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(54) Radial pin tumbler lock and key

(57) A radially pin tumbler lock (6) and key (1) in which both have a non-cylindrical substantially regular polygonal mating configuration extending parallel to the direction of insertion of the key into the lock. A preferred

configuration of the polygon is that of a regular octagon. The mating configuration of the key (1) is a hollow body with an octagonal internal configuration (2A) extending longitudinally thereof. The mating configuration of the lock is then an octagonal upstanding post (7).

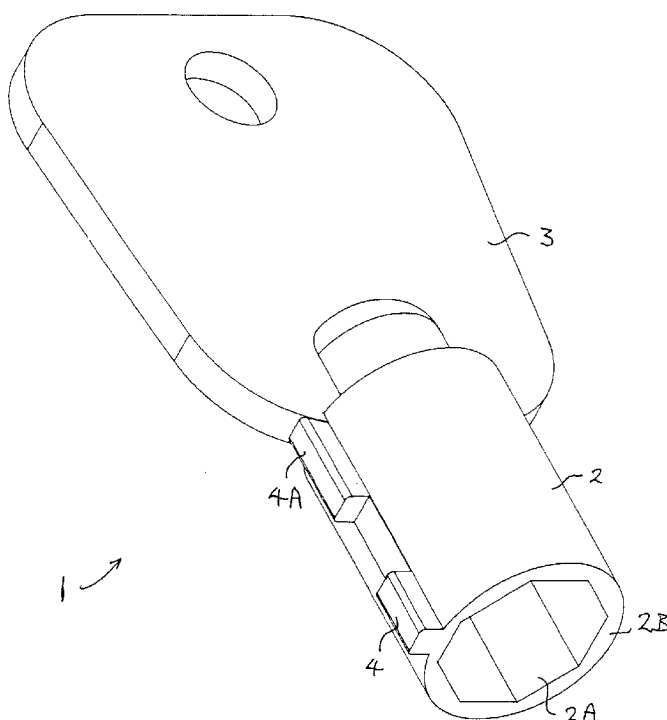


FIG. 1

EP 0 936 330 A1

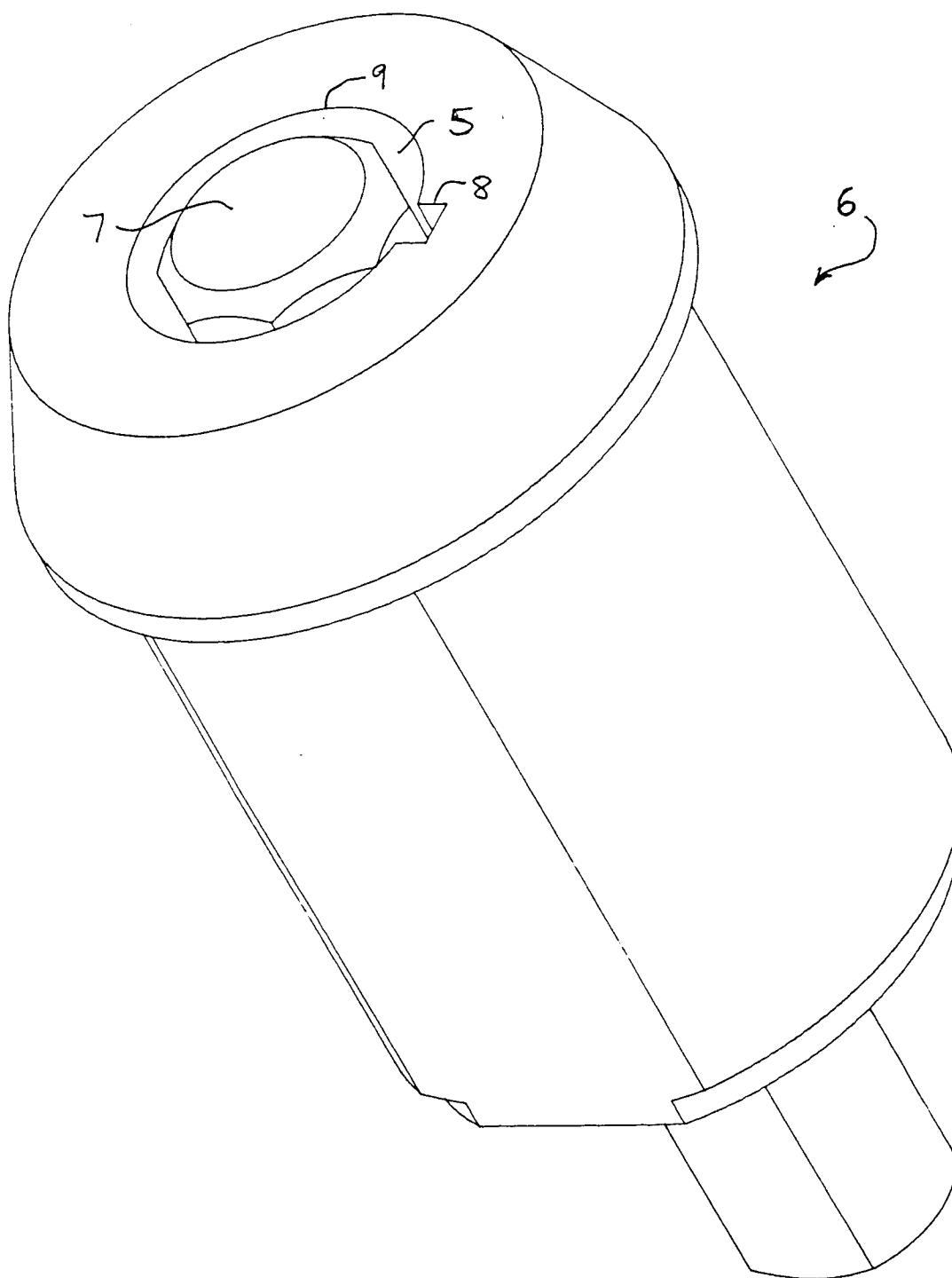


FIG. 3

Description

[0001] This invention relates to a radial tumbler lock and key (sometimes known as an axial tumbler pin lock and key).

[0002] Known radial pin tumbler lock and keys are provided with cylindrical mating configurations. However, such locks can be prone to picking.

[0003] According to the present invention, there is provided a radial pin tumbler lock and key, characterised in that the lock and key each have a non-cylindrical, substantially regular polygonal mating configuration extending parallel to the direction of insertion of the key in the lock, the mating configuration of the key being provided by a hollow body open at one end with the polygonal mating configuration being provided inside the body and extending longitudinally thereof, and the mating configuration of the lock being provided by a polygonal upstanding post, the post being dimensioned to mate inside the body of the key.

[0004] The polygon may be that of an octagon.

[0005] Preferably, the radial pin tumbler lock is provided with pins to engage mating radially displaced cuts of the key.

[0006] The exterior of the cylindrical body can be provided with one or more radially-outwardly extending ribs running longitudinally of the cylindrical body, the ribs being insertable through appropriately-located grooves in the lock.

[0007] The key can be provided with a key bow.

[0008] The free end of the post can be provided with a chamfer to ease insertion of the key into the lock.

[0009] For a better understanding of the invention and to show how it may be carried into effect, reference will now be made by way of example, to the accompanying drawings, in which:-

Figure 1 is a perspective view of a key for a radial pin tumbler lock,

Figure 2 is a side view of the key shown in Figure 1,

Figure 3 is a perspective view of the radial pin tumbler lock, and

Figure 4 is a plan view of the radial pin tumbler lock.

[0010] Figures 1 and 2 show a key 1 having a body portion 2 of cylindrical external configuration and an octagonal internal configuration 2A having an open end 2B for insertion in the lock. The body 2 is joined to a key bow 3 and is provided with two radially-outwardly extending ribs 4 running longitudinally of the body 2.

[0011] Radially of the body 2 are provided a plurality of axial cuts (not shown) arranged around the external surface of the open end of the body 2, the cuts being of different axial lengths and spacings to provide different key combinations with the lock.

[0012] The key 1 is designed to be inserted into a mating hole (not shown) in a radial pin lock core 5 of the lock 6, shown in Figures 3 and 4.

[0013] The lock 6 is provided with a central upstanding post 7, whose free end is chamfered. The post 7 is provided with an external, possibly regular octagonal configuration to match that of the inside of the key 1. Surrounding the post 7 is an annular space with a substantially circular outer diameter, this space defining the core 5 and being so dimensioned to receive the cylindrical body 2 and rib 4, 4A of the key 1. To accommodate the rib 4, 4A, one or more corresponding grooves 8 are provided in the cylindrical wall 9 defining the outer diameter of the core 5.

Claims

1. A radial pin tumbler lock (6) and key (1), characterised in that the lock and key each have a non-cylindrical, substantially regular polygonal mating configuration extending parallel to the direction of insertion of the key in the lock, the mating configuration of the key being provided by a hollow body (2) open at one end with the polygonal mating configuration (2A) being provided inside the body and extending longitudinally thereof, and the mating configuration of the lock (6) being provided by a polygonal upstanding post (7), the post being dimensioned to mate inside the body of the key.
2. A lock and key according to claim 1, wherein the polygon is that of an octagon.
3. A lock and key according to claim 1 or 2, wherein the radial pin tumbler lock is provided with pins to engage mating radially spaced cuts of the key.
4. A lock and key according to claim 1, 2 or 3, wherein the exterior of the cylindrical body of the key is provided with one or more radially-outwardly extending ribs (4, 4A) running longitudinally of the cylindrical body, the ribs being insertable through appropriately-located grooves (8) in the lock.
5. A lock and key according to any one of the preceding claims, wherein the free end of the post (7) is provided with a chamfer to ease insertion of the key into the lock.

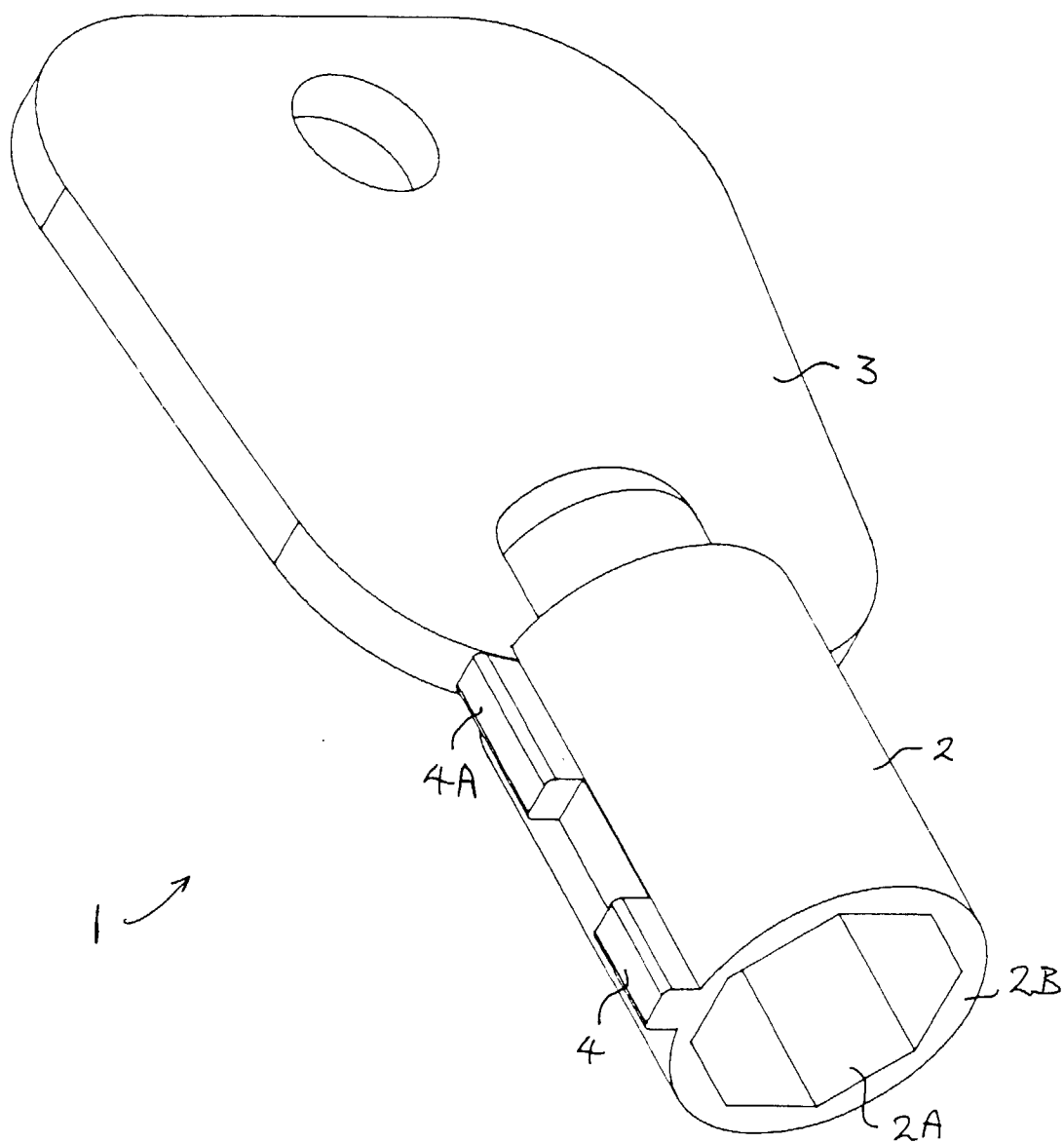


FIG. 1

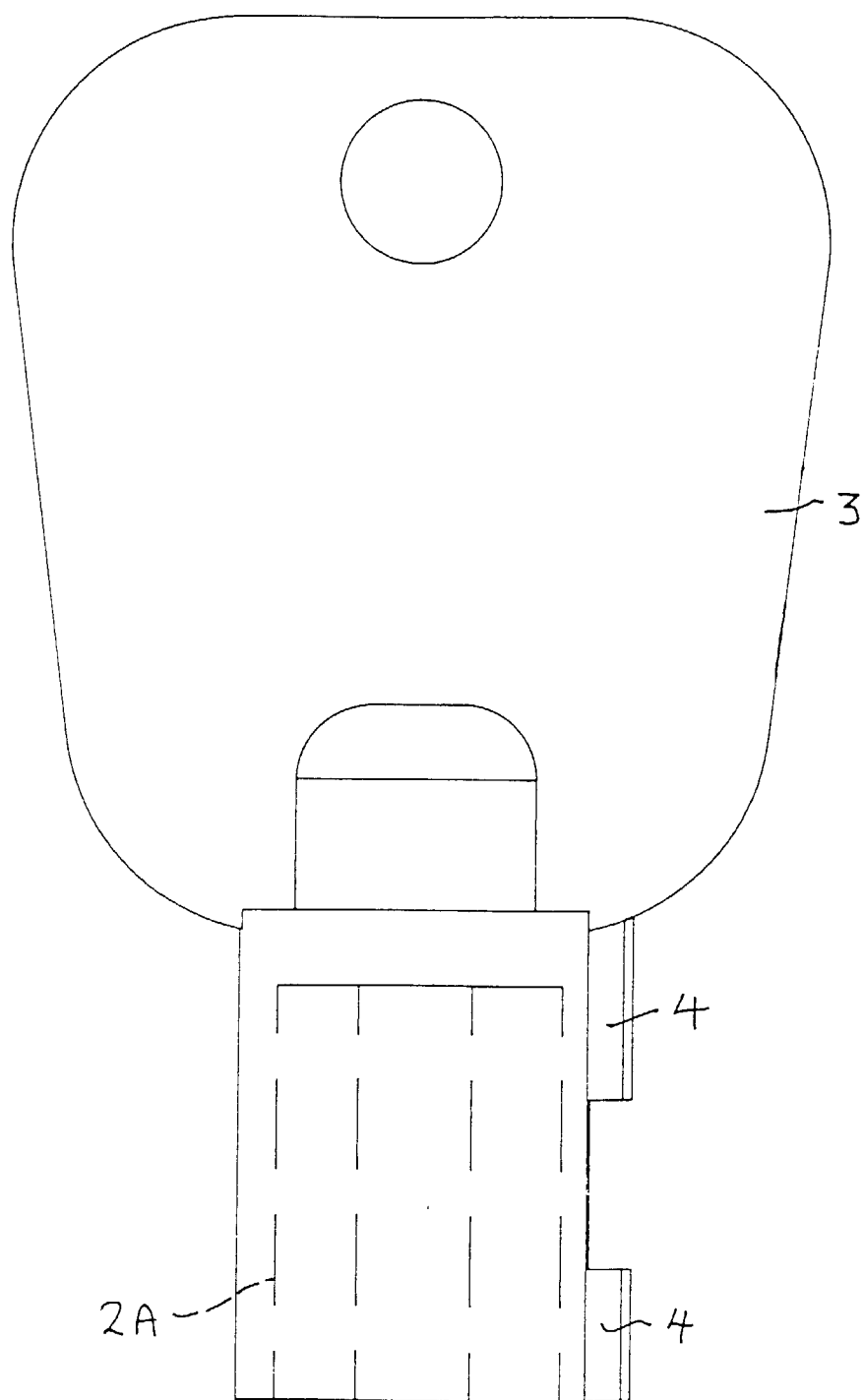


FIG. 2

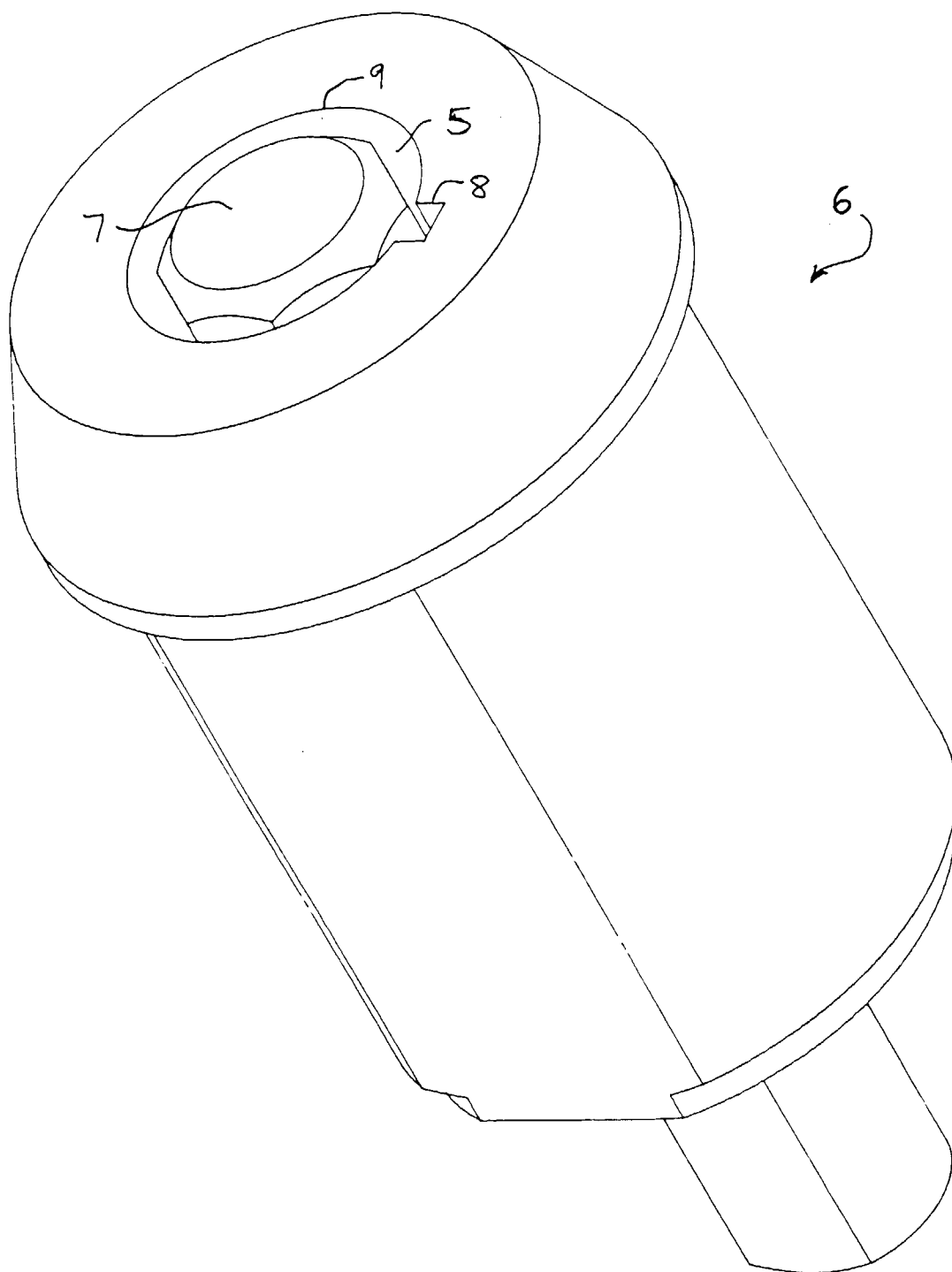


FIG. 3

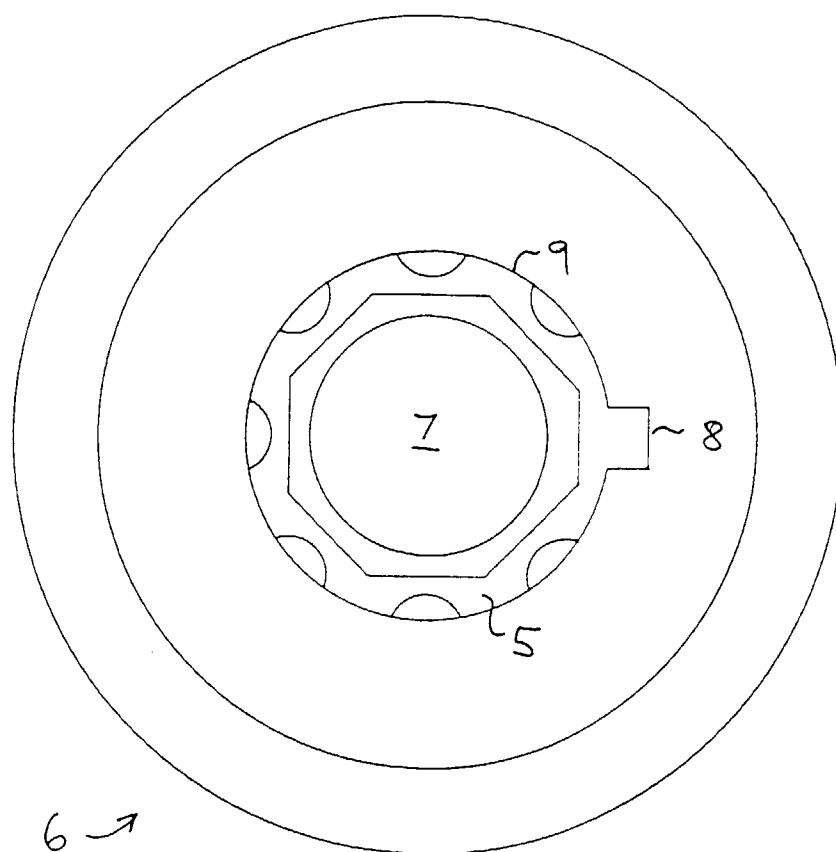


FIG. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 1047

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A	* column 5, line 69 - column 6, line 22; figures 9-26 *	1,3	
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A	GB 1 563 400 A (KABUSHIKI-KAISHA TOKAIRIKA-DENKI-SEISAKUSHO) 26 March 1980 * page 3, line 100 - line 120; figures 1-4 *	1-3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		25 May 1999	PEREZ MENDEZ, J
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 (03.82) (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 99 30 1047

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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