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(54) Lock and key combination

(57) A radial pin lock (5) has a surface 6 with holes to receive mating actuating pins of a key (1), the surface (6) having a central, conical configuration to inhibit purchase of a drill on the surface (6). The key (1) has a pin holder (4) with an end surface which is of corresponding recessed conical configuration (8) to mate with the protruding conical configuration (7) of the lock.

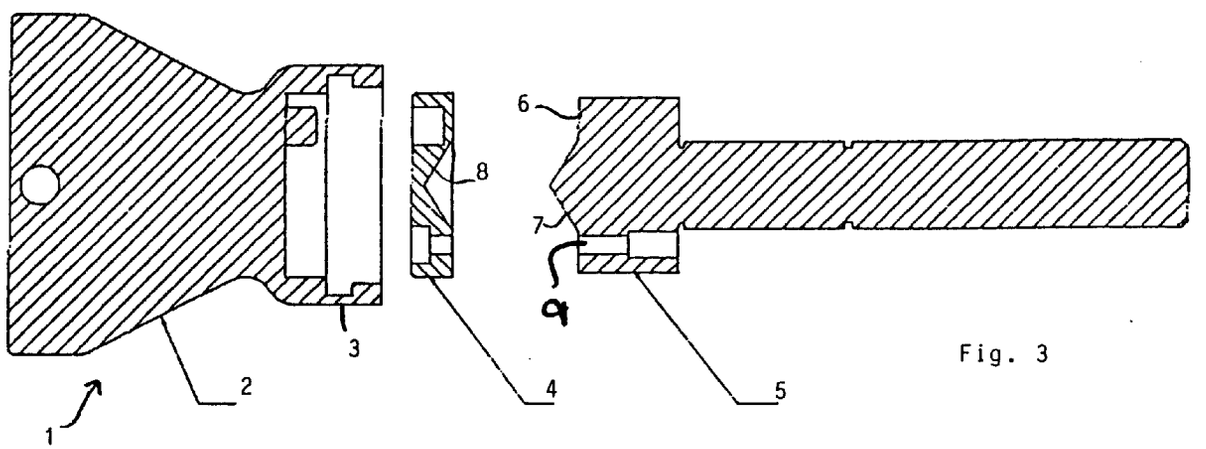

Fig. 3

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Description

This invention relates to a lock and key combination and more particularly to the type of lock known as a radial pin tumbler lock or sometimes known as an axial tumbler pin lock.

With some known types of such locks, the radial pin lock itself has axially-extending holes arranged around a circle to receive mating actuating pins of a key. Such a surface of the lock is generally planar, which permits the possible abuse of the lock by drilling the tumbler out.

US-A-3 783 661 shows a typical tumbler lock incorporating an anti-pick lock assembly.

According to the present invention, there is provided a lock and key combination, characterised in that the key has a surface with protruding actuating pins arranged in a circle which mate with corresponding holes in one surface of the lock and the two surfaces having respective non-planar mating configurations with the lock having a protruding, central conical formation and the key having a central, recessed conical formation corresponding to the protruding formation of the lock.

For a better understanding of the present invention and to show how the same 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 plan view of the key shown in Figure 1,

Figure 3 is a diagrammatic sectional view of the key, with its pin holder and a radial pin tumbler lock for the key, the parts being shown separated, and

Figure 4 is a view of the components shown in Figure 3 with the key inserted in the lock core.

Referring to the drawings, a key 1 includes a key grip 2 and a circular key pin insert or pin holder 4. The pin holder 4 holds, in use, a plurality of protruding pins (not shown) arranged in a circle around the end surface of the pin holder, the pins being of different lengths to provide some four and a half million different key combinations with the lock by interacting with appropriate length combination pins (not shown) and driving pins (not shown) situated, and free to move axially, within the tumbler core holes 9.

The key 1 is designed to be inserted into a plurality of holes 9 in a radial pin lock core 5, the holes being arranged in a corresponding circle on an end surface 6 of the tumbler 5.

In order to prevent misuse of an inappropriate key and to inhibit the user of a drill from getting a purchase on the surface 6, the surface 6 is given a central, non-planar configuration. This configuration, as indicated, is a protruding conical configuration 7.

The end surface of the pin holder 4 of the key 1 is given a similar central, non-planar configuration which is of hollow conical form as indicated by the numeral 8. Thus, the key 1 can mate precisely with the lock 5.

Claims

1. A lock (5) and key (1) combination, characterised in that the key (1) has a surface (8) with protruding actuating pins arranged in a circle which mate with corresponding holes in one surface (6) of the lock and the two surfaces (6, 8) having respective non-planar mating configurations with the lock having a protruding, central conical formation and the key having a central, recessed conical formation corresponding to the protruding formation of the lock.

2. A lock and key combination according to claim 1, wherein said actuating pins are held in a pin holder (4) of the key.

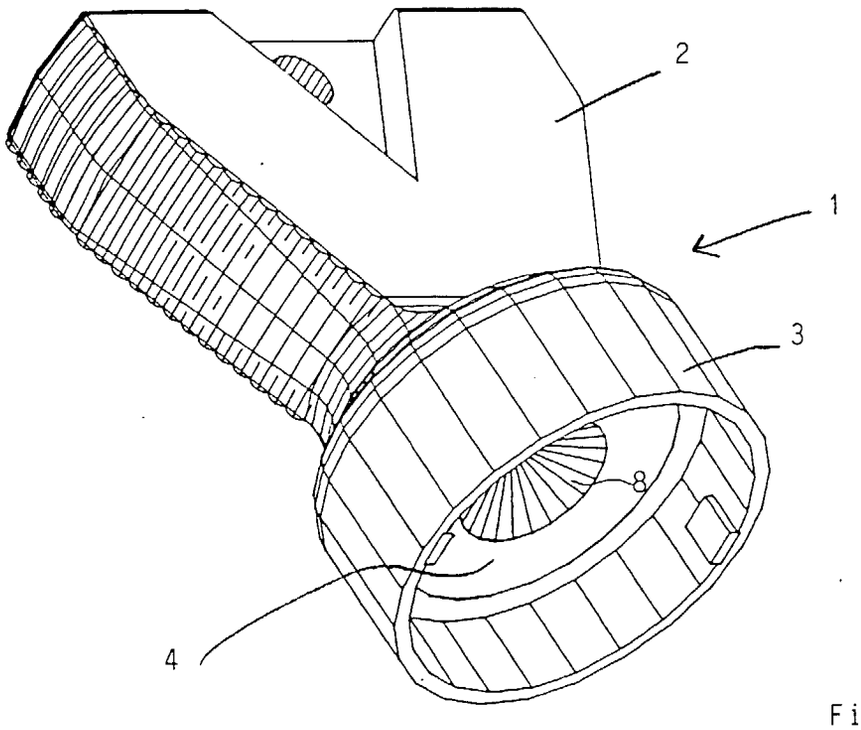

Fig. 1

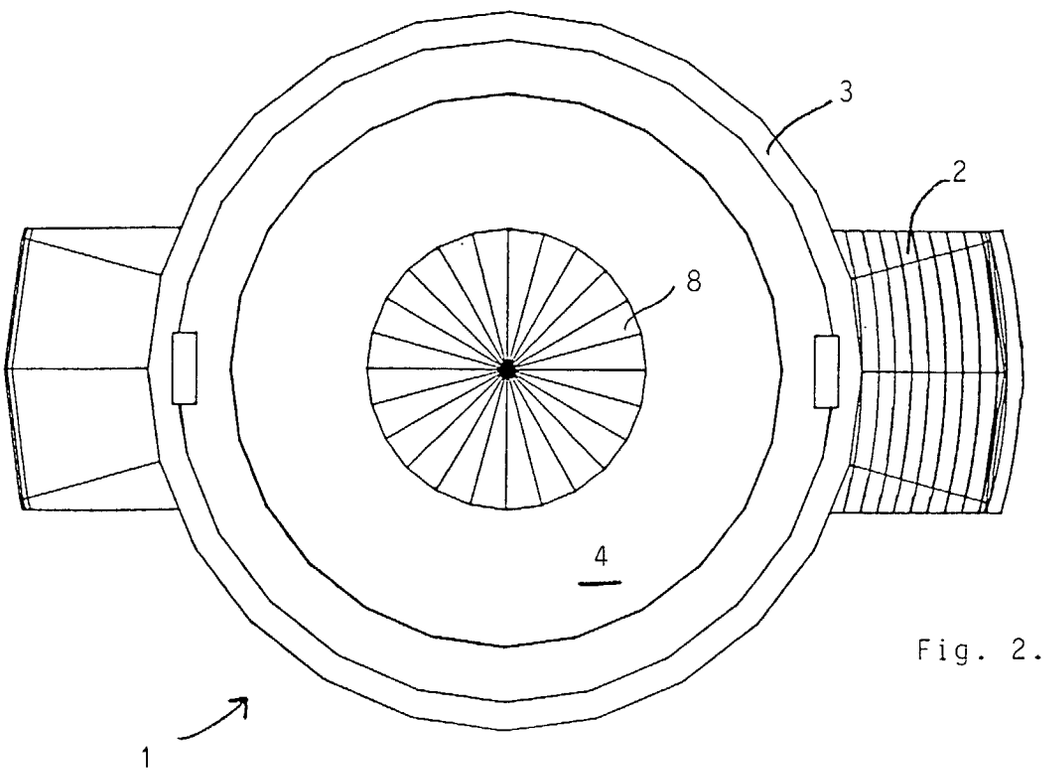

Fig. 2.

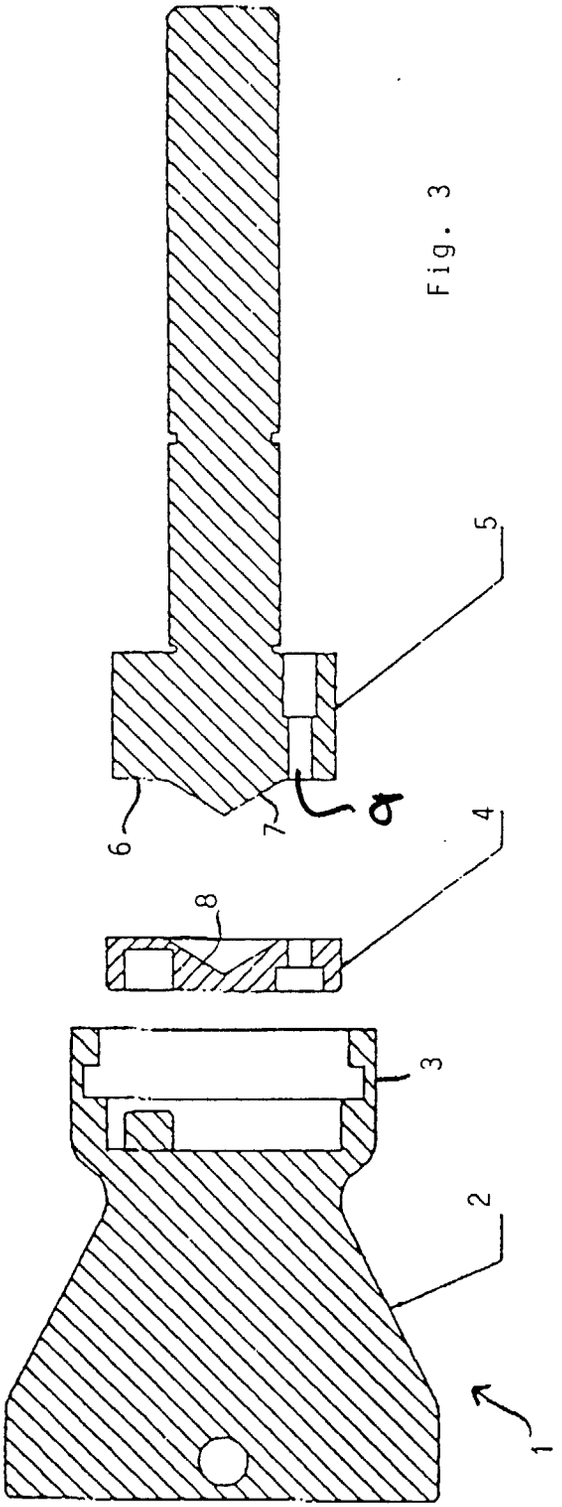

Fig. 3

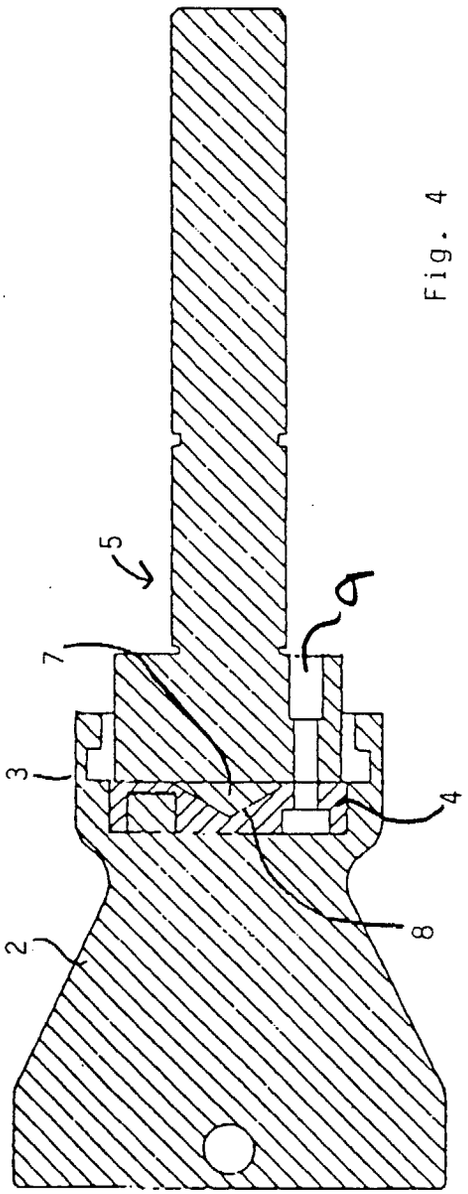

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 98 30 1316

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 3 339 384 A (H. GREENWALD) 5 September 1967 * the whole document *	1	E05B27/08 E05B17/20
A	US 3 756 049 A (W. J. KERR) 4 September 1973 * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	2 June 1998	Vacca, R

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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