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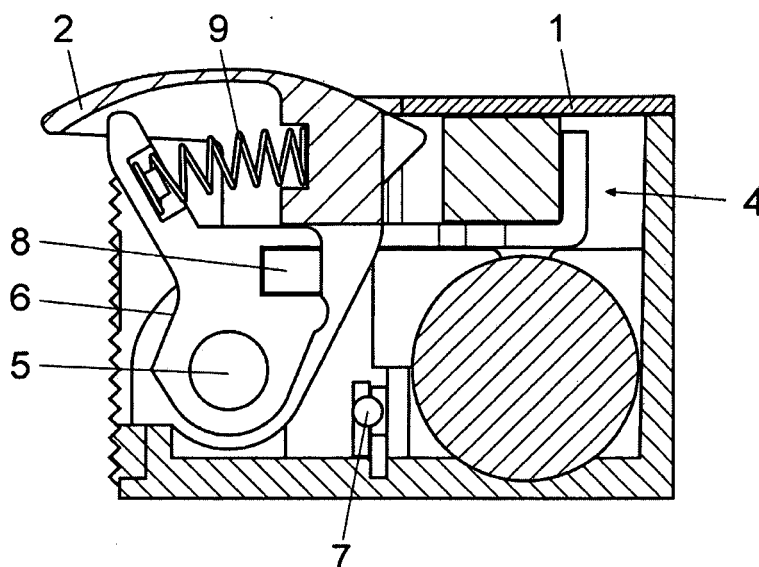
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(54) **ELECTRIC STRIKE FOR DOORS**

(57) The invention relates to an electric strike for doors, which comprises: a box (1) in which the following are assembled: a rotational latch (2) for retaining a bolt of a lock of a door in a closed position by means of a rotation shaft (5); an unlocking mechanism (4) of the rotational latch, which can be actuated electrically; and means for monitoring the state of the door that include a rotational slider (6). The means for monitoring the state

of the door comprise: an electrical switch (7) or reed switch, arranged in a fixed position, and a magnet (8) assembled in the rotational slider (6), such that when said rotational slider (6) is moved towards the inside of the box (1) by the action of the bolt of the lock, the magnet (8) is arranged facing the electrical switch (7), the magnetic field of the magnet (9) causing the activation and inactivation of the electrical switch.



**Fig. 3**

## Description

### OBJECT OF THE INVENTION

[0001] The object of the invention is an electric strike for doors, having a device for monitoring the open or closed state of the door, and which comprises: a box in which a rotational latch for retaining the bolt of a lock in a closed position of a door, an unlocking mechanism of the rotational latch, which can be actuated electrically, and means for monitoring the state of the door are assembled.

### FIELD OF APPLICATION OF THE INVENTION

[0002] This invention can be applied to the field dedicated to the manufacture of electric strikes for doors.

### STATE OF THE ART

[0003] The utility model U201630978 describes an electric strike for doors, with a device for monitoring the state of the door which comprises a box in which the following are assembled: - a rotational latch that defines a cavity for the housing of a bolt of a lock, and which is enabled to rotate between an open position, in which the movement of the bolt of the lock is allowed in the opening direction of the door, and a closed position, in which it retains the bolt of the lock in a closed position of the door; - an unlocking mechanism of the latch, which can be actuated electrically; and - a device for monitoring the state of the door.

[0004] This monitoring device comprises a rotational slider, enabled to rotate with respect to the rotational latch, which mechanically actuates a microswitch when it is moved towards a first position by the bolt of the lock of a door when said door is in the closed position, and which releases said microswitch when the door is opened and the bolt of the lock no longer actuates on said rotational slider.

[0005] As usual, the unlocking mechanism of the rotational latch comprises a set of levers, which tend to be kept in a locked position of the rotational latch by the action of springs, and a solenoid that upon being electrically powered causes the movement of said levers towards an unlocked position of the rotational latch.

[0006] The aforementioned rotational slider, responsible for actuating the microswitch, is located in a recess made in an intermediate area of the rotational latch, such that during the operation of the strike a number of forces and frictions are produced that may provoke undesired retention of the rotational latch.

[0007] On the other hand, in the background mentioned, the open or closed state of the door is monitored by a microswitch that is mechanically actuated by an arm defined in the rotational slider and that extends through the inside of the box of the strike, from an intermediate area to one of the sides of the box in which the afore-

mentioned microswitch is found.

[0008] This monitoring device, in addition to being exposed to friction and forces that may cause operationing errors and breakdown thereof, requires the existence of a space inside the strike for the placement and movement of the arm responsible for actuating the microswitch.

[0009] Therefore, the technical problem posed is the development of an electric strike for doors, of the type mentioned above, capable of monitoring the state of the door without using mechanical components, such as the arm and microswitch indicated above and which allow the operational state of the strike to be seen more easily.

### DESCRIPTION OF THE INVENTION

[0010] The electric strike for doors object of the invention has technical characteristics intended to satisfactorily solve the problem posed, avoiding the drawbacks of the mechanical actuation of the means for monitoring the state of the door and ensuring reliable operation of the electric strike, and in particular as regards avoiding the risk of locking the rotational latch.

[0011] This electric strike for doors, being of the type mentioned above and described in the preamble of the first claim, has particular constructive characteristics intended to satisfactorily solve the aforementioned drawbacks,

[0012] Therefore, and according to the invention, this electric strike incorporates means for monitoring the state of the door associated with the strike, which comprise: an electrical switch or reed switch assembled in a fixed position and a magnet assembled in the rotational slider, such that the magnet faces the electrical switch or reed switch when the door is in the closed position and the bolt of the lock of the door holds the rotational slider down, the magnetic field of the magnet causing the activation and deactivation of the electrical switch,

[0013] An additional characteristic of the invention consists of the fact that it comprises a helical or torsion spring that acts with the opposite ends against the rotational latch and against the rotational slider tending to separate them in an angular direction using a common rotation shaft thereof as a reference.

### DESCRIPTION OF THE FIGURES

[0014] As a complement to the description provided herein, and for the purpose of helping to make the characteristics of the invention more readily understandable, the present specification is accompanied by a set of drawings, which, by way of illustration and not limitation, represent the following:

- Figure 1 shows a front elevation view of an exemplary embodiment of the electric strike for doors, according to the invention.
- Figure 2 shows a profile view of the electric strike for doors of the preceding figure.

- Figure 3 shows a profile view of the electric strike as a cross section along the A-A plane shown in Figure 1.
- Figure 4 shows a profile view of the strike as a cross section along the B-B plane shown in Figure 1.

### PREFERRED EMBODIMENT OF THE INVENTION

**[0015]** As can be seen in the exemplary embodiment shown in Figure 1, the electric strike for doors object of the invention comprises a box (1) in which a rotational latch (2) that defines a front cavity for the housing of the bolt of a lock (not shown) of a door is assembled, and which is enabled to rotate between an open position, in which the movement of the bolt of the lock of a door is allowed in the opening direction of said door, and a closed position, in which it prevents the movement of the bolt towards the open position.

**[0016]** As can be seen in Figure 2, the electric strike has terminals (3) for connecting power cables and control cables of an unlocking mechanism (4) of the rotational latch (2) on one of the smaller sides of the box (1), having known characteristics and generally shown in Figures 3 and 4.

**[0017]** Figure 3 shows that the rotational latch (2) is assembled on a rotation shaft (5) and has a housing in the central area thereof in which a rotational slider (6) is housed, also assembled on the rotation shaft (5) of the rotational latch (2), but with the possibility of independent rotation.

**[0018]** This strike comprises means for monitoring the open or closed state of the door, visible in Figure 3 and comprising an electrical switch (7) or reed switch arranged in a fixed position, and a magnet (8) assembled in the rotational slider (6); such that when said rotational slider (6) is moved towards the inside of the box (1) by the action of the bolt of the lock of the door, the magnet (8) is arranged facing the electrical switch (7) or reed switch, actuating it by means of the magnetic field thereof.

**[0019]** These means for monitoring the state of the door do not cause any physical wear nor do they require significant space for the placement thereof in the strike,

**[0020]** As can be seen in aforementioned Figure 3, this strike has a spring (9), in this case helical, that acts with the opposite ends against the rotational slider (6) and against the rotational latch (2) tending to keep them separated in an angular direction and exerting sufficient elastic force against them to prevent the locking or undesired retention of the rotational latch.

**[0021]** Having sufficiently described the nature of the invention, in addition to an example of a preferred embodiment, It is hereby stated for the relevant purposes that the materials, shape, size and layout of the described elements may be modified, provided that it does not imply altering the essential characteristics of the invention claimed below.

### Claims

1. An electric strike for doors, which comprises: a box (1) in which the following are assembled: a rotational latch (2) for retaining a bolt of a lock of a door in a closed position of said door by means of a rotation shaft (5); an unlocking mechanism (4) of the rotational latch, which can be actuated electrically; and means for monitoring the state of the door that include a rotational slider (6); **characterised in that** the means for monitoring the state of the door associated with the strike comprise: an electrical switch (7) or reed switch arranged in a fixed position, and a magnet (8) assembled in the rotational slider (6), such that when said rotational slider (6) is moved towards the inside of the box (1) by the action of the bolt of the lock of the door, the magnet (8) is arranged facing the electrical switch (7), the magnetic field of the magnet (9) causing the activation and inactivation of said electrical switch.
2. The strike, according to claim 1, **characterised in that** the rotational latch (2) has a housing in the central area thereof in which the rotational slider (6) is housed.
3. The strike, according to any of the preceding claims, **characterised in that** the rotational slider (6) is assembled, with the possibility of independent rotation, on the same rotation shaft (5) of the rotational latch (2).
4. The strike, according to any of the preceding claims, **characterised in that** it comprises a spring (9) that acts with the opposite ends against the rotational slider (6) and against the rotational latch (2) tending to keep them separated in an angular direction and exerting sufficient elastic force against them to prevent the locking or retention of the rotational latch (2).

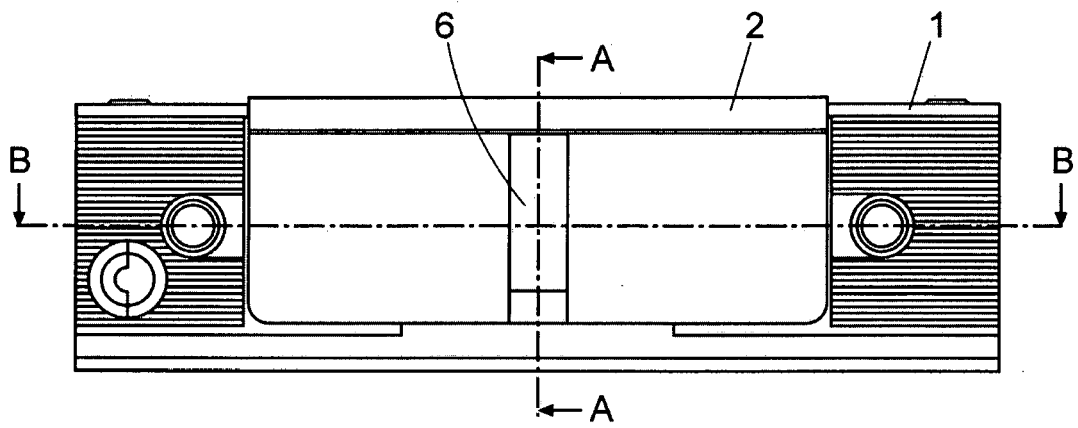


Fig. 1

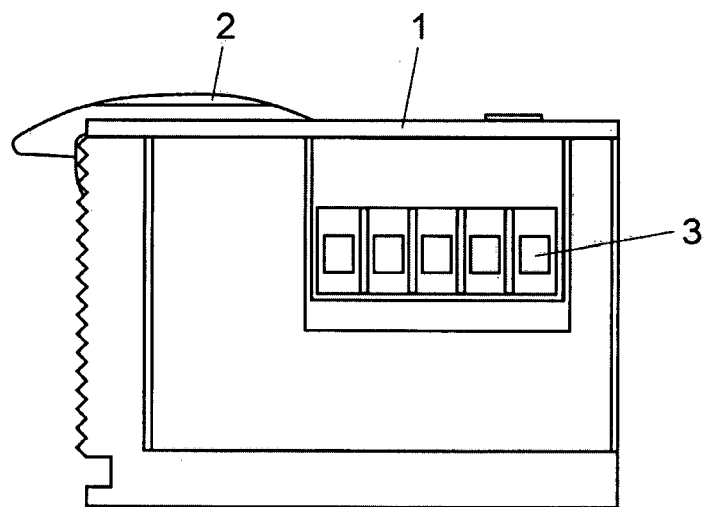


Fig. 2

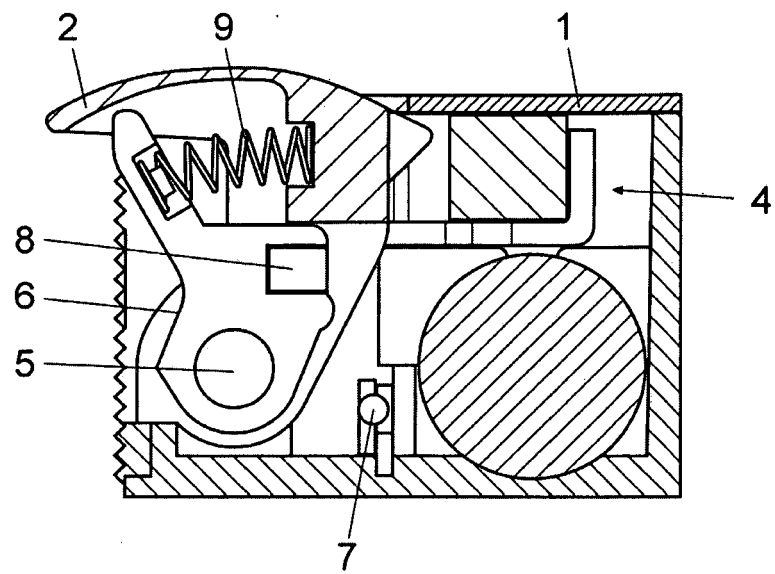


Fig. 3

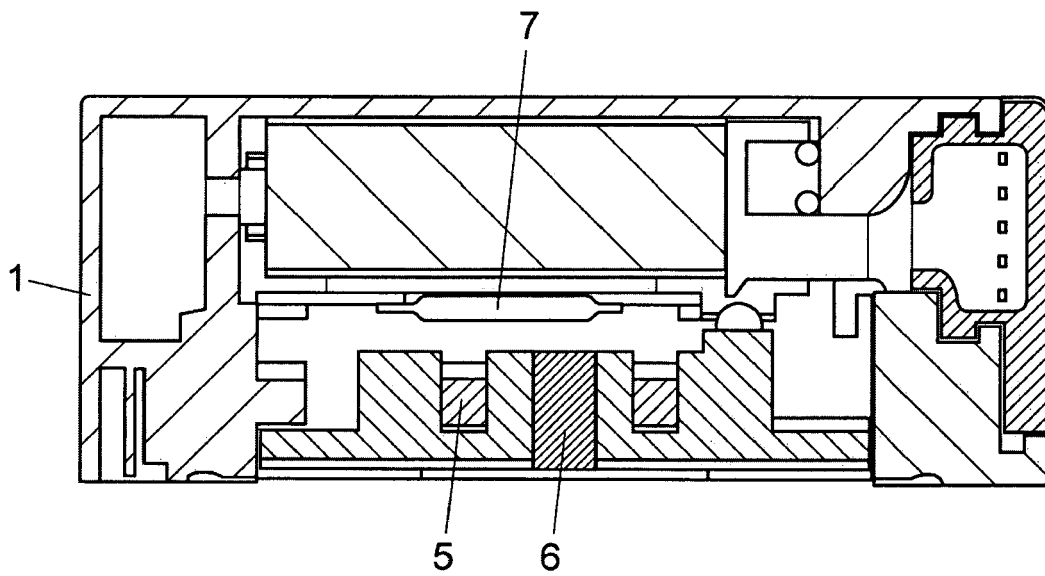


Fig. 4



## EUROPEAN SEARCH REPORT

 Application Number  
 EP 18 00 0625

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                 |                                  |                                             |
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| Place of search                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                 | Date of completion of the search | Examiner                                    |
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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EP 18 00 0625

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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