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(54) KEY OF A LOCK HAVING A COMPATIBLE ACTIVATION LIMIT STOP

(57) Key of a lock having a compatible penetration limit stop, of the type of keys which, on their blade, have a penetration limit stop which determines the position of said blade within the rotor of the cylinder, wherein said penetration limit stop is constituted by lateral wings one

of which projects on either side of the blade in the manner of lateral branches of a "T", and wherein there is a recessed portion between the lateral wings and the handle head of the key.

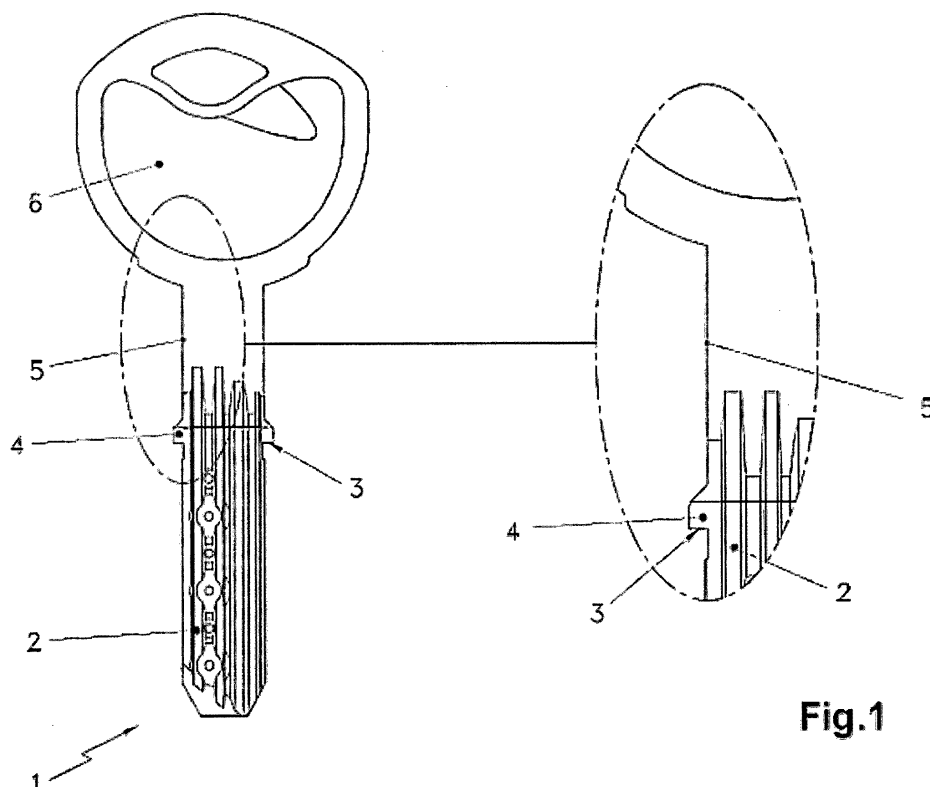


Fig.1

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Description

FIELD OF THE INVENTION

[0001] This invention relates to a key of a lock having a compatible penetration limit stop, of the type of keys which, on their blade, have a penetration limit stop which determines the position of said blade within the rotor of the cylinder.

PRIOR ART

[0002] At present and with regard to the state of the art it is common and known to use penetration limit stops in keys in order to correctly fix the position of the key, with the aim of achieving correct engagement with the pins of the cylinder.

[0003] To achieve the aforesaid penetration limit stops, the keys have a larger width in the rear part of their blade than in the front part where the engagement portion is situated, said change in cross-section allowing for the penetration limit stop.

[0004] However, said width in the rear part of the blade prevents its correct use in a lock cylinder with reduced dimensions and/or an off-centre lock cylinder, as there will be a collision between the rear part of the blade and the stator and/or the protective cover of the cylinder.

EXPLANATION OF THE INVENTION AND ADVANTAGES

[0005] In view of this state of affairs, the present invention refers to a key of a lock having a compatible penetration limit stop, of the type of keys which, on their blade, have a penetration limit stop which determines the position of said blade within the rotor of the cylinder, wherein said penetration limit stop is constituted by lateral wings one of which projects on either side of the blade in the manner of lateral branches of a "T", and wherein there is a recessed portion between the lateral wings and the handle head of the key.

[0006] Thanks to this configuration the key can be successfully used in a lock cylinder with reduced dimensions and/or an off-centre lock cylinder, as the actuation limit stop is provided by means of the two wings in the form of a "T" which are present on the key. In this way the rear part of the blade of the key can have a smaller width than the front part of the blade of the key where the engagement holes are situated, allowing rotation of the key without colliding with the protective cover of the cylinder.

[0007] Another feature of the invention is that, on at least one of the sides of the blade, there is a recessed portion between the lateral wings and the handle head of the key.

[0008] Thanks to this configuration keys having only one penetration limit stop can also be successfully used in cylinders with reduced dimensions and/or off-centre cylinders without there being a collision between the rear

part of the blade and the stator and/or the protective cover of the cylinder.

[0009] These and other special features of the invention will be apparent from the detailed explanation below in conjunction with the attached graphic representation.

DRAWINGS AND REFERENCE NUMERALS

[0010] For a better understanding of the nature of the invention, the attached drawings show an industrial embodiment which has the character of a merely illustrative and non-limiting example.

Figure 1 shows a plan view of the key (1) with an enlarged detail of one of the recessed portions (5) which extend from the lateral wings (4) to the handle head (6) of the key (1).

Figure 2 shows a longitudinal sectional view of the key (1) inserted in the cylinder (7).

Figure 3 shows an isometric view of the combined key (1) and cylinder (7), with an enlarged detail of how the key (1) is finally introduced in the cylinder (7). Figure 4 shows a plan view of the combined key (1) and cylinder (7), and a section D-D in front of the lateral wings (4) of the key (1).

1. Key
2. Blade
3. Penetration limit stop
4. Lateral wings
5. Recessed portion
6. Handle head
7. Cylinder
8. Rotor
9. Stator
10. Protective cover

DESCRIPTION OF A PREFERRED EMBODIMENT

[0011] With reference to the drawings and reference numerals listed above, the attached diagrams illustrate a preferred mode of carrying out the subject matter of the invention, which is a key (1) of a lock having a compatible penetration limit stop (3); of the type of keys which, on their blade (2), have a penetration limit stop (3) which determines the position of said blade (2) within the rotor (8) of the cylinder (7), wherein said penetration limit stop (3) is constituted by lateral wings (4) one of which projects on either side of the blade (2) in the manner of lateral branches of a "T", and wherein there is a recessed portion (5) between the lateral wings (4) and the handle head (6) of the key (1).

[0012] As is seen in Figure 2, the lateral wings (4) are received in the space between the stator (9) and the protective cover (10) of the cylinder (7) when the key (1) is introduced in the rotor (8) of the cylinder (7). In this position the penetration limit stop (3) makes contact with the outer surface of the rotor (8). In this way the key (1)

can be used in a lock cylinder (6) with reduced dimensions and/or an off-centre lock cylinder (6), as the actuation limit stop (3) is provided by means of the two lateral wings (4) in the form of a "T" which are present on the key (1).

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[0013] Another feature of the invention which is seen in Figure 1 is that, on at least one of the sides of the blade (2), there is a recessed portion (5) between the lateral wings (4) and the handle head (6) of the key (1).

[0014] When the key (1) is introduced (1) in the cylinder (7), as is seen in Figure 4, the recessed portion (5) prevents the key (1) from colliding with the cover of the lock during the process of unlocking and locking the lock, as the rear part of the blade (2) of the key (1) has a smaller width than the front part of the blade (2) of the key (1) where the engagement portion is situated.

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[0015] The essence of this invention is not altered by any variation in materials, shape, size and arrangement of the constituent elements, which are described in a non-limiting manner, and this specification is sufficient to enable reproduction of the invention by a person skilled in the art.

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Claims

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1. A key (1) of a lock having a compatible penetration limit stop (3), of the type of keys which, on their blade (2), have a penetration limit stop (3) which determines the position of said blade (2) within the rotor (7) of the cylinder (6), **characterized in that** said penetration limit stop (3) is constituted by lateral wings (4) one of which projects on either side of the blade (2) in the manner of lateral branches of a "T", and wherein there is a recessed portion (5) between the lateral wings (4) and the handle head (6) of the key (1).

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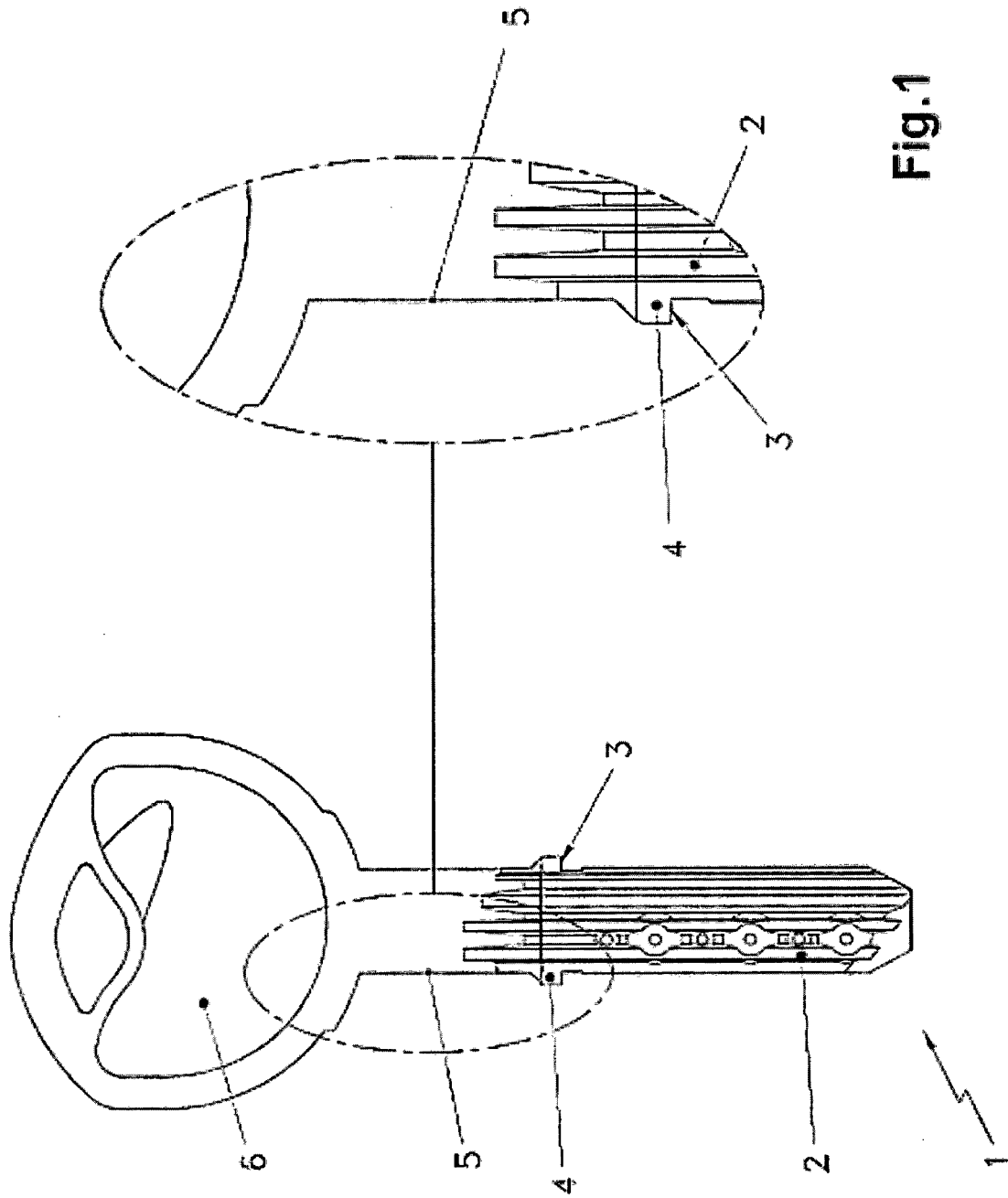
2. The key (1) of a lock having a compatible penetration limit stop (3) according to Claim 1, **characterized in that**, on at least one of the sides of the blade (2), there is a recessed portion (5) between the lateral wings (4) and the handle head (6) of the key (1).

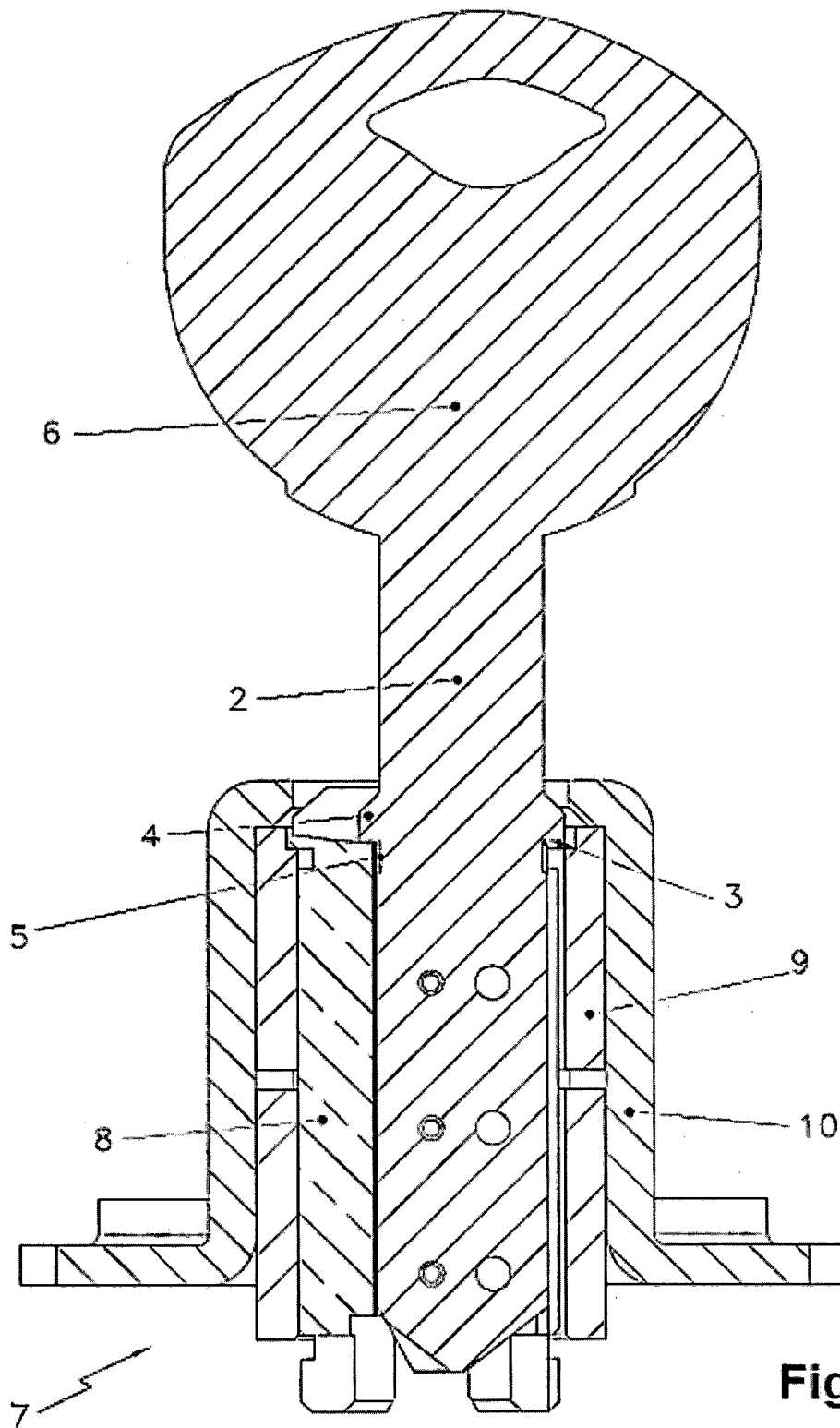
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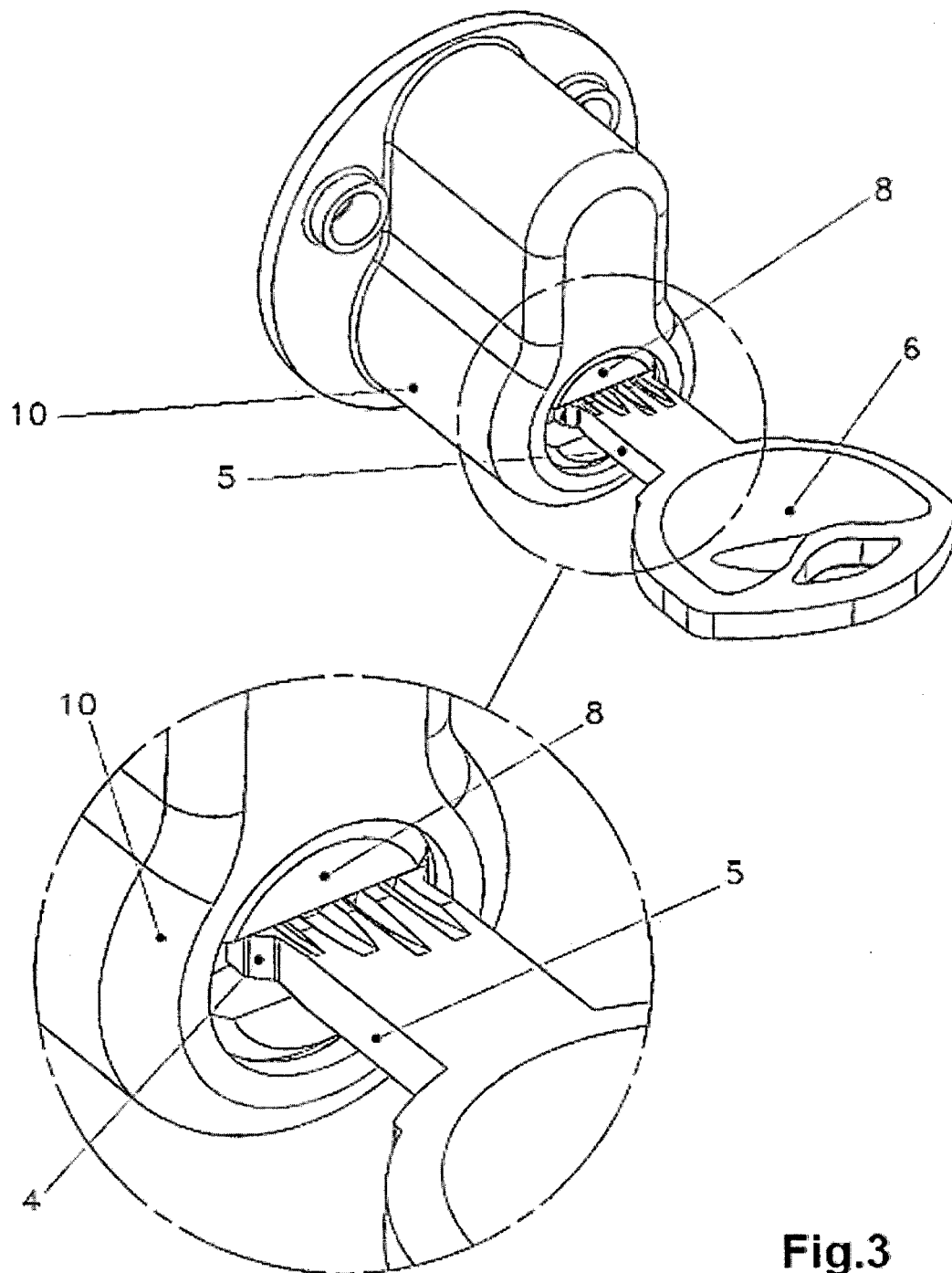


Fig.3

Section D-D

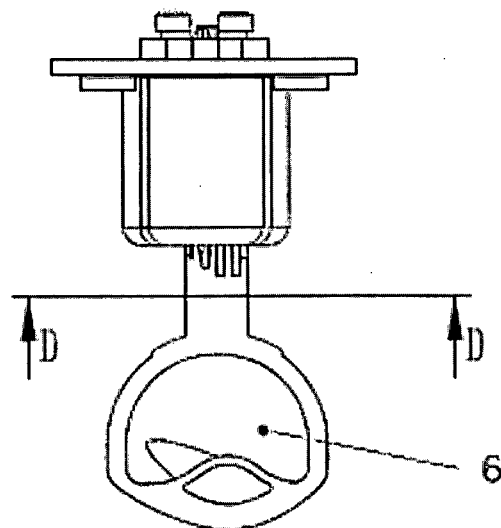
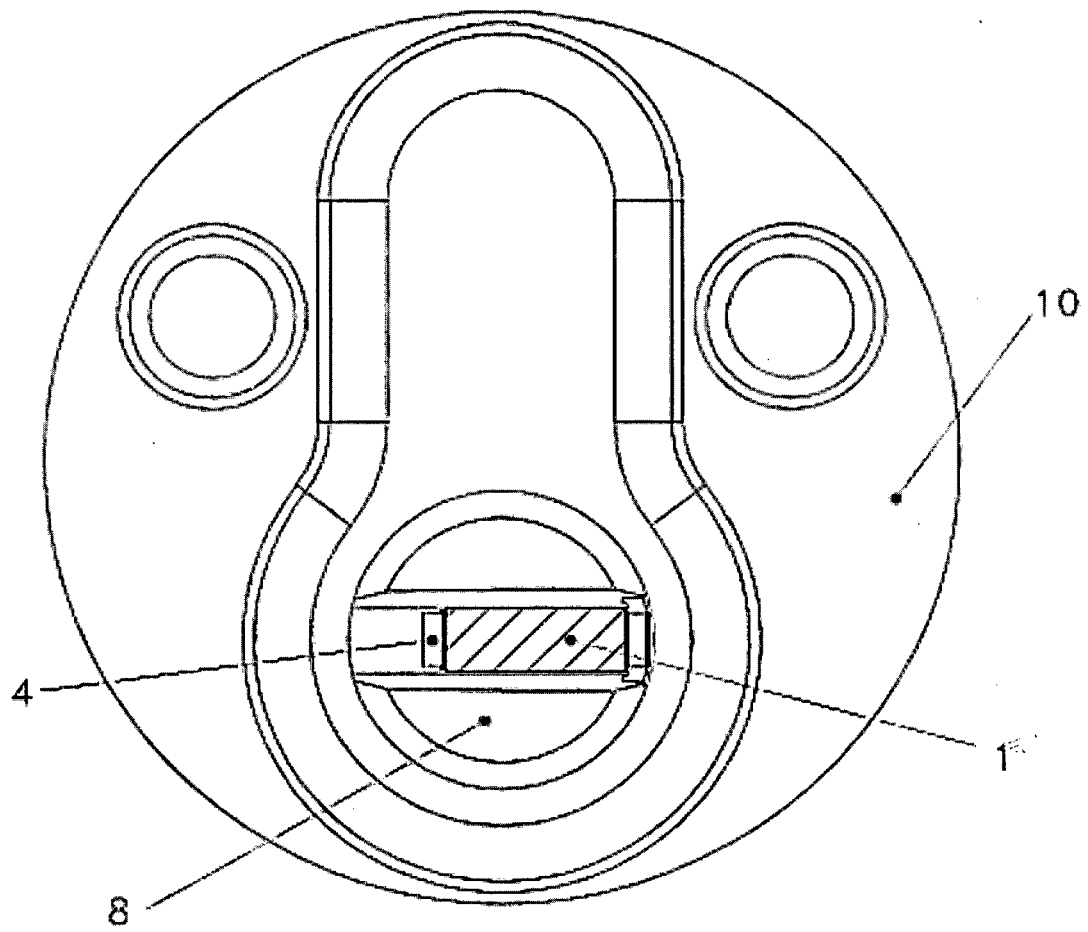


Fig.4



EUROPEAN SEARCH REPORT

Application Number
EP 16 15 1533

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2014/111739 A1 (VALENTE MASSIMO [FR]; MIGLIASSO MARCO [IT]) 24 July 2014 (2014-07-24) * page 4, line 22 - line 27; figures 1,4 * * page 9, line 18 - line 21 *	1,2	INV. E05B19/00
X	WO 98/40589 A1 (RIELDA SRL [IT]) 17 September 1998 (1998-09-17) * page 5, line 31 - line 35; figure 2 *	1,2	
			TECHNICAL FIELDS SEARCHED (IPC)
			E05B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 June 2016	Examiner Ansel, Yannick
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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