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(54) **Access panel for pole**

Zugangspanel für Pfosten

Panneau d'accès pour poteau

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(56) References cited:
GB-A- 2 110 265
GB-A- 2 255 577

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Description

[0001] The present invention relates to an access panel for a pole.

[0002] In the field of the installation of street lighting poles or the like it is known that an opening is formed at a certain easily reachable height of the pole, which allows access to the inside where a terminal strip with associated accessories for connecting the electric components is accommodated; said opening usually has a vertically elongated rectangular shape with semicircular short sides, and said opening is closed with an access panel which is fixed by acting on, two or more screws for coupling to the pole: coupling is achieved by screwing the screws into internal anchors which, through of the screwing action, clamp the edge of the opening.

[0003] The coupling of the access panel to the pole is of course hermetic to prevent water from entering the pole and reaching the terminal strip.

[0004] Conventional access panels for poles as disclosed in GB-A-2 110 265 suffer some drawbacks related to the frequent presence of sharp edges and elements which protrude toward the outside of the access panel, causing the possibility of interference when objects or people pass close to the pole; to the less than ideal design of the internal anchors, which often entails the need to use add-on nuts and helical springs for mounting which lead to higher costs; to a sometimes less than perfect watertightness due both to the passage of the fixing screws and to the perimetric sealing gasket, which is not effectively coupled to the access panel.

[0005] Moreover, the pole fixing screws can be actuated with conventional screwdrivers or with screwdrivers with a cross-shaped or star-shaped head or with hexagonal profiles which are easily available and can be replaced with makeshift tools which allow vandals, children or the like to open the access panel.

[0006] The technical aim of the present invention is to obviate the above-cited drawbacks of conventional devices, i.e., to provide an access panel for poles which has a profile with no external elements or edges, has simplified anchors which do not require add-on springs and nuts, has optimum watertightness and in which the fixing screws cannot be operated without a specific tool supplied with the access panel and not commercially available.

[0007] Within the scope of this aim, an object of the present invention is to achieve the intended aim with a structure which is simple, relatively easy to provide in practice, safe in use, effective in operation and relatively low in cost.

[0008] This aim, this object and others are achieved by the present access panel for poles as defined in claim 1.

[0009] Further characteristics and advantages of the present invention will become apparent from the following detailed description of a preferred but not exclusive embodiment of an access panel for poles according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a rear view of an access panel for poles according to the invention;
Figure 2 is a sectional top view of the access panel of Figure 1;
Figure 3 is a sectional side view, taken along the line III-III of Figure 1;
Figures 4a, 4b, 4c, 4d and 4e are views of the effraction-resistant bushings for supporting the effraction-resistant screws on the access panel;
Figures 5a, 5b, 5c and 5d are views of a bracket for coupling the access panel to the pole;
Figures 6a and 6b are a front view and a sectional side view of the sealing gasket arranged between the access panel and the pole;
Figures 7a and 7b are enlarged-scale views of an effraction-resistant screw for fixing the access panel to the pole.

[0010] With reference to the above figures, the reference numeral 1 generally designates an access panel for poles P according to the invention.

[0011] The access panel 1 is constituted by a vertically elongated shell 2 formed by pressing rustproof metal alloys: the shell 2 is shaped so as to have a substantially cylindrical profile which wraps around the pole, has a rectangular and vertically elongated shape in which the shorter side 3a and 3b are semicircular, is peripherally provided, toward the outside, with a smoothly rounded edge 4 and has absolutely no parts that protrude toward the outside of the profile.

[0012] The shell 2 is externally provided, proximate to its ends, with two recessed seats 5 and 6 which are crossed by respective through holes 7 for the snap insertion of rustproof retention bushings 8 made of a thermoplastic material; the bushings 8 have a portion 9 which has a larger diameter, with a recess 10 for the head 11 of an effraction-resistant screw 12; said recess is provided, along its perimeter, with three spaced teeth 13 for retaining the head of the screw; the bushings 8 have a portion 14 which has a reduced diameter, is crossed by a hole 15 for the stem of the screw 12, is externally provided, at its end, with an annular raised portion 16 for snap coupling in the through holes 7 of the recessed seats 5 and 6, and is longitudinally provided with three notches 17 which allow its deformation for coupling to the shell 2.

[0013] In the head 11 of the effraction-resistant screw there is provided an axial symmetrical cavity 18 with three sides 19, each of which is cylindrical, has its concavity directed toward the axis of the screw and its radius of curvature arranged so as to coincide with the mutually opposite vertex: in this manner it is impossible to operate the screw with a screwdriver or with tools which are commercially available; if they are inserted, such

tools merely turn idly by pivoting in succession on the various edges; any attempt at actuation with improper tools is further ineffective.

[0014] The screws screw into substantially central threaded holes 20 of two corresponding shaped brackets 21, respectively an upper one and a lower one, which are perpendicular to the screw and are designed for coupling to the pole: the shaped brackets 21 are obtained by die-pressing high-strength materials, such as steel, and have a portion 21a which is directed toward the center of the shell, is folded toward the outside of the pole and is shaped like a fork 22 for nonrotational coupling to a corresponding pin 23 located inside the shell.

[0015] On the other portion 21b, the bracket has two complementary lateral folds 24 for adapting to the internal profile of the pole P in order to eliminate the possibility of unauthorized extraction and/or removal.

[0016] In the lower region, the shell 2 is internally provided with a pair of symmetrical pins 25 and 26 which are adapted to center the access panel in the slot 27 of the pole P and to prevent it from sliding downward during the operations for mounting on the pole.

[0017] The shell is peripherally provided, toward the pole, with a perimetric channel 28 for a gasket 29 made of a material such as rubber, which has a substantially elliptical cross-section; the channel 28 is provided with sets of staggered teeth 30a, 30b, 31 distributed on its two facing sides in order to retain the gasket in the access panel.

[0018] A threaded seat 32 for a screw for electrical connection to the ground is provided inside the access panel.

[0019] It is noted that the mutual retention of the effraction-resistant screw and of the access panel is achieved by interposing material which prevents electrolytic oxidation, that assembly of the various components is simplified and that sharp comers and externally protruding elements have been eliminated.

[0020] It has thus been shown that the invention achieves the intended aim and object.

[0021] The invention thus conceived is susceptible of numerous modifications and variations, all the details may also be replaced with other technically equivalent elements, within the scope of the claims.

[0022] In practice, the materials employed, as well as the shapes and the dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

[0023] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. An access panel (1) for poles (P), constituted by a vertically elongated and wraparound shaped shell (2) **characterized in that** it is provided, in its external side proximate to its ends, with two recessed seats (6) with snap inserted rustproof retention bushings (8) with respective effraction-resistant fixing screws (12) which are screwed substantially at the center of corresponding shaped brackets (21) in the internal side of the shell for coupling to the pole which, at their end (22) directed toward the center of the shell, are fork-shaped for a nonrotational coupling with pins (23) also located in the internal side of the shell, said shell having, in its internal side for toward the pole and in a peripheral region, a perimetric channel (28) for a gasket (29).

2. The access panel according to claim 1, **characterized in that** said shell has, in an outward peripheral region, a rounded edge (4) which blends with the pole and has no parts that protrude from its contour.

3. The access panel according to claim 1, **characterized in that** said channel has sets of staggered teeth (30a, 30b, 31) distributed on its two facing sides in order to retain the gasket.

4. The access panel according to claim 1, **characterized in that** said shell has, in a lower inward region, a pair of symmetrical pins (25, 26) which are adapted to center it in the opening of the pole and to prevent it from sliding downward during mounting on the pole.

5. The access panel according to claim 1, **characterized in that** said bushings have a portion (9) which has a larger diameter and is provided with a recess (10) for the head (11) of said effraction-resistant screw which has three perimetrically spaced retention teeth (13), and a portion (14) which has a reduced diameter and is crossed by a hole (15) for the stem of the screw, is externally provided, at its end, with an annular raised portion (16) for snap coupling, and is longitudinally provided with notches (17) which allow its deformation.

6. The access panel according to claim 1, **characterized in that** said shaped brackets are made of high-strength material and are adapted to prevent the forced and/or unauthorized extraction of the access panel from the door.

7. The access panel according to claim 1, **characterized in that** said effraction-resistant screws have, in their head, an axial three-sided symmetrical cavity (18), each side (19) having a cylindrical shape, a concavity which is directed toward the axis of the

screw, and a radius of curvature which coincides with the mutually opposite vertex, such as to not allow its actuation with a screwdriver or with other commercially available tools.

Patentansprüche

1. Zugangspanel (1) für Masten (P) bestehend aus einer vertikal verlängerten und wie eine Ummantelung geformten Schale(2), **dadurch gekennzeichnet, dass** sie auf ihrer Außenseite in der Nähe ihrer Enden mit zwei ausgenommenen Sitzen (6) mit eingerasteten nichtrostenden Sicherungsbuchsen (8) mit entsprechenden bruchsicheren Befestigungsschrauben (12) versehen ist, welche im mittleren Bereich entsprechend geformter Befestigungsarme (21) auf der Innenseite der Schale festgeschraubt werden, um diese mit dem Mast zu verbinden, wobei die Befestigungsarme an ihrem der Mitte der Schale zugewandten Ende (22) gabelförmig ausgebildet sind zur nicht verdrehbaren Verbindung mit Stiften (23), die ebenfalls auf der Innenseite der Schale angebracht sind, wobei diese Schale auf ihrer dem Mast zugewandten Innenseite und im Randbereich eine außen umlaufende Nut (28) für eine Dichtung (29) aufweist.

2. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Schale im äußeren Randbereich eine Abrundung (4), die mit dem Mast abschließt, und keine Teile aufweist, die von ihrer Kontur abstehen.

3. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Nut Sätze versetzt angeordneter Zähne (30 a, 30 b, 31) aufweist, die an ihren beiden gegenüberliegenden Seiten verteilt angeordnet sind, um die Dichtung festzuhalten.

4. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Schale im unteren inneren Bereich ein Paar symmetrischer Stifte (25, 26) aufweist, die das Panel in der Öffnung des Mastes zentrieren und es daran hindern, während der Montage auf dem Mast herunterzurutschen.

5. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Buchsen aus einem Teil (9), das einen größeren Durchmesser aufweist und für den Kopf (11) der bruchbeständigen Schraube mit einer Ausnehmung (10) versehen ist, die drei umfangsseitig beabstandet angeordnete Haltezähne (13) aufweist, und einem Teil (14) mit einem verringertem Durchmesser und einer Bohrung (15) für den Schraubenschaft bestehen, wobei letzteres Teil auf der Außenseite an seinem Ende mit einem ringförmigen erhobenen Teil (16) für eine Schnappverbindung und mit längsverlaufenden Schlitzen (17) versehen ist, die seine Verformung ermöglichen.

6. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die Befestigungsarme aus hochfestem Material bestehen und so ausgebildet sind, dass sie die gewaltsame und/oder unbefugte Entfernung des Zugangspanels aus der Tür verhindern.

7. Zugangspanel nach Anspruch 1, **dadurch gekennzeichnet, dass** die bruchbeständigen Schrauben in ihrem Kopf einen axialen, dreiseitigen symmetrischen Hohlraum (18) aufweisen, wobei jede Seite (19) eine zylindrische Form, eine auf die Schraubenachse gerichtete Rundhöhlung und einen Krümmungsradius aufweist, der mit dem auf der jeweils entgegengesetzten Seite angeordneten Scheitelpunkt zusammenfällt, derart, dass eine Betätigung mit einem Schraubenzieher oder mit anderen im Handel erhältlichen Werkzeugen nicht möglich ist.

Revendications

1. Panneau d'accès (1) pour poteaux (P) constitué par une coque verticalement allongée et en forme de plaque enveloppante (2), **caractérisé en ce qu'**il comprend, dans son côté externe, à proximité de ses extrémités, deux logements en renfoncement (6) avec des paliers de retenue antirouille insérés par enclenchement (8) avec des vis de fixation anti-effraction respectives (12) qui sont vissées sensiblement au centre de supports de forme correspondante (21) dans le côté interne de la coque, à des fins de couplage au poteau, qui, à leur extrémité (22) dirigée vers le centre de la coque, sont en forme de fourche pour un couplage non-rotatif avec des broches (23) également situées dans le côté interne de la coque, ladite coque ayant dans son côté interne vers le poteau et dans une région périphérique, un canal périphérique (28) pour un joint d'étanchéité (29).

2. Panneau d'accès selon la revendication 1, **caractérisé en ce que** ladite coque a, dans une région périphérique vers l'extérieur, un bord arrondi (4) qui se confond avec le poteau et n'a pas de pièce qui dépasse de son contour.

3. Panneau d'accès selon la revendication 1, **caractérisé en ce que** ledit canal a des ensembles de dents décalées (30a, 30b, 31) répartis sur ses deux côtés se faisant face afin de retenir le joint d'étanchéité.

4. Panneau d'accès selon la revendication 1, **caractérisé en ce que** ladite coque a, dans une ré-

gion intérieure inférieure, une paire de broches symétriques (25, 26) qui sont adaptées pour la centrer dans l'ouverture du poteau et pour l'empêcher de glisser vers le bas pendant le montage sur le poteau.

5. Panneau d'accès selon la revendication 1, **caractérisé en ce que** lesdits paliers ont une partie (9) qui a un diamètre plus large et comporte un renfoncement (10) pour la tête (11) de ladite vis anti-effraction qui a trois dents de retenue (13) espacées sur le périmètre, et **en ce qu'**une partie (14) qui a un diamètre réduit et qui est traversée par un trou (15) pour la tige de la vis, comporte à l'extérieur, à son extrémité, une partie annulaire en saillie (16) pour un couplage par enclenchement, et comporte longitudinalement des encoches (17) qui permettent sa déformation.

6. Panneau d'accès selon la revendication 1, **caractérisé en ce que** lesdits supports formés sont faits d'un matériau à résistance élevée et sont adaptés pour empêcher l'extraction forcée et/ou non-autorisée du panneau d'accès de la porte.

7. Panneau d'accès selon la revendication 1, **caractérisé en ce que** lesdites vis anti-effraction ont, dans leur tête, une cavité symétrique (18) axiale à trois côtés, chaque côté (19) ayant une forme cylindrique, une concavité qui est dirigée vers l'axe de la vis, et un rayon de courbure qui coïncide avec l'apex mutuellement opposé, de façon à ne pas permettre son actionnement avec un tournevis ou avec d'autres outils disponibles dans le commerce.

FIG.1

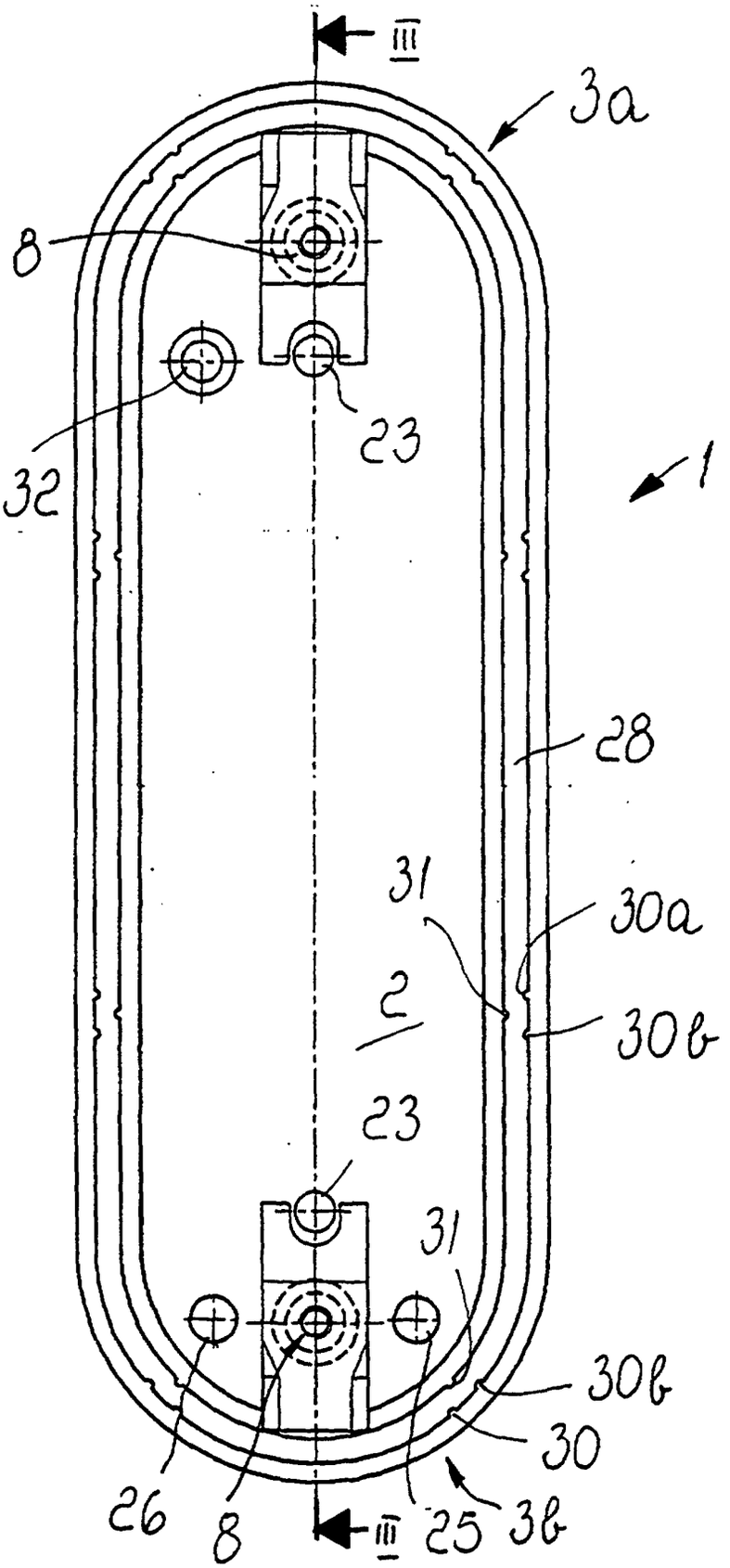


FIG. 2

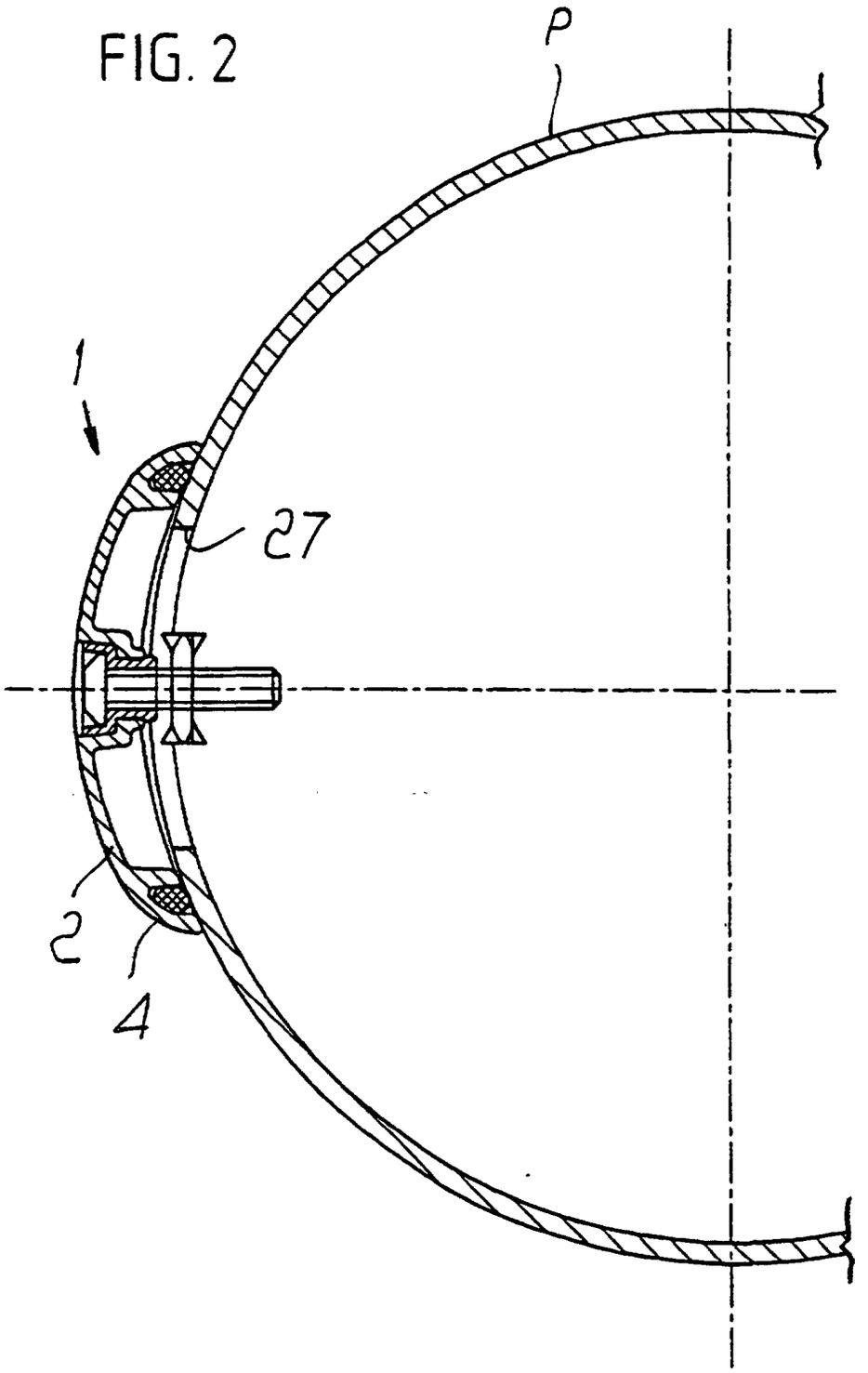


FIG.3

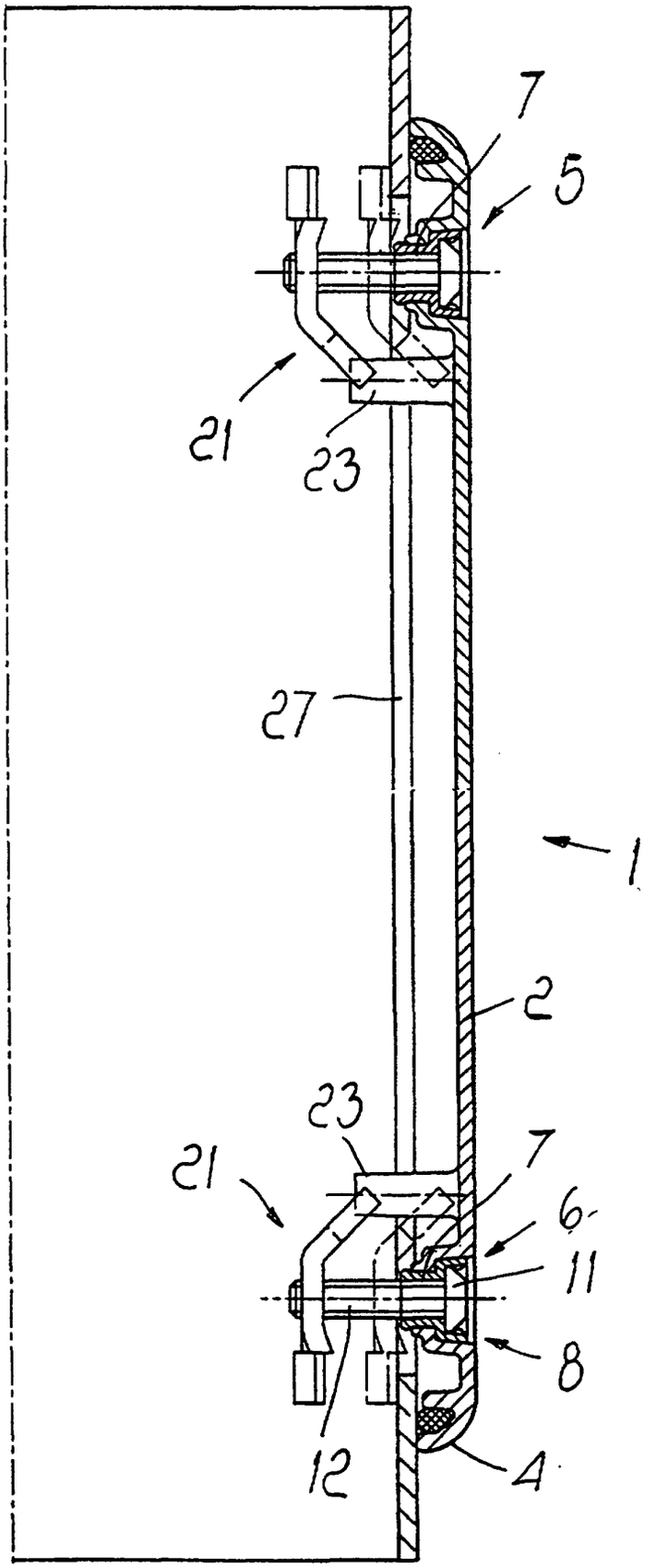
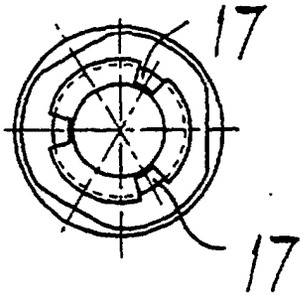


FIG.4a



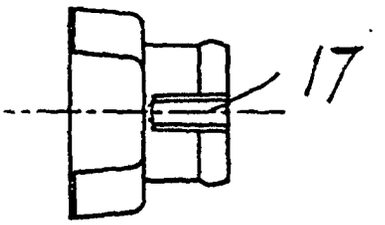


FIG.4b

FIG.4c

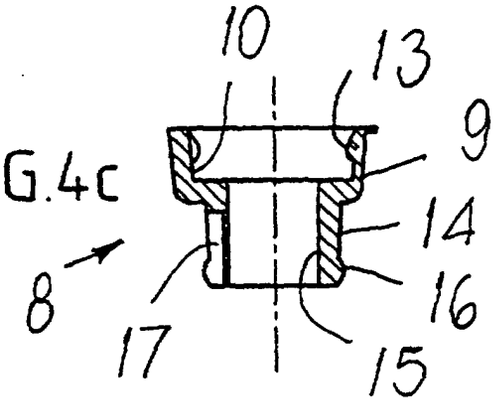
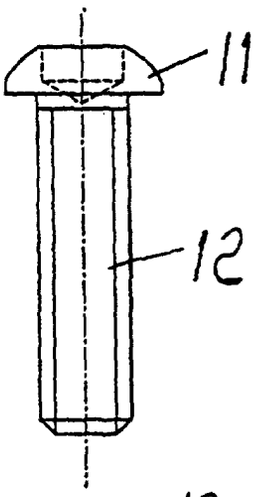


FIG.7a



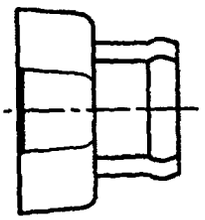


FIG.4e

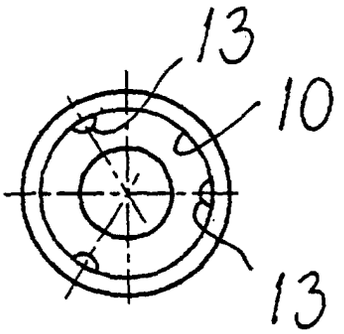


FIG.4d

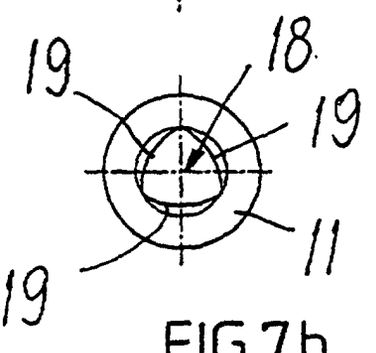


FIG.7b

FIG. 5a

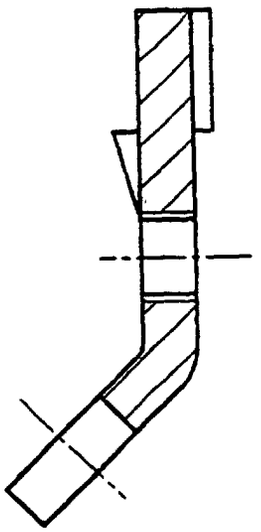
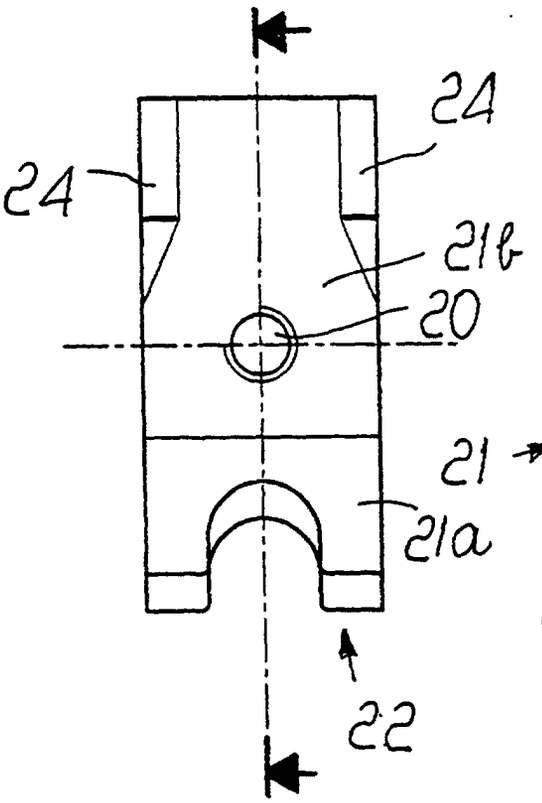


FIG. 5b



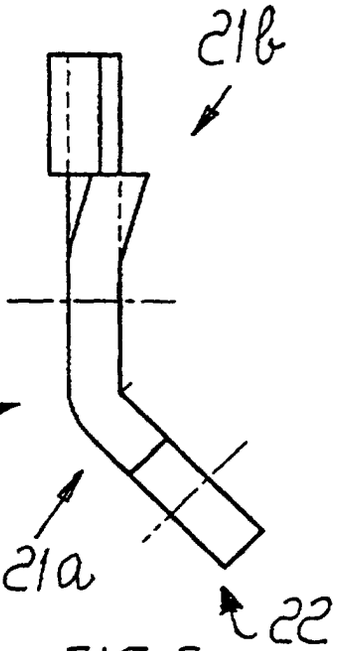


FIG. 5c

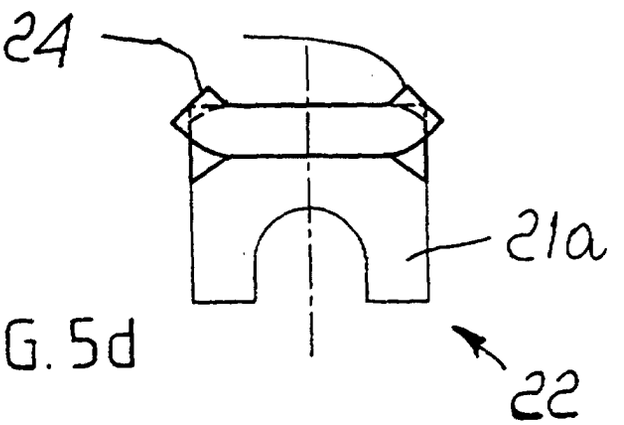


FIG. 5d

FIG. 6a

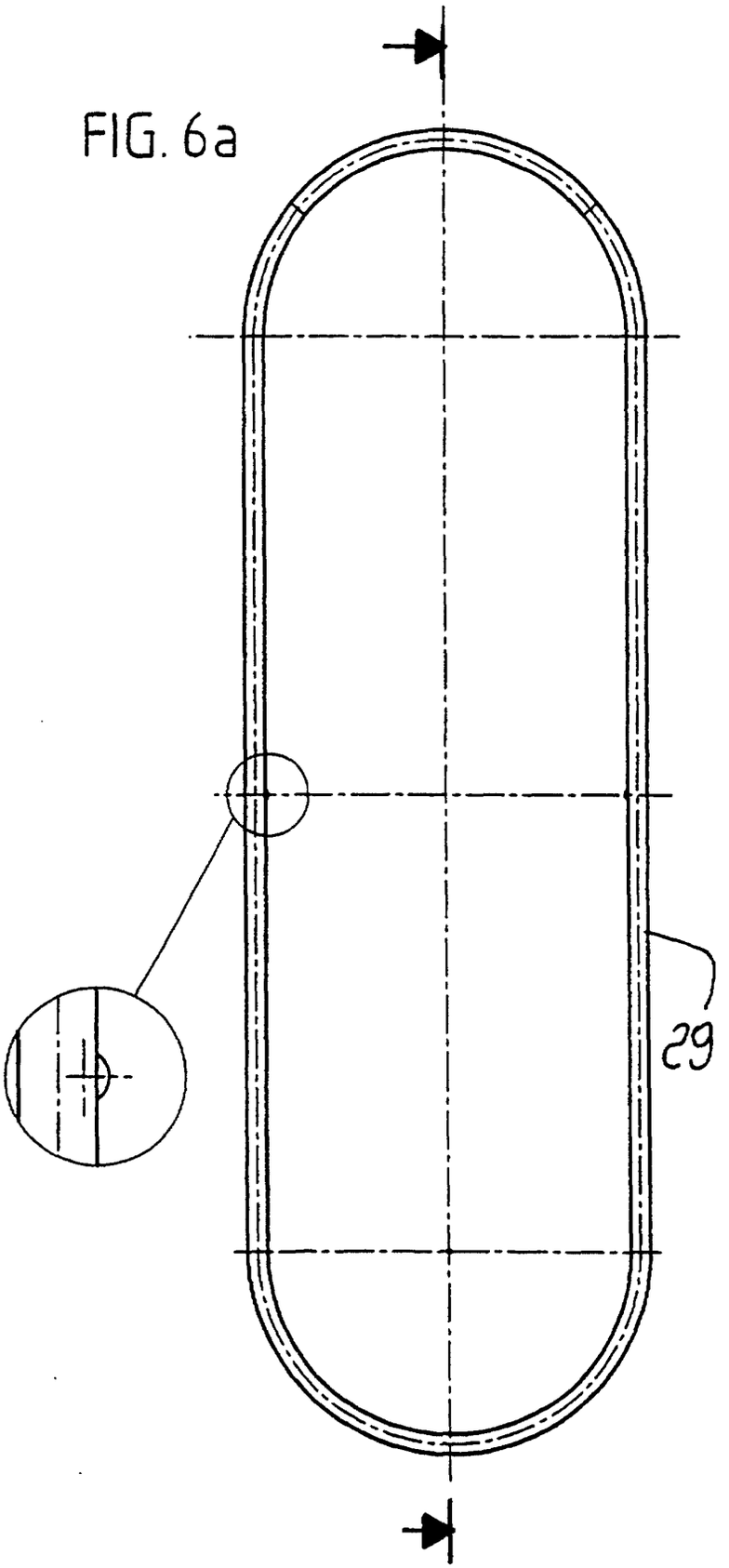


FIG. 6b

