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 A request for correction of the description, claims and abstract has been filed pursuant to Rule 139 EPC. A decision on the request will be taken during the proceedings before the Examining Division (Guidelines for Examination in the EPO, A-V, 3.).

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(54) **Fastening button for belts**

(57) A fastener, especially for restraining belts being used in hospitals, comprising at least two bases, one lower (1) and one upper (2), with the upper one being removable, and a rod (3) integral with lower base (3) that

is fixed to upper base (2), and a key (4) which is used to disconnect the rod (3) from the upper base (2) when the fastener needs to be opened.

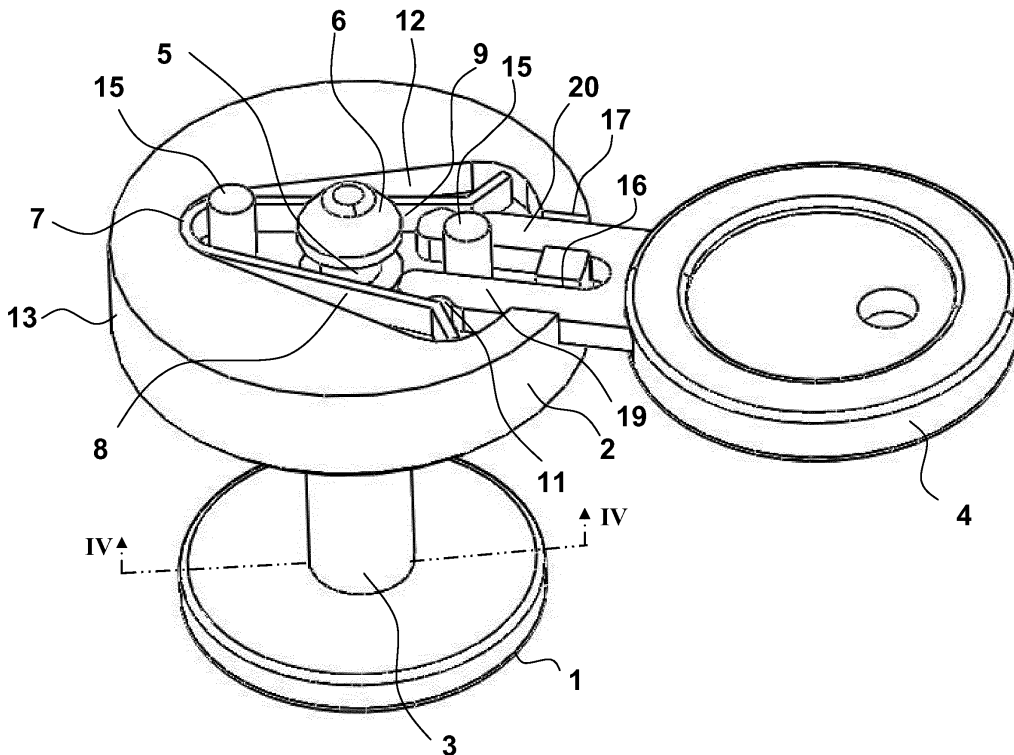


FIG. 2

Description

[0001] Safety device for belts that comprises at least two bases, one lower and one upper with the upper one being removable, and a rod integral with the lower base that is fixed to the upper base characterized in that it comprises: a groove around the rod which, when rod is fixed to the upper base, leaves said groove placed inside the upper base, an elastic retention means, with two facing strips, which in the locking position are fitted inside the groove, and a key, with two projections that when said strips are pushed on their inner side, separate said strips from the groove, releasing the rod.

BACKGROUND TO THE INVENTION

[0002] In the state of the art various patents and designs are known that protect safety devices for belts.

[0003] So, Utility Model No. 201230982 (ES1077804) is known "CIERRE DE SEGURIDAD PARA CINTURONES DE SUJECCIÓN PARA PACIENTES CON APERTURA MEDIANTE MONEDA" (SAFETY CLOSURE FOR BELTS SUPPORTING PATIENTS, WITH A COIN-OPERATED OPENING", from 2012, in the name of UBIOTEX ESPAÑA, which relates to a safety closure for belts supporting patients, with a coin-operated opening, characterized in that it consists of a cylindrical rod with a circular base the axis of which has a longitudinal depression and another peripheral circular near its flat end and a pivot in the shape of a cylindrical ring with a side groove and a circular central perforation for attaching the rod. On the inside this ring has a V-shaped spring or hook held by two pins, one on the apex of the V and the other one surrounded by one of its ends while the other end is free.

[0004] So-called closure buttons, also are known, like Spanish Industrial Model No. 136873, from 1996, in the name of the Applicant, which consists of a body and a cover, and adopts the arrangement of an octagonal prism with rounded edges, and a short height with respect to its maximum scale, which on one of its bases has a slight circular recess that covers virtually the whole face and on the other base has a small diameter, circular hole, that is centred with respect to the octagonal surface. Using a key magnet the cover is released from the body.

[0005] Said closure buttons are already described and not claimed in Spanish Utility Model No. 0234178 "DISPOSITIVO PARA SUJETAR UN CUERPO HUMANO EN UNA POSICIÓN DETERMINADA SOBRE UN LECHO" (Device for supporting a human body in a certain position on a bed), from 1978, in the name of SEGUFIX-SYSTEM BANAGEN-UND FIXIERGURTE GMBH & CO, currently public domain, where reference number 13, already indicates the closure buttons described as "loops".

[0006] Generally, the closure buttons consist of a lower base integral with a rod, with the rod being inserted into the upper base and releasing the latter by means of a key that comprises a magnet, as illustrated in the above-

mentioned Industrial Model.

BRIEF DESCRIPTION OF THE INVENTION

[0007] This invention is an improvement in the sector of safety devices for belts, also called closure buttons.

[0008] The nearest document is Utility Model No. 201230982 (ES1077804). Said document mentions the problems of losing the keys that open these devices as the problem to be solved. Therefore, it devises a device where the means for decoupling the elements of the device is a coin.

[0009] The problem we have with coins is that even though they are common, these coins cannot be used in the hospital sector, due to the amount of microbes and dirt that they carry. In other words, the nearest document can hardly be used within a hospital.

[0010] Furthermore, with respect to the other documents that use magnets as keys, there is a problem in the fact that the magnet may attract objects that are in a hospital, like scissors, scalpels, etc., and may also influence the values in the apparatuses used to monitor the patient's vitals.

[0011] Thus, the inventor solves the above-mentioned problems by not using a coin to release the upper base, thereby allowing it to be used in hospitals and medical centres.

[0012] At the same time it uses a mechanism that does not use magnets as keys, whereby it is useful in hospital centres, due to the fact that the key, which comprises projections with a handle, by the action of said projections entering inside the upper base, separates the rod from the upper base.

[0013] An object of this invention is a safety device for belts, that comprises at least two bases, one lower and one upper with the upper one being removable, and a rod integral with the lower base that is fixed to the upper base characterized in that it comprises: a groove around the rod which, when rod is fixed to the upper base, leaves said groove placed inside the upper base, an elastic retention means, with two facing strips, which in the locking position are fitted inside the groove, and a key, with two projections that when said strips are pushed on their inner side, separate said strips from the groove, releasing the rod.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] In order to facilitate the explanation, this specification is accompanied by four sheets of drawings, which illustrate a practical exemplary embodiment, which is provided as a non-limiting example of the scope of this invention.

- Figure 1 is an elevation view from the right of the object of this invention,
- Figure 2 is an elevation view from the left without the upper half,

- Figure 3 is a front view of the lower base and the rod, and
- Figure 4 is an elevated, cross-sectional view along the line IV-IV in Figure 2.

SPECIFIC EMBODIMENT OF THIS INVENTION

[0015] This way, Figure 1 shows a lower base 1, an upper base 2, a rod 3 and a key 4.

[0016] Figure 2 illustrates lower base 1, upper base 2 with its lower half 13, rod 3 with groove 5 and its end 6, key 4 with its projections 19, 20 and depression 11, a retention means 7 with its strips 8, 9, a recess 12, pins 15 and holes 16, 17.

[0017] Figure 3 shows lower base 1, rod 3 and its end 6 and groove 5.

[0018] Lastly, Figure 4 illustrates lower base 1, upper base 2 and its lower half 13 and its upper half 14 with its cavity 10, rod 3 and its end 6, groove 5, pin 15 and strip 9.

[0019] Thus, in a specific embodiment, if the device that is the object of this invention is to be used, proceed as follows.

[0020] First of all separate lower base 1 together with rod 3, integral with it, from upper base 2.

[0021] To do this, insert key 4 with its two projections 19, 20 inside upper base 2.

[0022] Said upper base 3 comprises inside an elastic retention means 7, with two facing strips 8, 9.

[0023] Rod 3 comprises a groove 5 which when said rod 3 attaches to upper base 2, leaves said groove 5 inside upper base 2. In the locking position strips 8, 9 fitted inside groove 5, such that they prevent rod 3 from separating from upper base 3.

[0024] When the two projections 19, 20 of key 4 are inserted inside upper base 2, said projections 19, 20 push on the inside strips 8, 9, on the surface on which strips 8, 9 are opposed to one another, such that the action of projections 19, 20 pushing strips 8, 9 has the consequence of separating strips 8, 9 from groove 5 and therefore releasing rod 3 from upper base 2 and allowing them to be separated.

[0025] When it is desired to apply this to a safety belt in the medical sector, rod 3 would be passed through the eye of the belt until lower base 1 abuts and then upper base 2 would be placed on the end of rod 6 and it would be pressed to make that part of rod 3 enter inside upper base 2 until said rod 3 is locked by upper base 2.

[0026] The end of rod 6, optionally in this embodiment is in the shape of an arrowhead and would be housed inside cavity 10 (Figure 4) in the upper half 14 of upper base 2. This makes it easier that when the rod 3 is locked in upper base 2, when said end 6 is pressed, it separates strips 8, 9 and once passed said end 6, the strips 8, 9 are fixed inside groove 5, which in this embodiment is in the upper part of rod 3.

[0027] Thus, the device is attached such that rod 3 cannot be released from upper base 2.

[0028] One of the embodiment options is that retention

means 7 has V-shaped, as shown in Figure 2. This option means other means are not needed to keep strips 8, 9 in position, as it is the actual retention means 7 which, when both strips 8, 9 are joined, allows them to adjust themselves elastically.

[0029] Projections 19, 20 optionally comprise at least one depression 11, in principle one for each projection, which is located facing towards strips 8, 9. The purpose of said depression 11 is to prevent key 4 being thrown out by the force of strips 8, 9, as said depression 11 would block strips 8, 9 with projections 19, 20.

[0030] Projections 19, 20 are parallel to one another in this embodiment, although they could be arranged differently. This is because this way it makes it easier to insert key 4 into upper base 2.

[0031] To facilitate installing the above-mentioned parts, upper base 2 can comprise a recess 12 (Figure 2) which determines a housing where retention means 7 is installed.

[0032] Also, optionally, it allows that upper base 2, which comprises two halves 13, 14, lower and upper, has separable halves. This way, if necessary it is possible to manipulate inside upper base 2.

[0033] Lower half 13 is where in principle said recess 12 would be located.

[0034] In order to attach lower half 13 to upper half 14 at least one pin 15 is used, and in this embodiment two, or screws that also serve as guiding axes for the two projections 18, 19 of key 4 and retention means 7.

[0035] Pin 15 or screw, as appears in Figure 2, lies between the two projections.

[0036] In order to be able to insert key 4 inside upper base 2, it has been envisaged that in lower half 13 some holes 16, 17 are provided for the passage of said projections 19, 20.

[0037] Optionally, the end of rod 6, in the locking position is covered by upper half 14. This way, even if the patient wets the device, the water and even any food, does not reach inside upper base 2, which does occur in the nearest document.

[0038] This invention describes a new safety device for belts. The examples mentioned herein are non-limiting of this invention, and therefore it can have different applications and/or adaptations, all comprised within the scope of the following claims.

Claims

1. Safety device for belts, that comprises at least two bases, one lower one (1) and one upper one (2) with the upper one being removable, and a rod (3) integral with lower base (3) that is secured in upper base (2), **characterized in that** it comprises:

- a groove (5) around rod (3), that when the rod (3) is fixed to upper base (2), leaves said groove (5) placed inside upper base (2),

- an elastic retention means (7), with two facing strips (8, 9), which in the locking position are fitted inside groove (5), and

- a key (4), with two projections (19, 20) that when said strips (8, 9) are pushed on their inner side, separate said strips (8, 9) from groove (5), releasing rod (3). 5
- 2. Device, according to claim 1, **characterized in that** retention means (7) has V-shaped. 10
- 3. Device according to claim 1, **characterized in that** projections (19, 20) comprise at least one depression (11) placed facing to the strips (8, 9). 15
- 4. Device, according to claim 1 or 3, **characterized in that** projections (19, 20) are parallel to one another.
- 5. Device, according to claim 1, **characterized in that** groove (5) lies in the upper area of rod (3). 20
- 6. Device, according to some of the preceding claims, **characterized in that** upper base (2) comprises a recess (12) that determines a housing where retention means (7) is installed. 25
- 7. Device, according to claim 6, **characterized in that** upper base (2) comprises two halves (13, 14) lower and upper, separable, where lower half (13) comprises said recess (12). 30
- 8. Device, according to claim 7, **characterized in that** lower half (13) is fixed to upper half (14) by means of at least one pin (15) or screw that acts as a guiding axis for said projections of key (4). 35
- 9. Device, according to claim 8, **characterized in that** pin (15) or screw lies between the two projections (19, 20). 40
- 10. Device, according to claim 7, **characterized in that** lower half (13) comprises holes (16, 17) for the passage of projections (19, 20).
- 11. Device, according to claim 7, **characterized in that** end of rod (6), in the locking position, is covered by upper half (14). 45
- 12. Device, according to claim 11, **characterized in that** end of rod (6) is housed, in the locking position, inside a cavity (10) in upper half (14). 50
- 13. Device, according to claim 11 or 12, **characterized in that** end of rod (6) is shaped like an arrowhead. 55

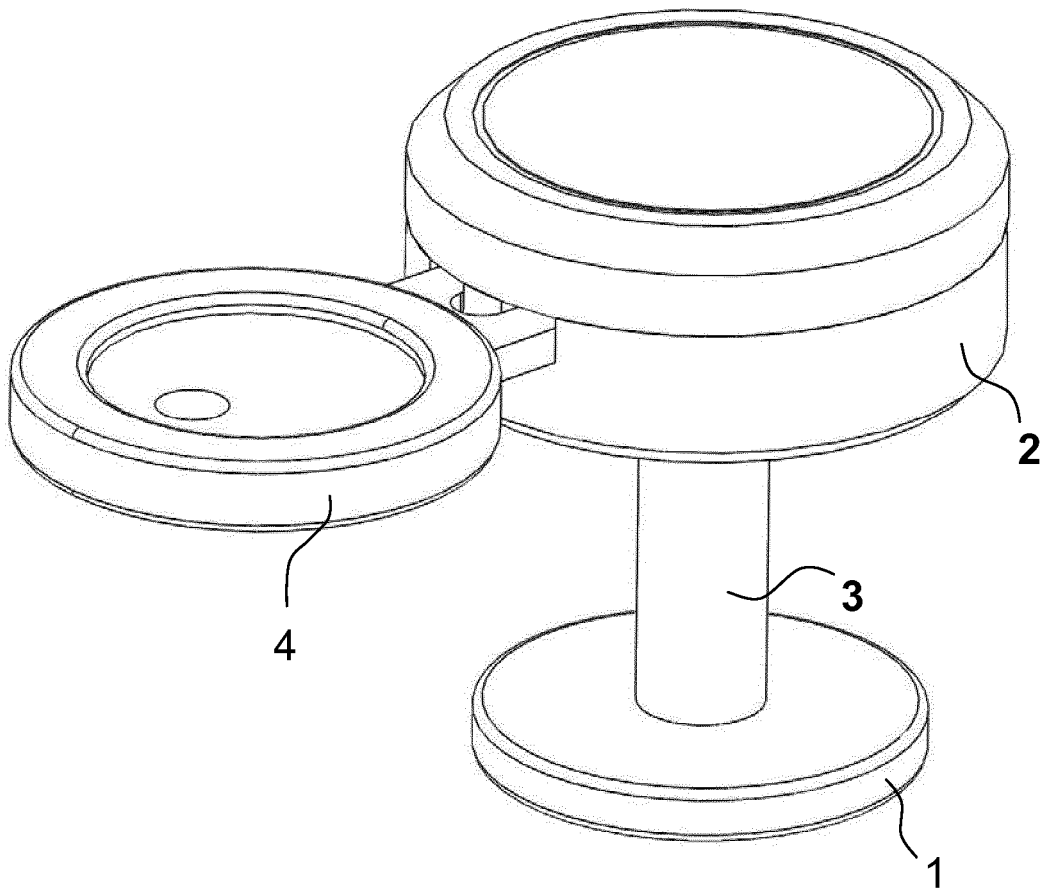


FIG. 1

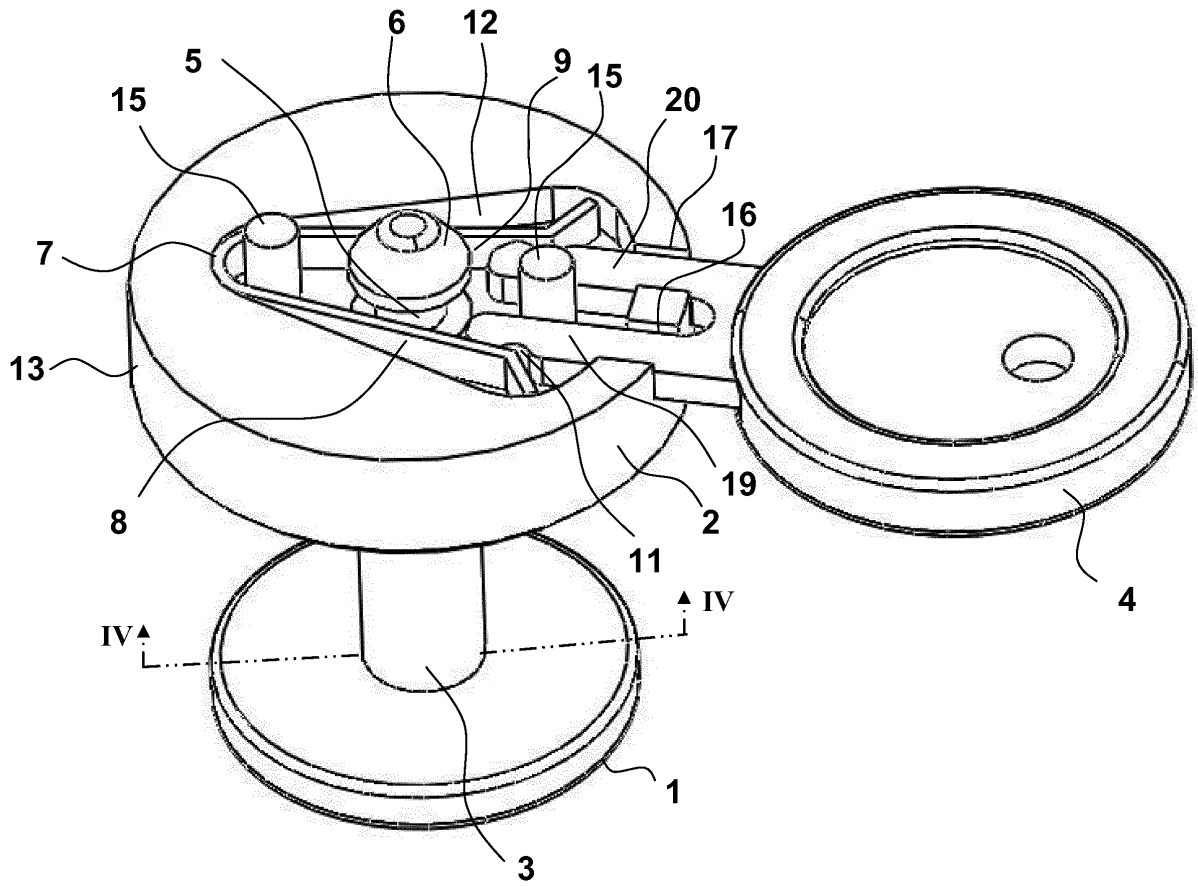


FIG. 2

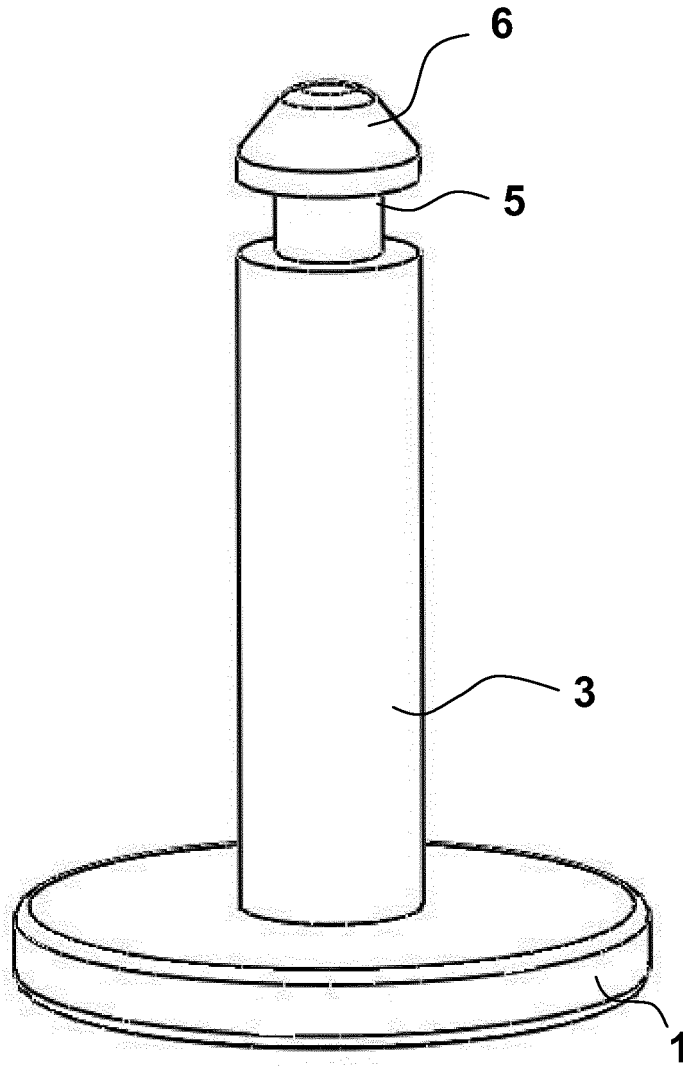


FIG. 3

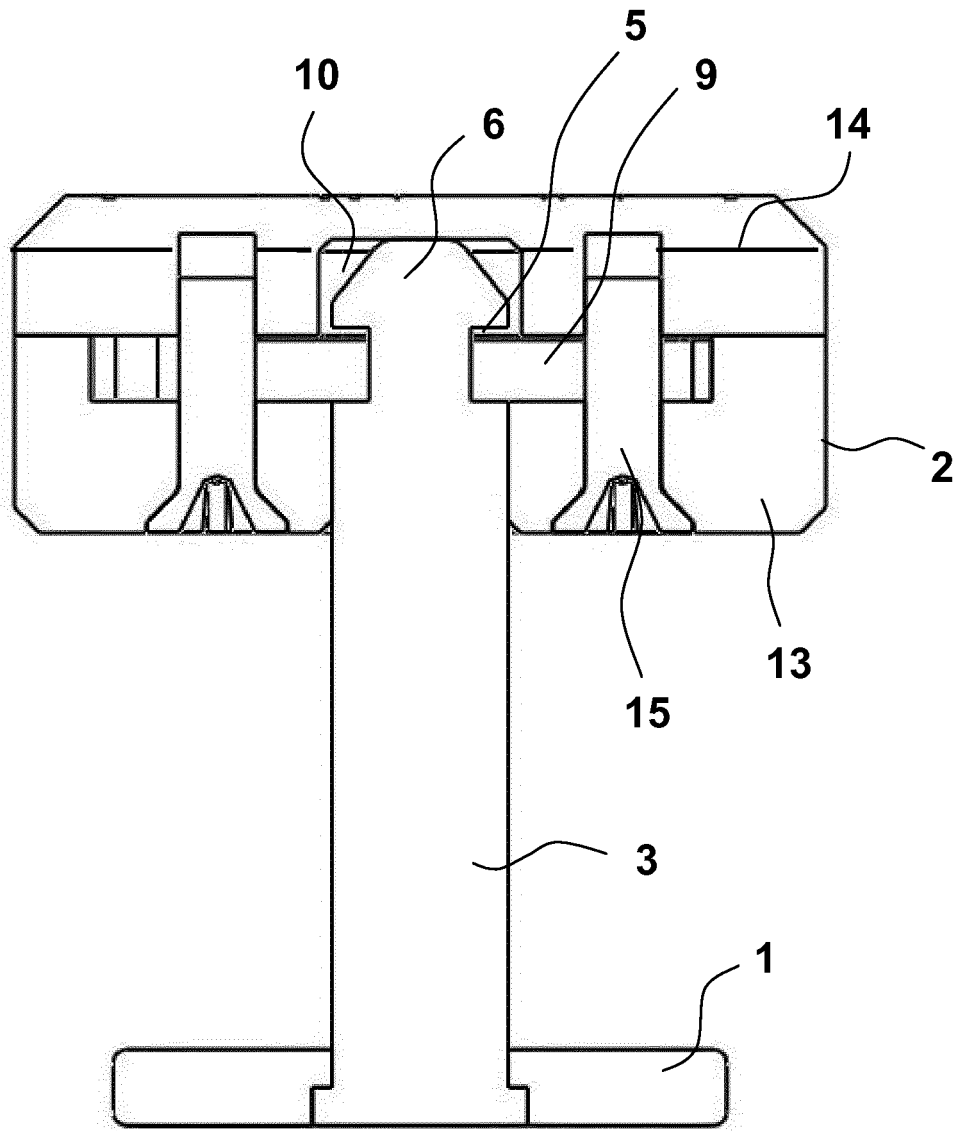


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 12 38 2520

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	FR 56 496 E (FROIDEVAUX) 25 September 1952 (1952-09-25) * column 1, line 1 - column 2, line 17; figures 1-7 *	1,4-13	
A	US 2003/024079 A1 (MORITA TAMA O [JP]) 6 February 2003 (2003-02-06) * paragraph [0077] - paragraph [0098]; figures 2,4a,4b *	1-13	
A	DE 20 2005 013852 U1 (SEGUFIX BANDAGEN DAS HUMANE SY [DE]) 10 November 2005 (2005-11-10) * claim 1; figures 1,4,5 *	1-13	
			TECHNICAL FIELDS SEARCHED (IPC)
			A44B A45C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 April 2013	Examiner Simpson, Estelle
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	

EPO FORM 1503 03/02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 38 2520

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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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11-04-2013

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