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(54) Title: CYLINDER LOCK WITH ANTI-BREAKING FUNCTION

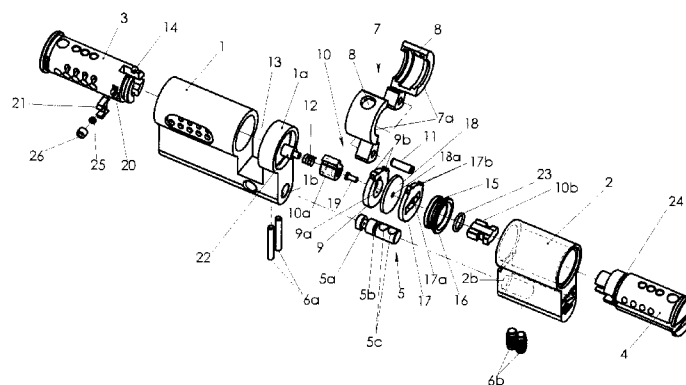


Fig. 1

(57) Abstract: Cylinder lock with anti-breaking function can be implemented in locking devices with increased security for living houses, public and industrial buildings. The cylinder lock consists of inner housing part (1) with rotatable mounted therein inner core (3), in channel (13) of which there is disposed composite cam (7), and outer housing part (2) with rotatable mounted therein outer core (4). Both housing parts (1, 2) are joined by connecting element (5) with weakened section. In the inner core (3) there is formed radial profile core bore (20) in which there is disposed retaining element (21) under the spring (25) and pin (26) pressure. In the inner core (3) there is disposed extender (22), supporting compression spring (12), which pushes first switching element (10a) together with central pin (19) until its engagement in a forward position with first transmitting plate (9) in the composite cam (7), so that the retaining element (21) gets out of the radial profile core bore (20) and falls onto the extender (22) behind the first switching element (10a).



## AMENDED CLAIMS

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## CLAIMS

## 1. Cylinder lock comprising

- an inner housing part (1) with rotatable mounted therein an inner core (3),
  - an outer housing part (2) with rotatable mounted therein an outer core (4),
  - 5 - a connecting element (5), joining the housing parts (1) and (2), the connecting element (5) is mounted in longitudinal bores (1b) and (2b), respectively formed in the housing parts (1) and (2),
  - a composite cam (7), mounted between both cores (3) and (4), covering the inner end of the inner core (3) through a ring channel (14) formed therein,
  - 10 - a switch (10) including a first and second switching elements (10a) and (10b) to provide selectively connection of the inner core (3) or outer core (4) with the cam (7),
  - the cam (7) consists of two identical parts (7a) interlocked, in the area of the cam (7) ring, around a first transmitting plate (9) with a profile hole (9a), to engage with the first switching element (10a), and with at least two locking teeth (9b), engaged in radial
  - 15 holes (8) in the cam parts (7a) which are connected each other in the area of the cam (7) tooth, by pin (11),
  - a compression spring (12), mounted in the inner core (3), behind the first switching element (10a),
- characterized in that** the cam (7) is mounted in a channel (13) formed in the inner
- 20 housing part (1), in the outer side (1a) of which there is mounted a stepped sleeve (16), the inner end of which is covered through a ring channel (15) formed therein by the cam (7), which includes also a second transmitting plate (17) with a profile hole (17a), to engage with the second switching element (10b), and with at least two locking teeth (17b) engaged together with the locking teeth (9b) of the first transmitting plate (9) in
- 25 the radial holes (8) of the cam parts (7a), moreover between both transmitting plates (9) and (17) of the cam (7) there is a connecting plate (18) with a central hole (18a), through which there is mounted a central pin (19) passed through their profile holes (9a) and (17a), moreover, additionally in a radial profile core hole (20) formed in the inner core (3), there is mounted under the spring (25) and pin (26) pressure, a retaining
- 30 element (21) provided to take a security position on an extender (22), axially disposed in the inner core (3) behind the compression spring (12), so that upon removal of the outer core (4) the first switching element (10a) together with the central pin (19) can be

pushed out by the compression spring (12) in a forward position in the profile hole (9a) of the first transmitting plate (9) allowing the retaining element (21) to get into the security position on the extender (22), behind the first switching element (10a), thus blocking all degrees of free movement of the first switching element (10a), and  
5 respectively of the cam (7), towards the inner core (3), while in the same time the second switching element (10b) is permanently connected to the outer core (4) by means of a spring ring (23) covering it through a channel (24) formed therein.

2. Cylinder lock, according to claim 1, **characterized in that** the connecting plate (18)  
10 is freely rotatable around the central pin (19) and it is made of hardened steel like the central pin (19), the first and second transmitting plates (9 and 17) and the stepped sleeve (16).

3. Cylinder lock, according to claim 1 and 2, **characterized in that** the retaining  
15 element (21) should pass in a security position on the extender (22) upon removal of the outer core (4), while in normal operation of the cylinder lock the retaining element (21) is disposed in the radial profile core hole (20) on the first switching element (10a) in a position, doesn't limiting its axial movement.

20 4. Cylinder lock, according to claim 1, 2 and 3, **characterized in that** the connecting element (5) is fixed to the housing parts (1) and (2) by means of respective transversal pins (6a) and (6b), passing through bores (1c) and (2c) transversally formed therein, and through the channel (5a) and transversal bores (5c) respectively formed in the connecting element (5), furthermore on the connecting element (5), at the place where  
25 the housing parts (1) and (2) are joined, there is provided a weakened section, by means of formed second channel (5b).

5. Cylinder lock, according to claim 4, **characterized in that** the transversal pins (6a) are made of hardened steel.

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**Statement under Art. 19(1) of PCT****Concerning int. appl.№ PCT/BG2014/000016**

The new set of claims includes the clarifications of claim 1 wherein the additional features “upon removal of the outer core (4)”, “allowing the retaining element (21) to get into the security position on the extender (22), behind the first switching element (10a) and “of the first switching element (10a) and respectively” are taken from the description, page 9, lines 1-8).

Therefore the corrections of claim 1 do not go beyond the initial disclosure of the invention.