial sectional view showing a valve access barrel with two attachments before the parts are assembled.

FIGS. 4 and 5 are top plan views showing two different covers.

FIG. 6 is an axial sectional view showing the top portion of a valve access assembly provided with a cover.

FIG. 7 is a bottom view showing the cover of FIG. 6.

FIG. 8 is an axial sectional view showing an old valve access barrel provided with a transitional attachment.

The valve access barrel comprises a frustoconical, hollow barrel body 1, which has a bottom flange 2 and an open bottom and is closed at its top by a cover 3. The barrel body is provided with conical seat faces 4 for engaging the cover; these seat faces are downwardly adjoined by cylindrical centering surfaces 5. The cover 3 carries a hollow cylindrical pilot extension 6, which extends into the barrel body and cooperates with three longitudinally extending, radial ribs 7 formed in the barrel body. The pilot extension may be formed with longitudinal slots dividing it into segments. The cover is formed with an undercut central bore 8, at which the cover can be engaged and lifted. The bore 8 has two diametral slots 9, which extend to the periphery of the undercut portion 10 (FIG. 4) so that a wrench which is provided at its end with a crosspin or which is formed like a hammer head can be inserted and then turned to interlock with the cover 3. FIG. 5 shows a modification in which the bore 8a is oval and flares downwardly to form the cylindrical undercut portion 10.

As is shown in FIG. 3, the height of the barrel may be changed and adjusted to a desired street level by the use of annular attachments 11, 11a of different height on the barrel body 1. These attachments 11, 11a have conical seat faces 4 and cylindrical centering surfaces 5 like those of the cover 3 and the barrel body 1 so that the cover 3 can be inserted into any of the attachments 11, 11a just as into the barrel body 1. The attachments are provided at their periphery with protruding noses 12, by which the attachments are anchored in the surrounding street covering against rotation.

In the embodiment shown in FIGS. 6 and 7, the pilot extension of the cover 3 is formed by three longitudinally extending, radial ribs 6a, which bear on transverse ribs 7a of the barrel body 1.

According to FIG. 8, the barrel body 1a has a conventional, cylindrical seat 13 for engaging the cover. The existing cover is hinged to an eccentric pin, which extends through the bore 14 and is capable of a limited axial displacement so that the cover can be lifted out and pivotally moved to the side. To alter such an old barrel in accordance with the teachings of the invention, the existing cover and its mounting pin are removed. A mating transitional attachment 15 is inserted into the seat 13 for the cover and is formed with the conical seat face 4 and the adjoining centering surface 5 for a new cover or the attachments. The transitional attachment 15 carries a hollow cylindrical guide 16, which depends into the barrel body 1a and is divided into individual segments. The guide 16 serves to guide the pilot extension of the cover. In this case, the pilot extension of the cover must also be longitudinally slotted so as to accommodate the portion which is formed with the bore 14. Hence, the transitional attachment 15 enables an increase of the height of old valve access barrels and a provision thereof with the cover according to the invention.

I claim:

1. A valve access barrel for use in streets, which comprises a barrel body structure having a bottom flange and open top and bottom ends, a cover detachably connected to and closing said top end thereof, and a pilot extension carried by said cover and depending into said barrel body structure and engaging the same, said cover having a largest outside diameter which is smaller than the outside diameter of said barrel body structure at said top end thereof and being formed with a downwardly facing, conical seat face, said barrel body structure being formed with an upwardly facing, conical seat face in mating engagement with said seat face of said cover, and comprising an annular attachment structure which is formed with said open top end of said barrel body structure and said upwardly

3

facing, conical seat face, and with a downwardly facing conical seat face, and a barrel body member detachably connected to said annular attachment structure and formed with said bottom flange and said open bottom and with an upwardly facing, conical seat face in mating engagement with said downwardly facing, conical seat face of said attachment structure, said barrel body member having an open top end, where it has the same outside diameter as said annular attachment at the top end of said barrel body structure, said downwardly facing, conical seat face of said cover being matingly engageable with said upwardly facing, conical seat face of said barrel body member when said annular attachment has been removed from said barrel body member and said cover, and said pilot extension depending into and engaging said barrel body member.

2. A valve access barrel as set forth in claim 1, in which said

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barrel body member is formed on its inside with ribs engaging said pilot extension.

3. A valve access barrel as set forth in claim 2, in which: said ribs of said barrel body member comprise longitudinally extending, radial ribs; and said pilot extension comprises a hollow cylinder.

4. A valve access barrel as set forth in claim 1, in which said barrel body member, annular attachment structure and cover are formed each with a cylindrical centering surface downwardly adjoining each of said conical seat faces thereof.

5. A valve access barrel as set forth in claim 1, in which said attachment structure is formed on its periphery with protruding noses.

6. A valve access barrel as set forth in claim 1, in which said barrel body member is frustoconical.

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