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**(54) DEVICE FOR PROTECTING LOCKS**

SCHUTZVORRICHTUNG FÜR EIN SCHLOSS

DISPOSITIF DU PROTECTION D'UNE SERRURE

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## Description

**[0001]** The present invention relates to a device for protecting locks.

**[0002]** Nowadays locks are known which are adapted to allow the closure and opening of a door or of a gate, which essentially comprise an opening cylinder provided with a seat for inserting a suitable key which is adapted to allow the activation of the cylinder and therefore the unlocking of the lock.

**[0003]** Such cylinders of known types are usually made of brass or in any case of materials which do not have a high mechanical resistance, thus lending themselves to be easily bypassed by means of drilling and/or breakage and/or jemmying.

**[0004]** In order to protect such cylinders of known types from possible forced entry, it is common to fix a special covering element or base to the lock, in a position that is such as to envelop one end of the cylinder, such special covering element or base being essentially cylindrical and having a front opening which is partially obstructed by a rotating protection disk in which a slot is defined which is adapted to allow the insertion of the key.

**[0005]** Such protection disk therefore constitutes a defence for the cylinder against drilling carried out with helical bits, but at the same time it allows the insertion and rotation of the key in the cylinder which is held in the base.

**[0006]** Such bases of known types have a drawback, however: they are mounted from the outside and fixed to the lock by means of screws which are embedded in the panel of the door, which is constituted by various materials such as wood, plastic, sheet metal etc.

**[0007]** Normally, between the panel and the base there is a space, or "clearance", which is covered and hidden by a decorative plate which is fixed to the panel.

**[0008]** Forced entry is usually made possible by removing the decorative plate from the panel of the door, since the plate is generally fixed to the door with two screws which can be removed from the outside, and then inserting a pipe or other tool under the escutcheon in such a way that, by forcing it, the two fixing screws of the lock are ripped out and, at the same time, the cylinder is broken, thus making it easy to open the door from the outside.

**[0009]** A drawback of the solutions described above is therefore constituted by the ease of removing the decorative plate from the panel of the door or gate.

**[0010]** Italian patent application no. TV2007A000195 which was filed on December 7, 2007, discloses a structure of an anti-forced entry and anti-jemmying protection device, particularly for a lock.

**[0011]** Advantageously, the structure comprises a base that is substantially cylindrical and associated or able to be associated axially with the cylinder of the lock, and on the lateral surface of which, starting from the end of the base facing the side opposite to the lock, a first and a second annular recess are formed.

**[0012]** Axially to the base, a first seat is formed for fixing

the cylinder which is arranged in such a way that the access keyhole for a suitable key is in a position that is offset from the longitudinal centre axis of the base.

**[0013]** In the base holes are formed, laterally to the first seat and axially to the base itself, which are adapted for the insertion of suitable screws.

**[0014]** Advantageously, axially to the base, an eyelet is formed which is preferably circular in plan and, in use, faces the keyhole formed in the cylinder of the lock.

**[0015]** Conveniently, the eyelet has dimensions which are such as to allow the insertion and rotation of the shaft of the key which in this way can be inserted in the keyhole of the cylinder of the lock.

**[0016]** Advantageously but not necessarily, a keyhole protection disk is rotatably inserted in the eyelet, and diametrically to this disk there is a suitable opening which has a shape and arrangement that are such as to allow the passage of the shaft of the key through it.

**[0017]** There is also a decorative plate which is provided with a cylindrical body upon the bottom of which two fins protrude radially, which are shaped approximately complementary to the first and the second annular recess in the base.

**[0018]** The decorative plate is inserted in the base at the back, by insertion of the fins into the first and the second recess, while special screws lock the base and the decorative plate to the lock which is arranged for example in the door.

**[0019]** The fins inserted in the first and the second annular recess tend to prevent the exit of the decorative plate from its seat, even if the screws are loosened, thus preventing the plate from being ripped off allowing the base of the lock to be pulled out with a burglar's tools.

**[0020]** The principal drawback that can be found in this known device consists in the fact that the fins, when an attempt is made to force entry, can easily be bent; this produces a level of play with respect to the first and the second recess in which they are inserted, which allows the extraction of the decorative plate if it is pulled axially.

**[0021]** US 1 579 139 discloses a locking plate for receiving and holding against rotation a cylinder lock. Further arrangements that prevent forced actuation of a door lock are disclosed in DE 426 263 C and DE 295 03 138 U1.

**[0022]** The aim of the present invention is to solve the above-mentioned technical problems, thus eliminating the drawbacks in the known art, by providing a device that prevents the extraction of the decorative plate from the base.

**[0023]** Within this aim, an object of the invention is to provide a device that can be made with known machinery and systems.

**[0024]** Another object of the invention is to provide a device that is structurally simple and can also be applied to normal locks of known types.

**[0025]** This aim and these and other objects, which will become better apparent hereinafter, are achieved by a protection device, according to the invention, that has

the features set forth in claim 1.

**[0026]** Further characteristics and advantages of the invention will become better apparent from the detailed description that follows of a particular embodiment, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the device according to the invention, applied to a lock in a door;

Figure 2 is an exploded view of the device applied to a lock in a door;

Figure 3 is a front perspective view of the base inserted in the decorative plate and the protective cover;

Figure 4 is a rear perspective view of the base inserted in the decorative plate and the protective cover;

Figure 5 is a first exploded view of the device according to the invention;

Figure 6 is a second exploded view of the device according to the invention;

Figure 7 is a rear view of the device according to the invention;

Figure 8 is a detailed view of a fin.

**[0027]** With reference to Figure 1, the reference numeral 1 indicates a protection device which can be applied to a lock 2 suitable to be inserted in a door 3.

**[0028]** With reference to Figure 2 and the following, the reference numeral 4 indicates a base, preferably but not exclusively cylindrical, which has on its front surface 5 at least two first threaded axial holes 6, diametrically opposed, for accommodating two grub screws 7.

**[0029]** The base 4 has, beginning at the rear surface 8, a first axial seat 9 which is essentially T-shaped, the leg 9a of which does not pass through the base 4 and the head 9b of which is connected to a second hole 10 which is formed on the front surface 5.

**[0030]** An elastic locator 11 is inserted in the head 9b of the first seat 9, which locator 11 is C-shaped and operates radially so as to axially retain a keyhole protection disk 12 which is rotatably inserted in a position offset from the axis of the base 4.

**[0031]** The keyhole protection disk 12 diametrically has a first slot 13 for the passage of a shaft 14 of a key 15 which will be inserted in a cylinder 15a forming the lock 2.

**[0032]** The base 4 has, on its lateral outer surface 4a and beginning at the rear surface 8, at least two axial seats; in the particular embodiment shown, four axial seats 16a, 16b, 16c, 16d are considered, which have a length shorter than that of the base 4.

**[0033]** The axis of the first two threaded holes 6 which accommodate the two grub screws 7 coincides with the axis of the four axial seats 16a, 16b, 16c, 16d which are mutually arranged diametrically.

**[0034]** Each of the four axial seats 16a, 16b, 16c, 16d has, in a transverse cross-section, and therefore in a plan

view, a profile with an irregular shape; a semicircular shape is explicitly excluded from the possible shapes.

**[0035]** In this way, for each one of the four seats, a first perimetric edge 17 is defined which has a nonlinear locus in the sense that it follows a path which, in its locus, produces at least one change of direction.

**[0036]** The shape of the first perimetric edge 17 can therefore be wide-ranging and varied, since it is sufficient for it to have a profile with at least one change of direction in its locus.

**[0037]** The first perimetric edge 17 has, in the particular embodiment shown, a symmetrical locus that defines a first central arc 17a which is connected to two second lateral arcs 17b connected, at one end, to the lateral surface 4a.

**[0038]** Such locus can naturally also be asymmetrical; moreover, the shape of the perimetric edge can be that which is most in keeping with specific requirements.

**[0039]** The radius of curvature of the first and second arcs 17a, 17b must be different so as to achieve a change in direction in the region of connection between them.

**[0040]** The base 4 has, on its rear surface 8, in a region which is offset from the four axial seats 16a, 16b, 16c, 16d, two third axial dead holes 18, which are internally threaded and mutually arranged diametrically; the third holes 18 accommodate two screws 19 for fixing the base 4 to the door 3.

**[0041]** On the lateral surface 4a of the base 4 there is also, in a region not affected by the four axial seats 16a, 16b, 16c, 16d, an annular seat 20, for accommodating a gasket 21 of the O-ring type, and a limit ring 22, in relief, against which a protective cover 23 rests in abutment which covers the front surface 5 of the base 4.

**[0042]** The protective cover 23, which has a shape that is complementary to the base 4 and hollow, has a fourth hole 24, which is axial and offset, for the first slot 13 to be accessible from the outside.

**[0043]** A decorative plate 25, preferably made of a pressed metal plate, has a hollow body 26 which is shaped complementary to the outer lateral surface of the base 4 and therefore is, in the particular embodiment shown, cylindrical with an inner diameter approximately equal to the outer diameter of the base 4; there is also a front frame 27 and a rear fifth hole or opening 28.

**[0044]** The fifth hole or opening 28 is shaped complementary to the outer lateral surface of the base 4; in the embodiment shown, the diameter of the fifth hole 28 is such as to allow the passage of the base 4.

**[0045]** In the hollow body 26 there is furthermore a rear perimetric edge 26a, which protrudes in the direction of the base 4 and from which four fins 29a, 29b, 29c, 29d protrude, radially and toward the inside of the fifth hole or opening 28, which are shaped complementary to the four axial seats 16a, 16b, 16c, 16d formed in the base 4.

**[0046]** Each of the fins 29a, 29b, 29c, 29d defines, in a transverse cross-section, a second perimetric edge 30 which has a geometry equivalent to that of the four axial seats 16a, 16b, 16c, 16d. Thus, in the specific embodi-

ment shown, a second central arc 30a is defined which is flanked by two second lateral arcs 30b connected at one end to third discharging arcs 30c which are connected in turn to the rear perimetric edge 26a of the hollow body 26.

[0047] The operation of the device according to the invention is as follows.

[0048] The decorative plate 25 is inserted in the accommodation hole 10, which is present in the door 3, from the outside, so that the frame 27 is positioned outside the door 3.

[0049] Subsequently the base 4 is inserted, with the rear surface 8 going first, in the hollow body 26 so that the fins 29a, 29b, 29c, 29d of the decorative plate 25 can slide axially inside the corresponding axial seats 16a, 16b, 16c, 16d which are located on the base 4.

[0050] The arrangement of the four axial seats 16a, 16b, 16c, 16d and of the corresponding fins 29a, 29b, 29c, 29d can be varied at will, in the sense that there can be for example two on a same diametric axis, and two on different axes.

[0051] The number of these fins and seats can also vary, where it is sufficient that there be at least two.

[0052] By means of the screws 19, the base 4 is fixed to the door 3 together with the lock 2 and subsequently the position of the decorative plate 25 is advantageously adjusted, by means of the grub screws 7, so that it abuts against the outside surface of the door 3. This operation can be carried out on a wide variety of thicknesses of doors or gates.

[0053] At this point the protective cover 23 is applied, from the outside, on the base 4, so as to cover the access to the grub screws 7 and aligning the second hole 10 with the first slot 13 in order to allow the key 15 to be used.

[0054] The shape of the fins 29a, 29b, 29c, 29d and the shape of the axial seats 16a, 16b, 16c, 16d determine undercut regions between the second lateral arcs 30b and the arcs that constitute the first perimetric edge 17 and the second perimetric edge 30; these regions, partly thanks to the presence of the rear perimetric edge 26a which confers robustness to the fins 29a, 29b, 29c, 29d, do not allow these fins to slip out from the axial seats 16a, 16b, 16c, 16d, also as a result of deformations which are impressed upon the decorative plate 25, other than the procedure in the known art.

[0055] In this way we prevent a level of play from being determined between the axial seats 16a, 16b, 16c, 16d and the fins 29a, 29b, 29c, 29d, because the deformation of even one of the first, second and third arcs 17a, 17b, 30a, 30b, 30c would lead to seizing with the axial seats 16a, 16b, 16c, 16d.

[0056] It has been found that the invention has fully achieved the specified aim and objects, a device for protection having been provided, particularly for a lock, which is capable of protecting the cylinder of such lock from attempted tampering and/or forcing. The device according to the invention prevents the extraction of the decorative plate from its seat, thus making extraction of

the cylinder very difficult, and, with its remarkable simplicity in terms of construction, keeping production costs low.

[0057] Naturally the materials used as well as the dimensions constituting the individual components of the invention may be more pertinent to the specific requirements.

## 10 Claims

1. A device (1) for protecting locks, comprising a base (4) which is provided with a seat for a cylinder that can be associated with a lock (2), and having perimetrically at least two axial seats (16a, 16b, 16c, 16d) for connection with a decorative plate (25) which is provided with at least two fins (29a, 29b, 29c, 29d) which are shaped complementary and can be removably coupled to said at least two seats, **characterised in that** said at least two fins (29a, 29b, 29c, 29d) and two seats (16a, 16b, 16c, 16d) have, in a plan cross-section, a profile with an irregular shape, said at least two axial seats (16a, 16b, 16c, 16d) being formed on said base (4) and having a length that is shorter than that of said base (4), each said seat (16a, 16b, 16c, 16d) having, in a transverse cross-section, and therefore in a plan view, a profile with said irregular shape which defines, for each one of said axial seats (16a, 16b, 16c, 16d), a first perimetric edge (17) with a non-linear locus in the sense that it follows a path which, in its locus, produces at least one change of direction.
2. The device for protecting locks according to claim 1, **characterised in that** said base (4) has, on the outer lateral surface (4a) and beginning on the rear surface (8), said at least two axial seats, said at least two axial seats and said fins having, in a plan cross-section, a profile with a non-linear shape.
3. The device for protecting locks according to claims 1 and 2, **characterised in that** said at least two fins have, in a plan cross-section, a profile that has a shape with at least two protrusions.
4. The device for protecting locks according to claims 1 and 2, **characterised in that** said at least two axial seats (16a, 16b, 16c, 16d) and fins have, in a plan cross-section, a profile with a shape which has at least one undercut.
5. The device for protecting locks according to claim 1, **characterised in that** said first perimetric edge (17) has a symmetrical locus that defines a first central arc (17a) which is connected to two second lateral arcs (17b) which are connected, at one end, to said lateral surface (4a), the radius of curvature of said first and second arcs (17a, 17b) being different so

as to achieve a change of direction in the region of connection between them.

6. The device for protecting locks according to one or more of the preceding claims, **characterised in that** it comprises a decorative plate (25) which has a hollow body (26), in which said base (4) can be inserted, a front frame (27) and a fifth rear hole (28) which is such as to allow the passage of said base (4), said hollow body (26) having a rear perimetric edge (26a), which protrudes in the direction of said base (4), from which two or more fins (29a, 29b, 29c, 29d) protrude, radially and toward the inside of said fifth hole or opening (28), which are shaped complementary to said axial seats (16a, 16b, 16c, 16d) formed in said base (4).
7. The device for protecting locks according to claim 6, **characterised in that** each one of said fins (29a, 29b, 29c, 29d) has, in a transverse cross-section, a profile that defines a second perimetric edge (30) having a geometry that is equivalent to that of said axial seats (16a, 16b, 16c, 16d).
8. The device for protecting locks according to one or more of the preceding claims, **characterised in that** said second perimetric edge (30) defines a second central arc (30a) which is flanked by two second lateral arcs (30b) which are connected at one end to third discharging arcs (30c) which are connected in turn to said rear perimetric edge (26a) of said hollow body (26).
9. The device for protecting locks according to one or more of the preceding claims, **characterised in that** the shape of said fins (29a, 29b, 29c, 29d) and of said axial seats (16a, 16b, 16c, 16d) determines undercut regions between said second lateral arcs (30b), which constitute said first perimetric edge (17), and said second perimetric edge (30), said undercut regions preventing said fins (29a, 29b, 29c, 29d) from slipping out of said axial seats (16a, 16b, 16c, 16d).

#### Patentansprüche

1. Eine Schutzvorrichtung (1) für Schlösser, die eine Basis (4) umfasst, welche mit einem Sitz für einen Zylinder ausgestattet ist, der mit einem Schloss (2) verbunden werden kann, und am Umfang mindestens zwei axiale Sitze (16a, 16b, 16c, 16d) zur Verbindung mit einer Dekorationsplatte (25) hat, die mit mindestens zwei Stegen (29a, 29b, 29c, 29d) ausgestattet ist, welche komplementär geformt sind und lösbar mit den mindestens zwei Sitzen gekoppelt werden können, **dadurch gekennzeichnet, dass** die mindestens zwei Stege (29a, 29b, 29c, 29d) und

zwei Sitze (16a, 16b, 16c, 16d) im Grund-Querschnitt ein Profil mit unregelmäßiger Form haben, wobei die mindestens zwei axialen Sitze (16a, 16b, 16c, 16d) auf der Basis (4) geformt sind und eine Länge haben, die kürzer ist als diejenige der Basis (4), wobei jeder Sitz (16a, 16b, 16c, 16d) im transversalen Querschnitt, und somit im Grundriss, ein Profil mit der unregelmäßigen Form hat, das für jeden der axialen Sitze (16a, 16b, 16c, 16d) eine erste Umfangskante (17) mit nicht linearem geometrischen Ort in dem Sinne bestimmt, dass sie einem Pfad folgt, der in seinem geometrischem Ort mindestens eine Richtungsänderung erzeugt.

2. Die Schutzvorrichtung für Schlösser gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Basis (4) an der äußeren Seitenfläche (4a), und beginnend an der hinteren Oberfläche (8), die mindestens zwei axialen Sitze hat, wobei die mindestens zwei axialen Sitze und die Stege in einem Grund-Querschnitt ein Profil mit nicht linearer Form haben.
3. Die Schutzvorrichtung für Schlösser gemäß den Ansprüchen 1 und 2, **dadurch gekennzeichnet, dass** die mindestens zwei Stege in einem Grund-Querschnitt ein Profil haben, das eine Form mit mindestens zwei Vorsprüngen hat.
4. Die Schutzvorrichtung für Schlösser gemäß den Ansprüchen 1 und 2, **dadurch gekennzeichnet, dass** die mindestens zwei axialen Sitze (16a, 16b, 16c, 16d) und die Stege in einem Grund-Querschnitt ein Profil mit einer Form haben, die mindestens eine Unterschneidung hat.
5. Die Schutzvorrichtung für Schlösser gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die erste Umfangskante (17) einen symmetrischen geometrischen Ort hat, die einen ersten zentralen Bogen (17a) bestimmt, welcher mit zwei zweiten, seitlichen Bögen (17b) verbunden ist, die an einem Ende mit der Seitenfläche (4a) verbunden sind, wobei die Krümmungsradien des ersten und des zweiten Bogens (17a, 17b) sich unterscheiden, um eine Richtungsänderung im Verbindungsbereich zwischen sich zu erzielen.

6. Die Schutzvorrichtung für Schlösser gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** sie eine Dekorationsplatte (25) umfasst, die einen hohlen Körper (26), in den die Basis (4) eingesetzt werden kann, einen vorderen Rahmen (27) und eine fünfte hintere Bohrung (28) hat, die ausgebildet ist, um das Hindurchdringen der Basis (4) zu ermöglichen, wobei der hohle Körper (26) einen hinteren Umfangsrand (26a) hat, der in die Richtung der Basis (4) herausragt und aus dem zwei oder mehr Stege (29a, 29b, 29c, 29d) radial

und zur Innenseite der fünften Bohrung oder Öffnung (28) herausragen, die komplementär zu den axialen Sitzen (16a, 16b, 16c, 16d) geformt sind, welche in der Basis (4) geformt sind.

7. Die Schutzvorrichtung für Schlösser gemäß Anspruch 6, **dadurch gekennzeichnet, dass** jeder der Stege (29a, 29b, 29c, 29d) in einem transversalen Querschnitt ein Profil hat, das eine zweite Umfangskante (30) mit einer Geometrie bestimmt, die äquivalent zu derjenigen der axialen Sitze (16a, 16b, 16c, 16d) ist.
8. Die Schutzvorrichtung für Schlösser gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** die zweite Umfangskante (30) einen zweiten zentralen Bogen (30a) bestimmt, der von zwei zweiten seitlichen Bögen (30b) flankiert ist, welche an einem Ende mit dritten Ablassbögen (30c) verbunden sind, die wiederum mit dem hinteren Umfangsrand (26a) des hohlen Körpers (26) verbunden sind.
9. Die Schutzvorrichtung für Schlösser gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** die Form der Stege (29a, 29b, 29c, 29d) und der axialen Sitze (16a, 16b, 16c, 16d) Unterschneidungsbereiche zwischen den zweiten seitlichen Bögen (30b), die die erste Umfangskante (17) bilden, und der zweiten Umfangskante (30) bestimmen, wobei die Unterschneidungsbereiche die Stege (29a, 29b, 29c, 29d) daran hindern, aus den axialen Sitzen (16a, 16b, 16c, 16d) herauszurutschen.

## Revendications

1. Dispositif (1), destiné à protéger des cadenas, comprenant une base (4), qui est munie d'un siège pour un cylindre, qui peut être associé à un cadenas (2) et ayant en périphérie au moins deux sièges axiaux (16a, 16b, 16c, 16d), prêts à être raccordés à une plaque décorative (25), qui est munie d'au moins deux ergots (29a, 29b, 29c, 29d), qui sont formés de manière complémentaire et peuvent être couplés de manière mobile auxdits deux sièges, **caractérisé en ce que** lesdits au moins deux ergots (29a, 29b, 29c, 29d) et deux sièges (16a, 16b, 16c, 16d) ont, en coupe transversale plane, un profil avec une forme irrégulière, lesdits au moins deux sièges axiaux (16a, 16b, 16c, 16d) étant formés sur ladite base (4) et ayant une longueur plus courte que celle de ladite base (4), chacun desdits sièges (16a, 16b, 16c, 16d) ayant, en coupe transversale et par conséquent en vue en plan, un profil avec ladite forme irrégulière, qui définit, pour chacun desdits sièges axiaux (16a, 16b,

16c, 16d), un premier bord périphérique (17) avec un lieu non linéaire, dans le sens qu'il suit un parcours qui produit en son lieu au moins un changement de direction.

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2. Dispositif, destiné à protéger des cadenas, selon la revendication 1,

### **caractérisé en ce que**

ladite base (4) a, sur la surface latérale extérieure (4a) et commençant sur la surface arrière (8) lesdits au moins deux sièges axiaux, lesdits au moins deux sièges axiaux et lesdits ergots ayant, en coupe transversale plane, un profil avec une forme non linéaire.

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3. Dispositif, destiné à protéger des cadenas, selon les revendications 1 et 2,

### **caractérisé en ce que**

lesdits au moins deux ergots ont, en coupe transversale plane, un profil qui a une forme avec au moins deux protubérances.

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4. Dispositif, destiné à protéger des cadenas, selon les revendications 1 et 2,

### **caractérisé en ce que**

lesdits au moins deux sièges axiaux (16a, 16b, 16c, 16d) et ergots ont, en coupe transversale plane, un profil avec une forme qui a au moins un dégagement.

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5. Dispositif, destiné à protéger des cadenas, selon la revendication 1,

### **caractérisé en ce que**

ledit premier bord périphérique (17) a un lieu symétrique qui définit un premier arc central (17a), qui est relié à deux deuxièmes arcs latéraux (17b), qui sont reliés, à une extrémité, à ladite surface latérale (4a), le rayon de courbure desdits premier et deuxième arcs (17a, 17b) étant différents, de façon à réaliser un changement de direction dans la région de jonction entre eux.

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6. Dispositif, destiné à protéger des cadenas, selon une ou plus des revendications précédentes,

### **caractérisé en ce**

**qu'il** comprend une plaque décorative (25), qui a un corps creux (26), dans lequel peut être insérée ladite base (4), un cadre avant (27) et un cinquième trou arrière (28), qui est de nature à permettre le passage de ladite base (4), ledit corps creux (26) ayant un bord périphérique arrière (26a), qui fait saillie dans la direction de ladite base (4), d'où deux ergots (29a, 29b, 29c, 29d) ou plus font saillie, radialement et vers l'intérieur dudit cinquième trou ou de ladite cinquième ouverture (28), qui sont formé(e)s de manière complémentaire auxdits sièges axiaux (16a, 16b, 16c, 16d), formés dans ladite base (4).

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7. Dispositif, destiné à protéger des cadenas, selon la revendication 6,

**caractérisé en ce que**

chacun desdits ergots (29a, 29b, 29c, 29d) a, en coupe transversale, un profil qui définit un second bord périphérique (30), ayant une géométrie qui est équivalente à celle desdits sièges axiaux (16a, 16b, 16c, 16d). 5

8. Dispositif, destiné à protéger des cadenas, selon une ou plus des revendications précédentes, 10

**caractérisé en ce que**

ledit second bord périphérique (30) définit un deuxième arc central (30a), qui est flanqué par deux deuxièmes arcs latéraux (30b), qui sont reliés, à une extrémité, à des troisièmes arcs de décharge (30c), qui sont reliés, à leur tour, audit bord périphérique arrière (26a) dudit corps creux (26). 15

9. Dispositif, destiné à protéger des cadenas, selon une ou plus des revendications précédentes, 20

**caractérisé en ce que**

la forme desdits ergots (29a, 29b, 29c, 29d) et desdits sièges axiaux (16a, 16b, 16c, 16d) détermine des régions de dégagement entre lesdits deuxièmes arcs latéraux (30b), qui constituent ledit premier bord périphérique (17) et ledit second bord périphérique (30), lesdites régions de dégagement empêchant lesdits ergots (29a, 29b, 29c, 29d) de glisser hors desdits sièges axiaux (16a, 16b, 16c, 16d). 25

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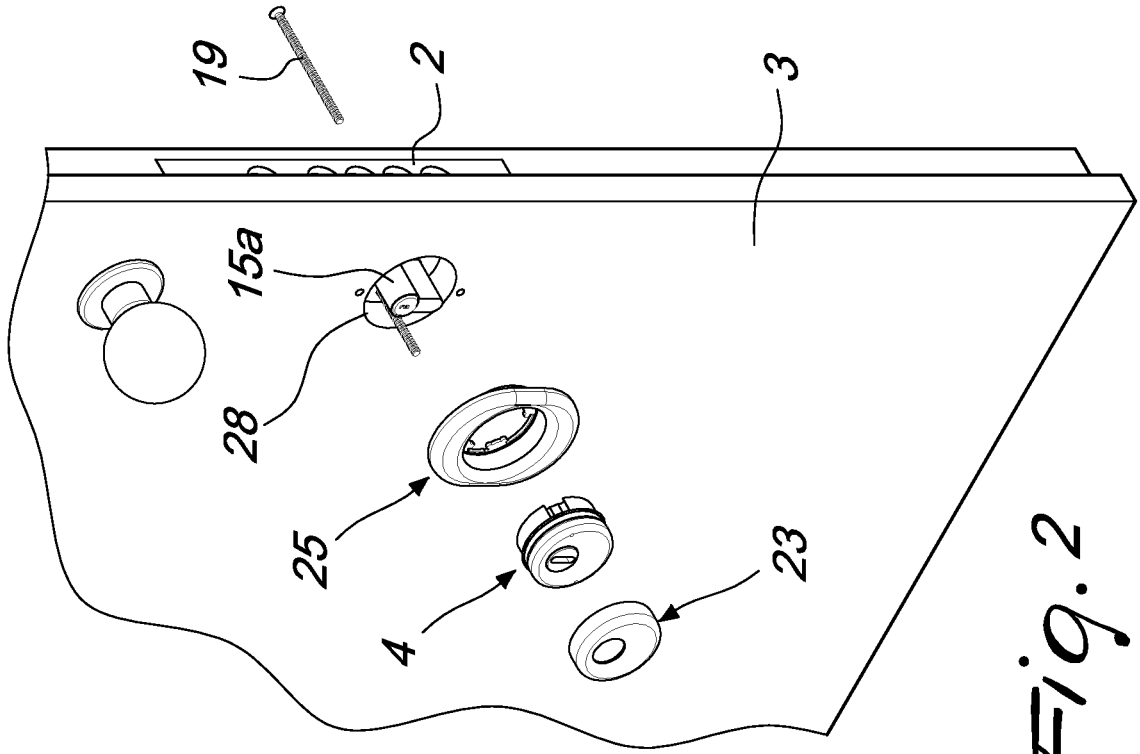


Fig. 2

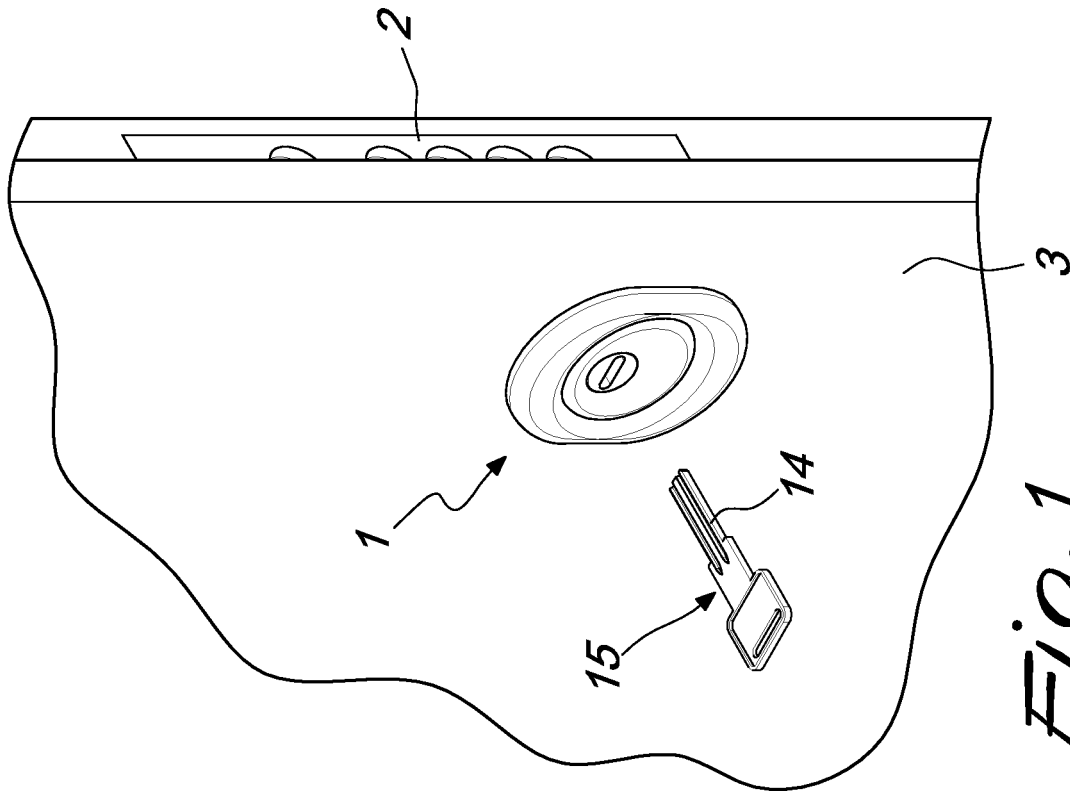
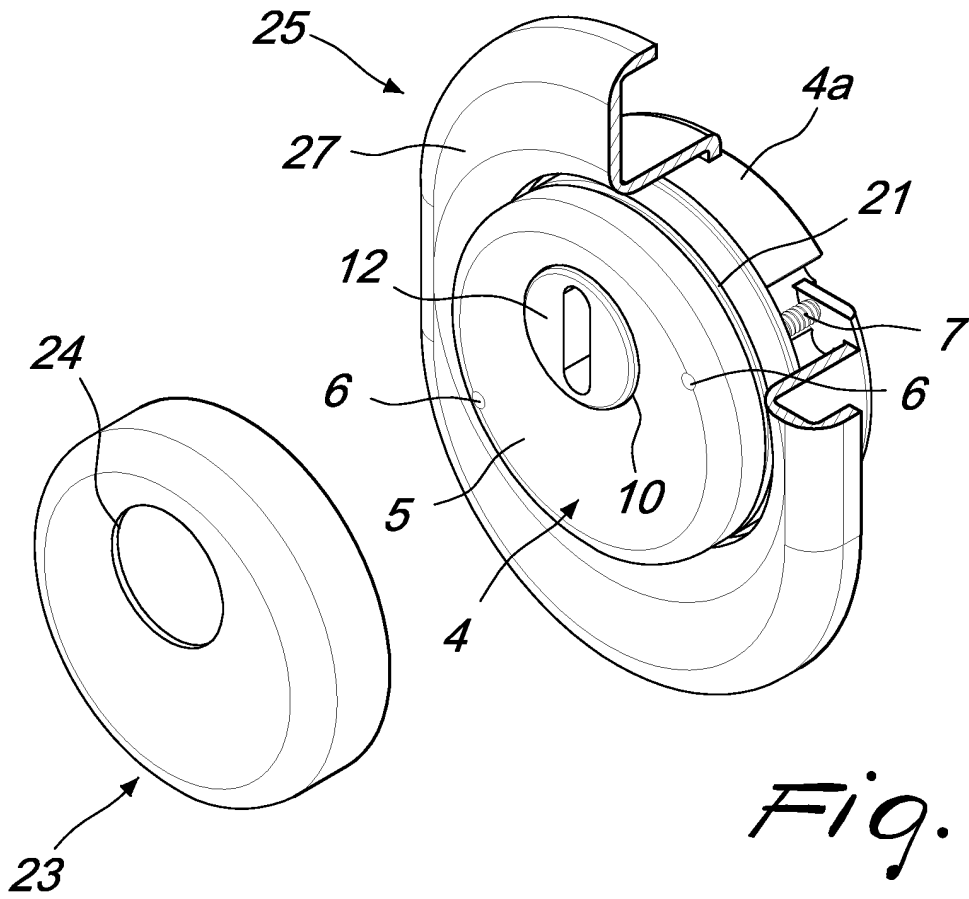
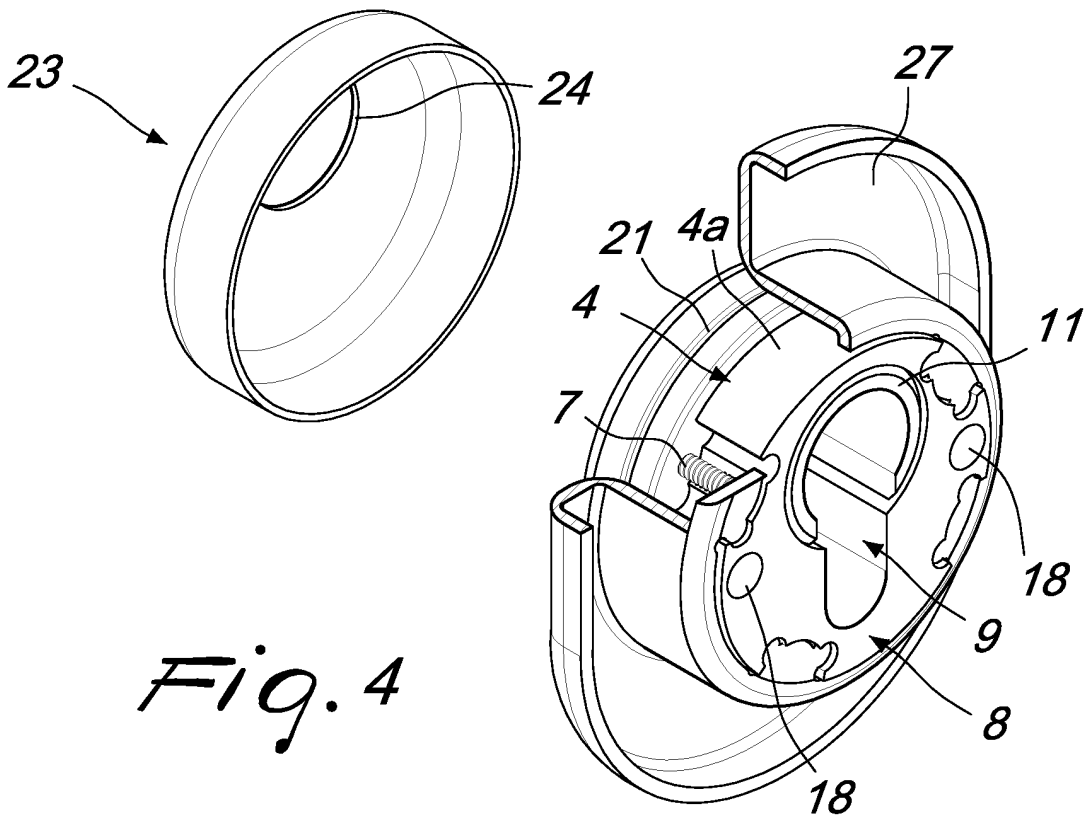


Fig. 1





*Fig. 3*



*Fig. 4*

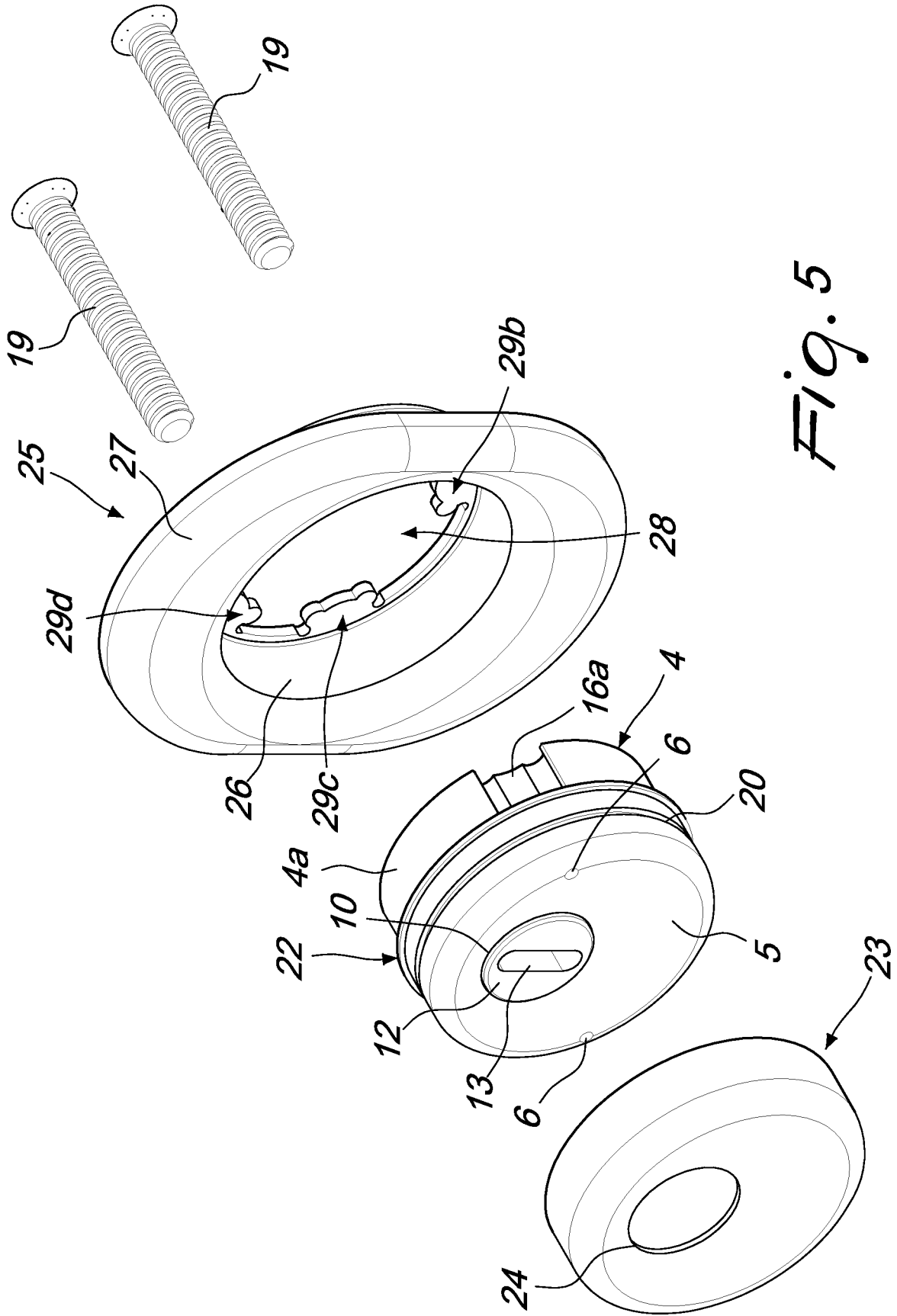


Fig. 5

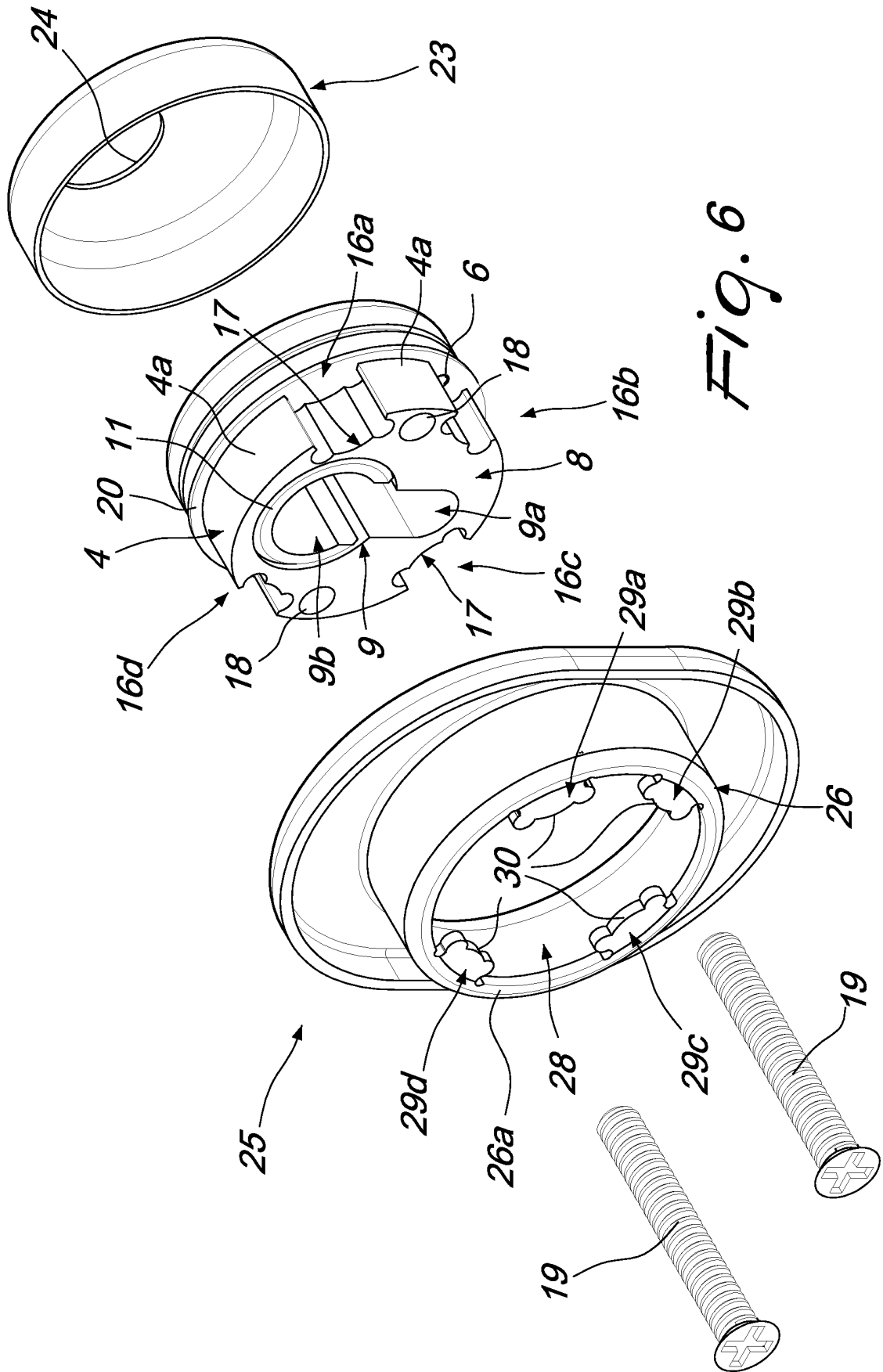


Fig. 6

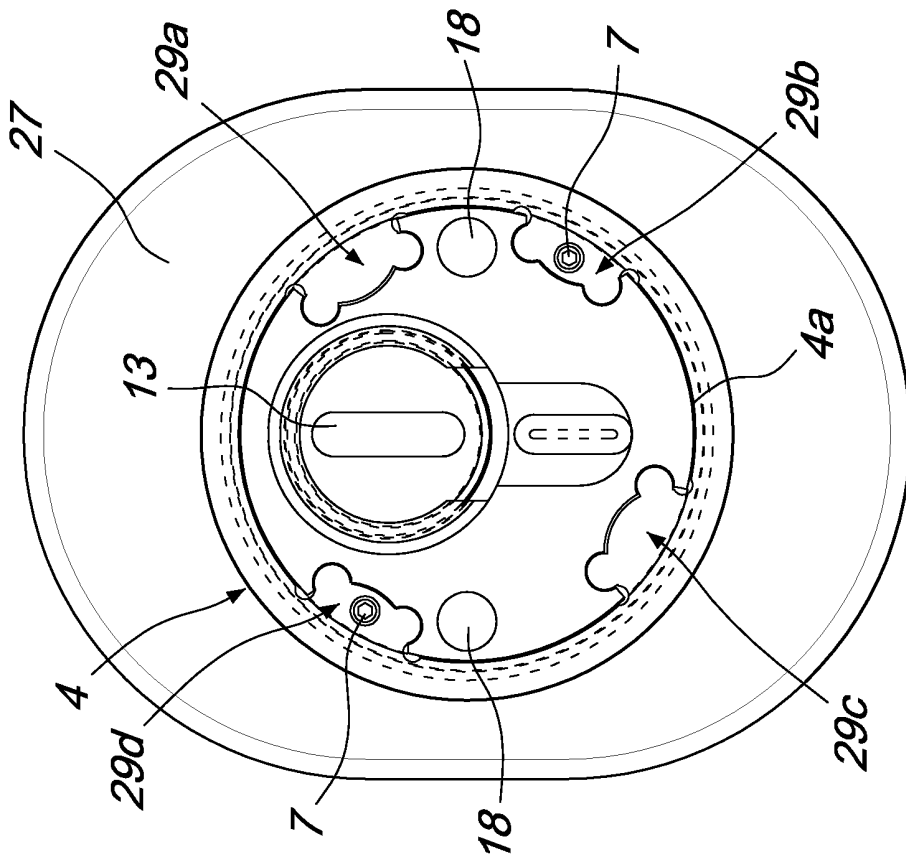


Fig. 7

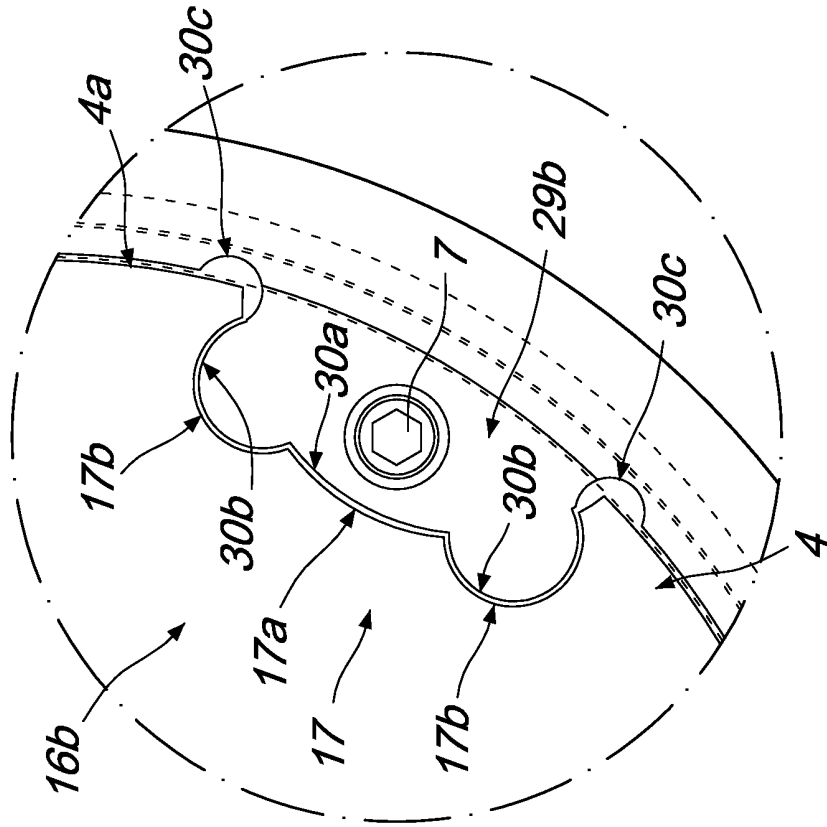


Fig. 8

**REFERENCES CITED IN THE DESCRIPTION**

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