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(54) **Device for locking the foot ring to the vertical tube, in particular in seats for office, laboratory or community use**

(57) A device for locking the foot ring (2) to the vertical central tube (8) in a seat, characterised by consisting of a lever arm (20) housed in a housing (10) provided in one of the spokes (4) which connect the ring to the central sleeve (6), said arm having its hinged end eccentrically engaged by a pin (18) fixed at its ends to the walls of the

housing, said pin (18) also being pivoted in horizontal slotted holes (16), a slide (12) supporting a pad (28) of antifriction material which, for a certain position of the lever arm, presses the vertical central tube (8) housed in said sleeve (6) against the inner lateral wall thereof.

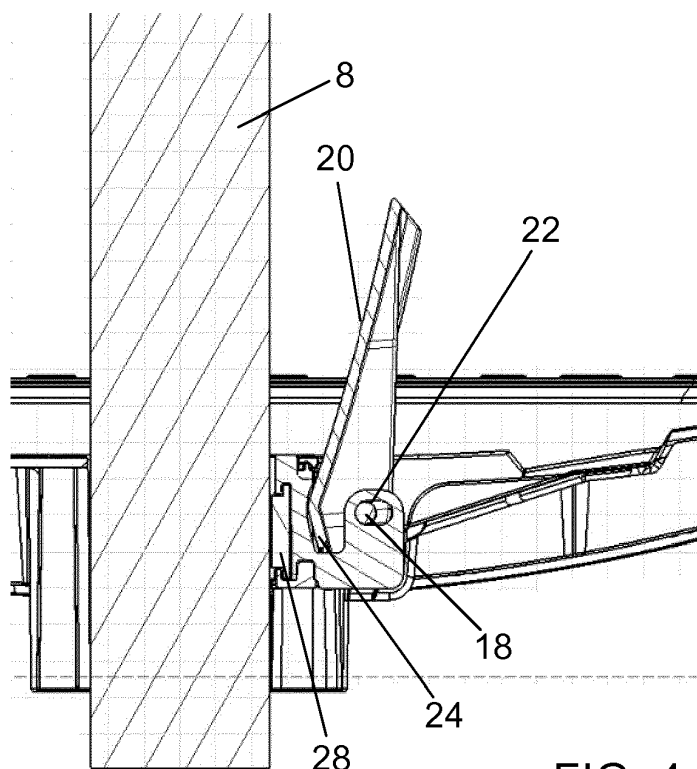


FIG. 4

Description

[0001] The present invention relates to a device for locking the foot ring to the vertical tube, in particular in seats for office, laboratory or community use.

[0002] Seats are known, particularly chairs or stools, provided with a foot ring which is adjustable in height along the tube of the gas pump or the vertical support tube, to enable a person to sit comfortably for a long period.

[0003] The foot ring generally consists of a plurality of spokes rigid with a central sleeve which is fixed to the support tube or gas pump tube.

[0004] In a first type of connection, the sleeve is fixed by a screw with a knob, the end of which thrusts against the vertical support tube or the gas pump tube.

[0005] The drawback of this system is a discontinuous adjustment.

[0006] The solution of directly fixing the end of the screw onto the lateral surface of the tube presents the drawback of possible squashing of the sheet metal leading to possible loss of the gas seal.

[0007] Another locking device uses a frusto-conical sleeve which when the foot ring is loaded grips the entire tube.

[0008] A drawback of this device is that the sleeve loses its seal with time and a lengthy and laborious operation is required to adjust the position the foot ring relative to the tube.

[0009] In a third type of connection, the sleeve is fixed by a knob-attached screw, the end of which engages in one of a plurality of superposed holes provided in the gas pump tube.

[0010] A drawback of this system is that this device cannot be used in gas pump tubes.

[0011] The object of the invention is to eliminate these drawbacks by providing a device for connecting the foot ring to the gas pump tube or vertical tube which can be operated easily and comfortably.

[0012] This object is attained according to the invention by a foot ring locking device particularly in seats for office, laboratory or community use, as described in claim 1.

[0013] A preferred embodiment of the present invention is described hereinafter with reference of the accompanying drawings, in which:

Figure 1 shows a foot ring provided with the device according to the invention,

Figure 2 shows it in the configuration of non-engagement with the column tube,

Figure 3 shows it in cross-section in the configuration illustrated in Figure 1, and

Figure 4 shows it in cross-section in the configuration illustrated in Figure 2.

[0014] As can be seen from the figures, the device according to the invention is applied to a foot ring 2 provided with four spokes 4 connected to a central sleeve 6

through which the gas pump tube 8 or the vertical support tube for the seat is inserted.

[0015] In particular, one of the spokes 4 is provided with a housing 10 which houses a nylon slide 12, the flanges 14 of which are provided with slotted holes 16 through which a pin 18 is inserted, the ends of which are fixed to the sides of the housing, and on which there is also hinged a lever arm 20 in a hole 22 eccentric to the head 24 of the lever arm.

10 [0016] In particular, that surface of the slide 12 facing the tube 8 is provided with a housing 26 housing a pad 28 of antifriction material.

[0017] The device according to the invention operates in the following manner.

15 [0018] The user rotates the lever arm 20 into the configuration illustrated in Figures 2 and 4 such as to bring the slide 12 into the position most distant from the tube 18, by virtue of the eccentric configuration of the head 24.

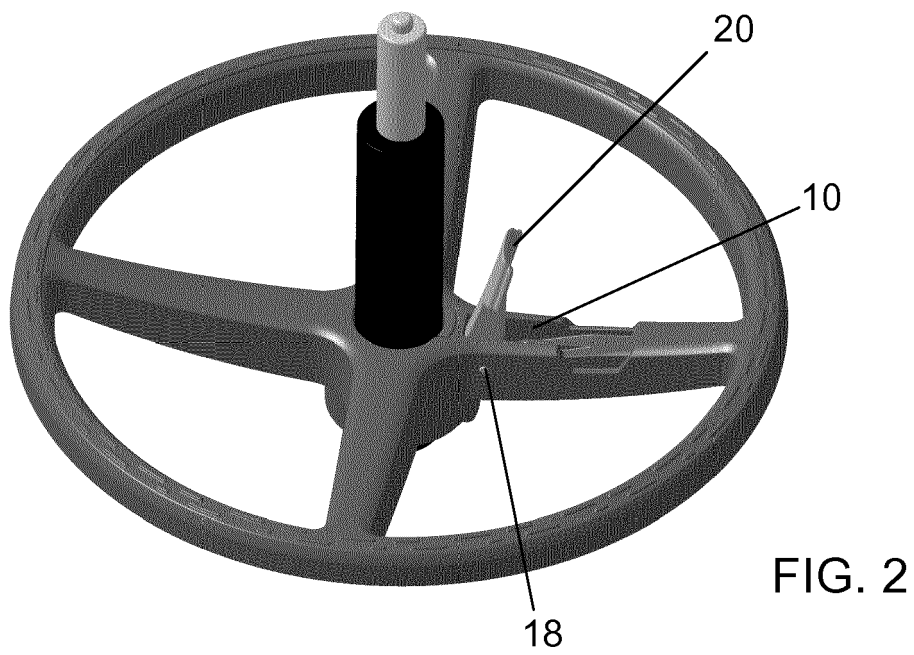
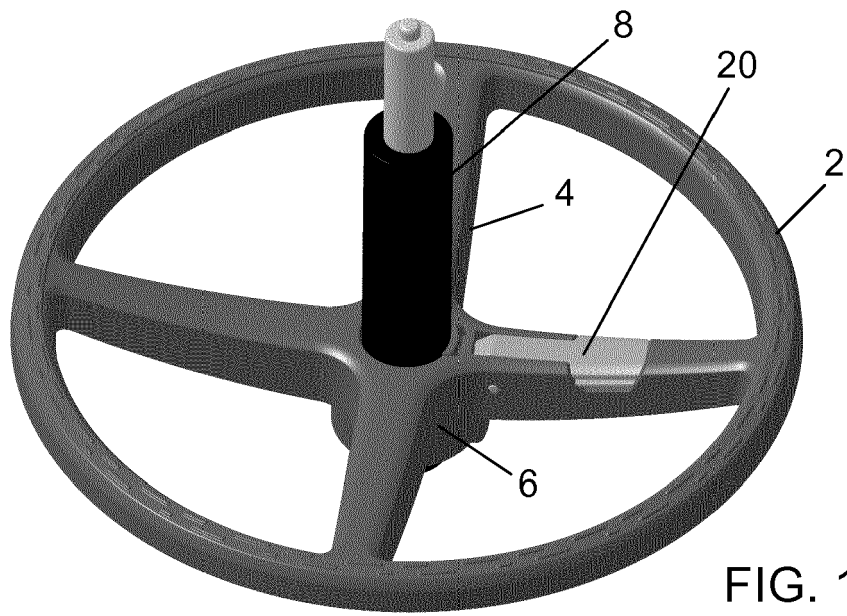
20 [0019] The sleeve 6 is then made to slide along the tube 8 until the desired position is found. The lever arm 20 is then rotated (Figures 1 and 3) to cause the slide 12 to travel towards the tube 8 with consequent pressing of the pad 28 against the tube to lock it securely against the inner lateral surface of the sleeve 6.

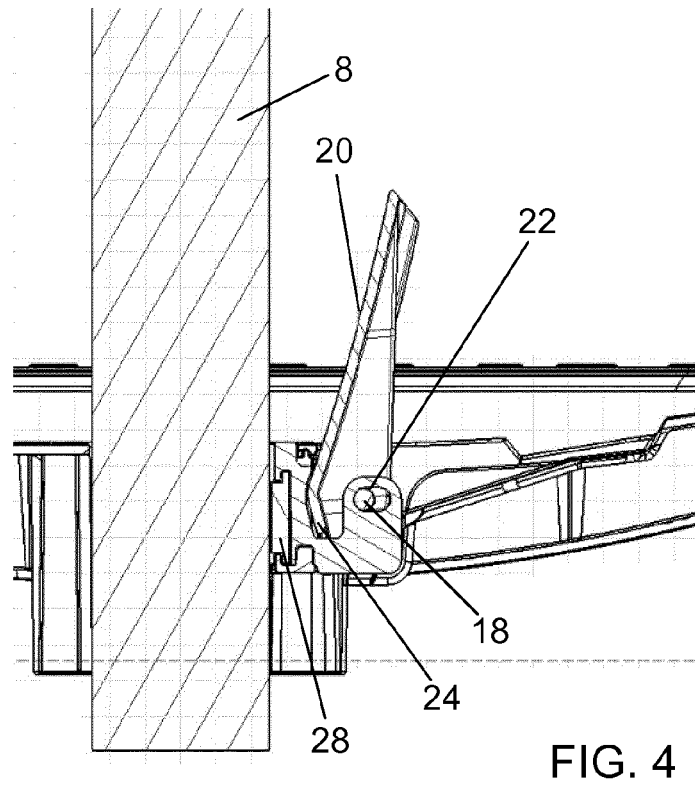
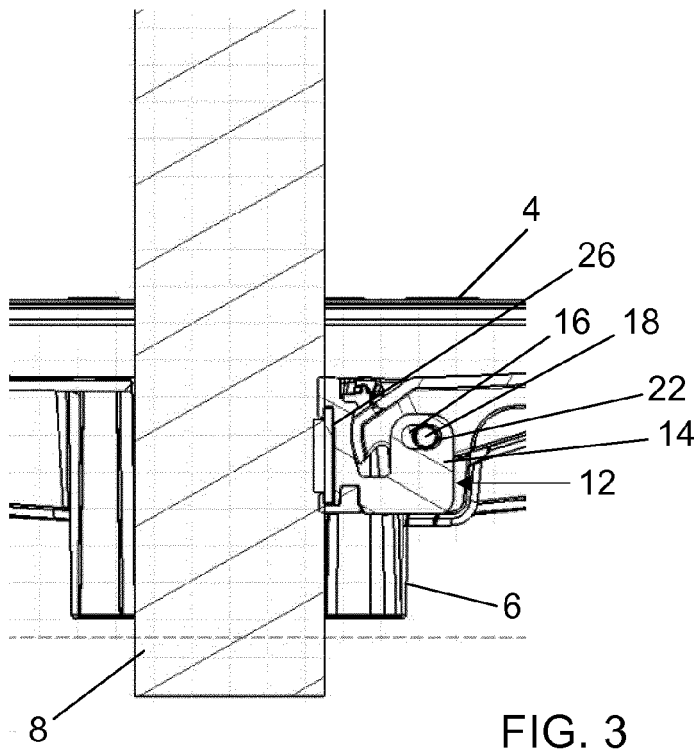
25 [0020] From the foregoing it is apparent that the device according to the invention enables the foot ring to be easily and comfortably adjusted relative to the support tube.

Claims

1. A device for locking the foot ring (2) to the vertical central tube (8) in a seat, **characterised by** consisting of a lever arm (20) housed in a housing (10) provided in one of the spokes (4) which connect the ring to the central sleeve (6), said arm having its hinged end eccentrically engaged by a pin (18) fixed at its ends to the walls of the housing, said pin (18) also being pivoted in horizontal slotted holes (16), a slide (12) supporting a pad (28) of antifriction material which, for a certain position of the lever arm, presses the vertical central tube (8) housed in said sleeve (6) against the inner lateral wall thereof.

2. A device as claimed in claim 1, **characterised in that** the lever arm (20) is movable between a position housed in the housing (10) in which the pad (28) acts on the tube (8), and a position perpendicular thereto in which the pad does not interfere with the tube.







EUROPEAN SEARCH REPORT

Application Number
EP 15 15 4886

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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)
A	US 2003/151291 A1 (LIN MING CHUEN [TW] ET AL) 14 August 2003 (2003-08-14) * figures 4-7 *	1,2	INV. A47C7/50
A	----- US 3 376 068 A (WALKINSHAW THOMAS G) 2 April 1968 (1968-04-02) * figures 2,3 * * column 2, lines 8-46 *	1,2	
A	----- US 2004/036333 A1 (LIN MING-CHUAN [TW]) 26 February 2004 (2004-02-26) * figures 3,4,6 *	1,2	

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) A47C
Place of search The Hague		Date of completion of the search 10 July 2015	Examiner Sainz Martínez, M
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 15 4886

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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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10-07-2015

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82