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(54) Shackleless security padlock

(57) The object of this invention is a padlock without the usual shackle in hardened steel, capable of being fitted to join the two studs (3) replacing the metallic rings, provided onto the door to be locked by means of its body (7). The padlock is hemispherical in shape, this being the only visible part on the door and is provided with the traditional central locking mechanism.

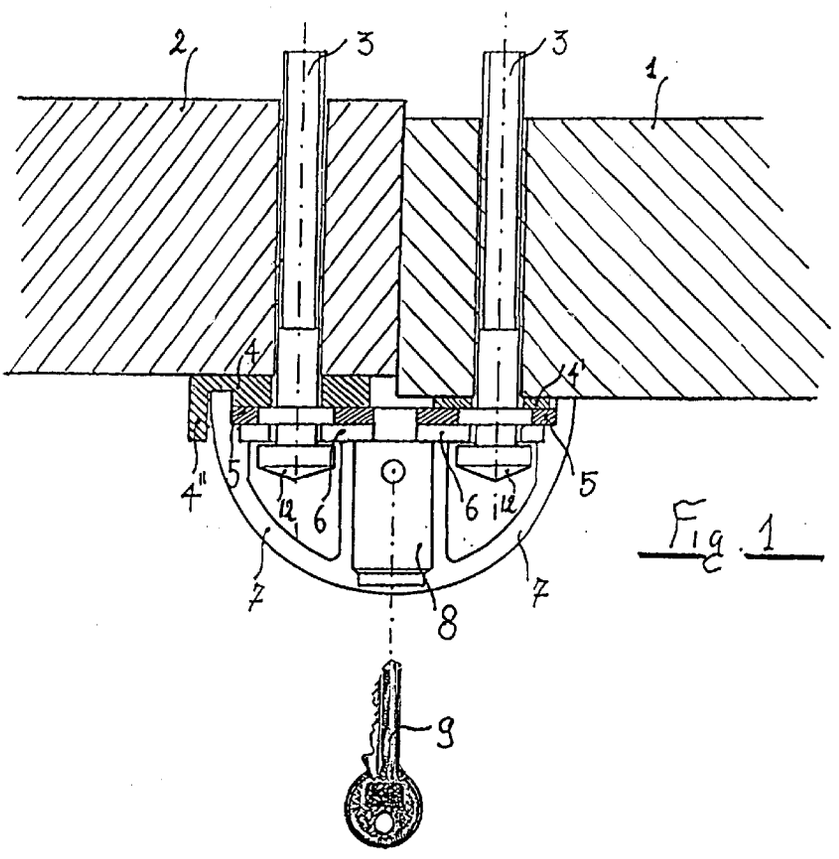

Fig. 1

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Description

[0001] This invention relates to a new concept of metal "padlocks," that is to say, a locking system without the usual straight shackle or link which is normally inserted into two rings provided for the locking thereof.

[0002] It is well known that the weak part of currently available padlocks is the metallic shackle itself which, even when made of treated steel alloys, is not strong enough to withstand the action of the saw or cutting nippers which a burglar may easily obtain.

[0003] To avert such a risk, this invention offers a new type of padlock, capable of joining the two jambs of a door without resorting to the more usual, visibly-exposed and easily reachable shackle, but, rather, using the body of the lock itself, whose dimensions, design, and the materials used in manufacturing provide greater security against break-ins.

[0004] These and other characteristics will now appear to be more closely related to a simple way of applying the invention illustrated merely by way of example and not restrictive of the potential application of his patent Reference is made to the enclosed drawings, where:

TAB. 1, fig. 1, is a representation of the installed padlock;
TAB. 2, figs. 2 & 3, are a cross-section and a view of the casing;
TAB. 3, figs. 4, 5, 6, & 7, are representations of the bolt and of the plate or lock cap;
TAB. 4, figs. 8 & 9, are representations of the details of the protective shield of the padlock;
TAB. 4, fig. 10, is a representation of one of the locking studs to be driven into the door.

[0005] With reference to the above-mentioned figures, the number 1 is used to indicate the right jamb, 2 the left jamb of the door to be locked with the padlock, 3 the threaded through studs previously fitted onto the door; 4 indicates a protective shield - here asymmetrical in shape - used to compensate for any differences in level between the two jambs, where 4' is used to indicate the washer which is almost always required.

[0006] 5 indicates the cap which drives the bolt, 6, within the hemispherical-shaped casing, 7, which forms the body of the lock operated by means of a cylinder 8 and a key 9 whose rotation permits the bolt (6) to vary the position of the sinusoidal recesses 10 which come in contacts with the studs (3) during closure and penetrate the grooves 11 provided between the tips 12 and the collars 13.

[0007] 7' indicates the compartment within the casing (7) which contains the cap 5; 7" is the compartment which contains the bolt (6); 7"' indicates the compartment which contains the head (12) of the stud (3); 7"" indicates the compartment that contains the cylinder 8: 14 indicates the threaded holes designed to secure by means of screws the cap (5) to the casing (7), and 14' indicates the through holes in the cap.

[0008] 15 indicates the through holes in the cap (5), which permit the studs (3) to be driven into the casing (7).

[0009] 4" indicates the raised neck of the protective shield (4) which prevents access to the stud (3) and 16 indicated the through hole via which the protective shield (4) is secured to the door surface (1) by means of the screw.In practice, the details related to manufacture, dimensions, shape and other features of this invention may still be altered without affecting the validity of this industrial patent; indeed the invention thus designed may undergo several modifications and variations all contained within the concept of the invention. Furthermore all elements may be replaced by other technically equivalent elements.

Claims

1. "SHACKLELESS SECURITY PADLOCK," comprising a padlock body (7) having a cylinder (8), a bolt (6), and a cap (5), characterised by the fact that the padlock body (7) is hemispherical in shape, with, in the middle, a keyway for the introduction of a key (9) which, by means of a cylinder (8), placed in the compartment (7""), operates the bolt (6). The bolt (6) has an "S" shape so that in the closing position the recesses (10) engage the grooves (11) of the threaded studs (3) previously installed on the two jambs of the unit the padlock is meant to lock.
   It is furthermore characterised by the fact that the grooves (11) are cut between the specially-shaped heads (12) and collars (13).
   It is furthermore characterised by the fact that the bolt (6) is located between the padlock body (7) and the cap (5), both located in special compartments (7";7') within the body of the padlock. It is also characterised by the fact that the cap (5) has two through holes (15), via which the stud heads (3) enter and reach the compartments (7"') within the hemisphere (7) forming the padlock body, there to be blocked by the bolt (6).

2. "SHACKLELESS SECURITY PADLOCK," characterised, according to the main claim, by the fact that the through holes (14') are drilled into the cap (5) and the threaded holes (14) into the casing (7), such that the two parts described are joined by means of screws.

3. "SHACKLELESS SECURITY PADLOCK," characterised, according to the main claim, by the fact that in the version shown there is an asymmetrical, protective security shield (4) with a raised neck (4") and through hole (16) having the function of both protecting the studs (3) from the danger of break-in, and of making up for any differences in level be-

tween the two doorjambs (1) and (2), in conjunction with a washer (4').

4. "SHACKLELESS SECURITY PADLOCK," characterised, according to the main claim, by the fact that the protective security shield (4) may also be circular and symmetrical, to protect the padlock body (7) on all sides.

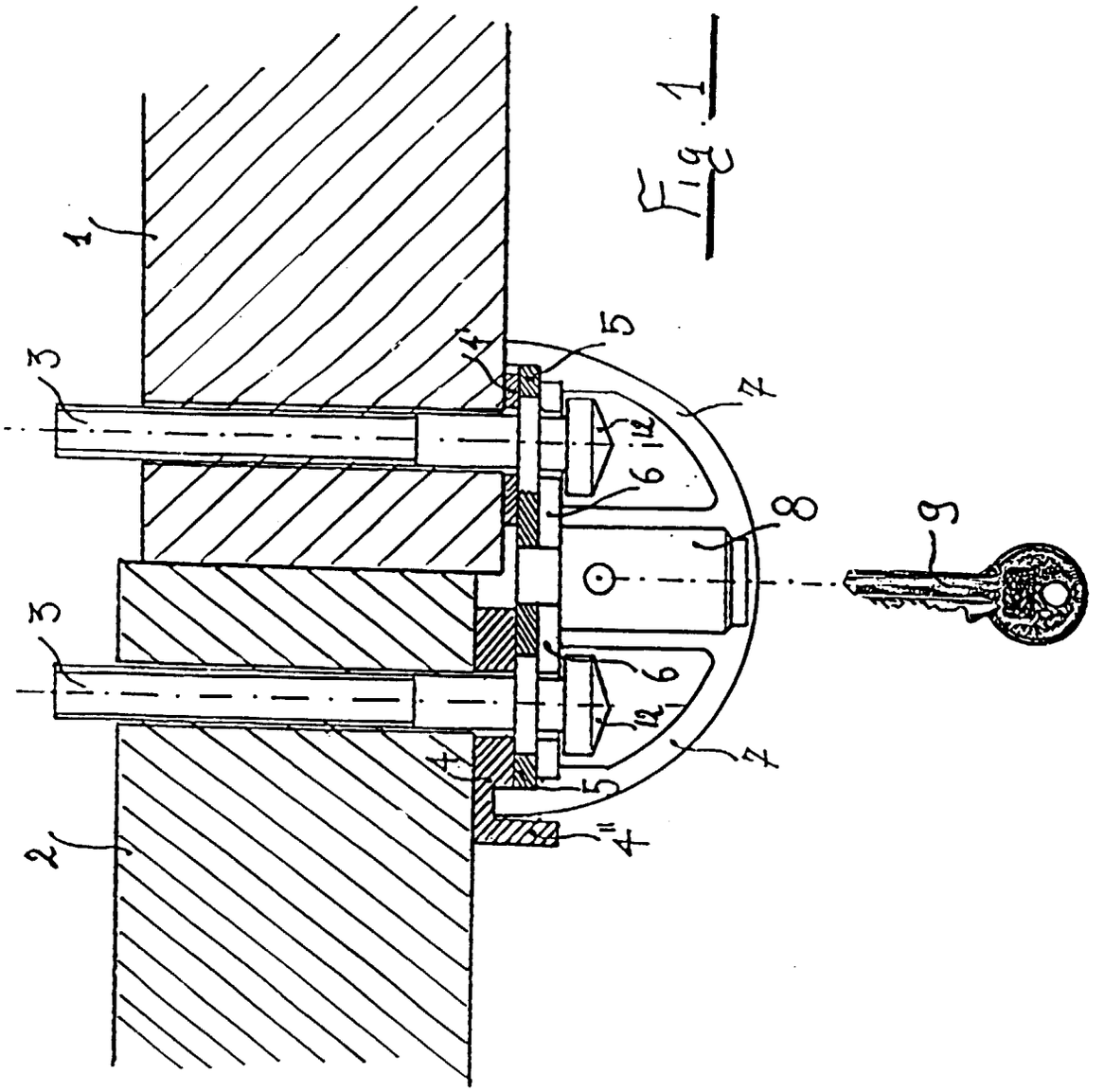

Fig. 1

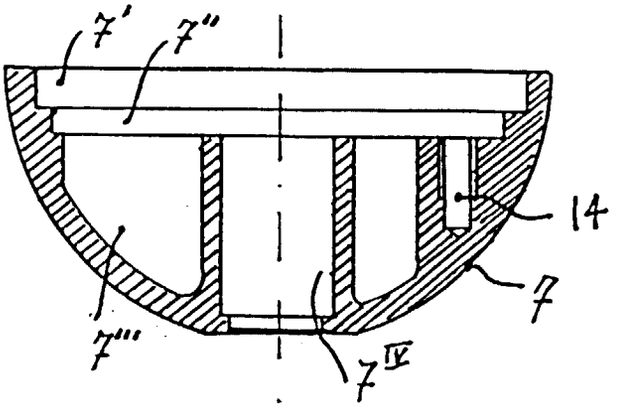

Fig. 2

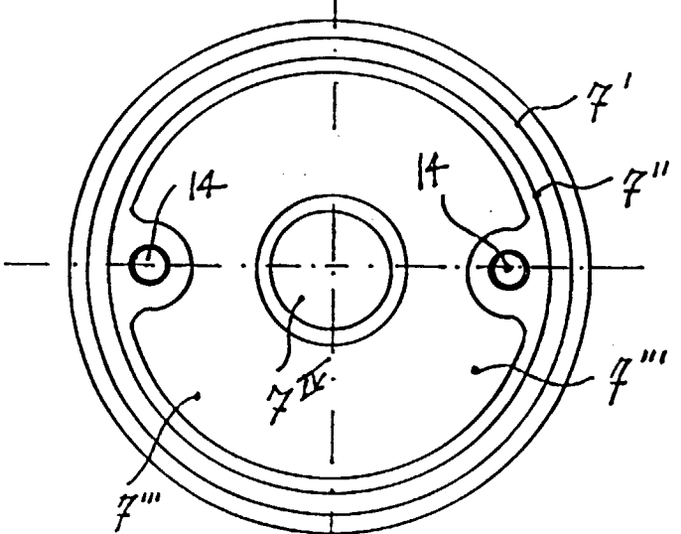

Fig. 3

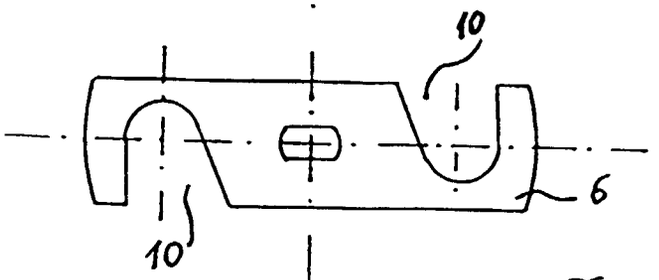

Fig. 4

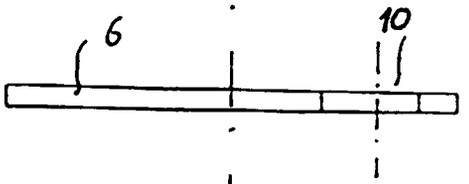

Fig. 5

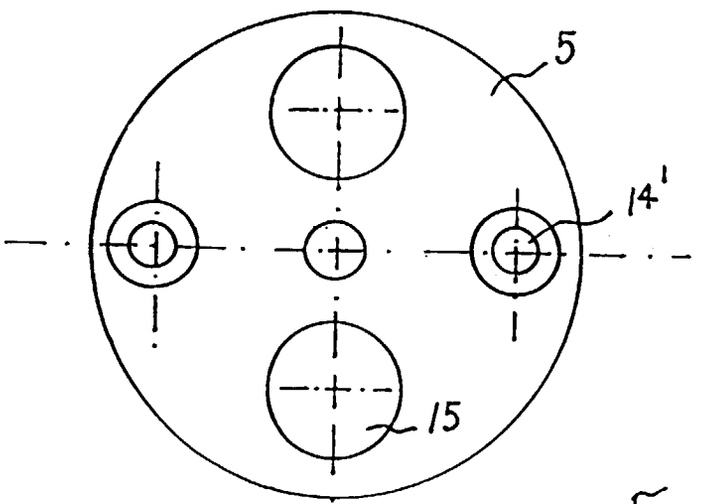

Fig. 6

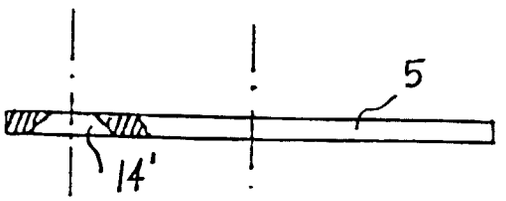

Fig 7

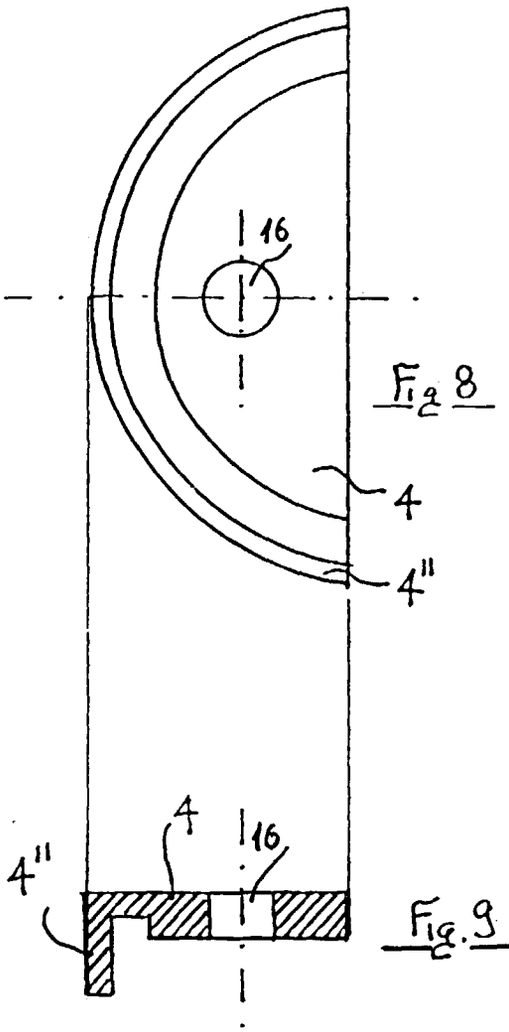

Fig 8

Fig. 9

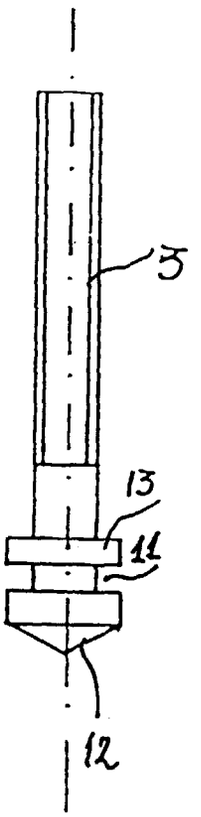

Fig. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 99 83 0246

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 3 996 774 A (BEST WALTER E) 14 December 1976 (1976-12-14) * the whole document *	1	E05C19/18 E05B67/36
A	US 4 269 048 A (MCDORMAN ROBERT L) 26 May 1981 (1981-05-26) * the whole document *	1	
A	US 2 660 872 A (BEACH) 1 December 1953 (1953-12-01) * the whole document *	1	
A	FR 408 312 A (FEOLA) 24 March 1910 (1910-03-24) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

E05C
E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	30 August 1999	Westin, K

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 83 0246

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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30-08-1999

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