

Title: Door lock for an all-glass door with fixed glass side panel

Description

This invention, according to the generic part of patent claim 1, relates to a door lock for an all-glass installation which comprises a fixed glass side panel, whereby the door lock is attached to the all-glass door through a boring contained therein, and basically includes a dead bolt, a latch bolt and a follower, and a lock strike box is attached to the glass side panel through a boring contained therein at the height of the door lock, the door lock being designed to include a first and a second lock casing as well as a first and a second lock strike box, in each case only one of them comprises respectively is engaged by, the latch bolt respectively the dead bolt.

Door locks for all-glass doors are known in prior art, which preferably comprise only one latch bolt to be blocked for example, through actuation of a key. In this case, the portion of the door lock that is actuated via a follower by means of a lever handle and that comprises the latch bolt, is mounted on the all-glass door leaf and the lock strike box provided at the fixed side panel comprises a strike plate for the latch bolt.

From DE 43 00 810 A1 and DE GM 76 34 506 door locks for all-glass installations are known which are equipped with only one closing mechanism in form of a catch bolt or a dead bolt. With regard to current safety requirements, this simply behaving closing possibility is to be considered as non-satisfactory.

DE 44 00 196 C1 and DE GM 73 28 782 illustrate door locks for all-glass installations realised with one latch bolt and one dead bolt mechanism. Due to realisation of both closing mechanisms,

these locks' design is large in size. Under aesthetic aspects, it is not really advantageous to utilise such construction type in all-glass installations. Moreover, these locks can not be universally mounted to a door and to a fixed side panel.

- 5 The object of the invention is a further development of a door lock of prior art, which can be universally utilised and can be used for different purposes after minor modification. Furthermore, such type of door lock must be easy to install.

The object of the invention is solved according to patent claim 1.

- 10 The sub-claims reflect further developments of the inventive idea. A door lock of prior art is therefore further developed in that both, the lock casing as well as the lock strike box is separated. This means each side of the all-glass installation comprises respectively one lock casing and one lock strike box.

- 15 In this case, the lock casings are linked to each other through a boring contained in the all-glass door and by means of a lever spindle passing through this boring and linking both lever handles to each other respectively on the all-glass door front and rear face. Likewise, the lock strike boxes are attached,
20 however in this case by means of a connector passing through a boring in the fixed side panel at the height of and in alignment with the lock casings. A closing cylinder is inserted through the boring inside the fixed glass side panel and by the way effectively connects both lock strike boxes to each other.

- 25 The lock casings and the lock strike boxes are designed such, that when respectively seen against each other, that means from one first side to the other second side, they are identically

designed as to their geometrical dimensions. For this reason only two moulds are required.

The latch bolt of the door lock is comprised in a first lock casing that is mounted on the side of the all-glass door to which the
5 connected all-glass door opens via a hinge in a rotation point. One part of the lock casing protrudes the vertical edge of the all-glass door. This protruding part contains the door lock's latch bolt. The second lock casing provided on the opposite side of the all-glass door presents a recess with regard to the
10 aforementioned vertical edge of the all-glass door. A strike plate with aperture is arranged in this recess, into which aperture engages a dead bolt comprised in a lock strike box of the side panel. This opposite lock strike box also protrudes the vertical edge of the fixed glass side panel, such that, in this protruding
15 part, upon locking action by means of the closing cylinder, the dead bolt moves forward and engages in the strike plate of the second lock casing. On the opposite side of this lock strike box of the fixed all-glass side panel is arranged on the other side a lock strike box having the same shape as the lock casing, which
20 comprises the strike plate for the dead bolt. This lock strike box also recesses at its outer edge with regard to the edge of the vertical all-glass side panel, such that the protruding part of the first lock casing with the therein contained latch bolt partially overlaps the lock strike box. The latch bolt of the first lock
25 casing engages thereby into an aperture of the lock strike box arranged on the opposite side.

The invention is described on the basis of one possible diagrammatically illustrated embodiment example in the following figures. It shows:

Figure 1 A sectional view through an all-glass door with fixed side panel including the door lock.

Figure 2 A front view of a door lock with all-glass door and fixed side panel.

5 The all-glass door 3 including an adjacent fixed glass side panel 9 illustrated in figure 1 may be for example components of an installation. In this case, the all-glass door 3 is pivotably supported in a rotation point 14 by means of non-illustrated hinges. On the side of the all-glass door 3, the door lock
10 basically comprises a first lock casing 1 and a second lock casing 2. The lock casings 1 and 2 are solidly positively and non-positively connected with the all-glass door 3 by means of non-illustrated connectors. A lever spindle passes through a boring contained in the all-glass door 3 and extends at the same
15 time through the non-illustrated follower. The lever handles 7 and 8 are mounted to the lever spindle ends.

At the fixed glass side panel 9 arranged in true alignment with the all-glass door 3, the lock strike boxes 10 and 11 are solidly positively and non-positively mounted to the fixed glass side
20 panel 9 likewise by means of non-illustrated attachments. A closing cylinder 16 passes through another boring contained in the glass side panel 9. The dead bolt 6 contained in the lock strike box 10 is actuated by means of a non-illustrated closing nose of the closing cylinder 16. In this case, the dead bolt 6
25 moves out of a protruding projection 13 of lock strike box 10 with regard to a vertical edge 17 of the fixed glass side panel 9. The lock strike box 11 is designed such to comprise a recess 12 with regard to the vertical edge 17 of the fixed glass side panel 9. An

opening into which a latch bolt 4 can engage is provided within the recess 12. In this case, the latch bolt 4 is displaceably arranged in the lock casing 1. The lock casing 1 protrudes with regard to a vertical edge 5 of the all-glass door 3 and thus covers, respectively overlaps the recess of the lock strike box 11. Likewise, the lock casing 2 presents a recess, which is formed analogous to the recess 12 of the lock strike box 11, as the geometrical dimensions of the parts are identical.

Upon actuation of the lever handle 7 or 8, the latch bolt 4 is retracted into the lock casing 1 and in case the dead bolt 6 is not moved forward, the all-glass door 3 can be pivoted in an opening direction 15. The all-glass door 3 is analogously closed, in the opposite way. Upon the actuation of closing cylinder 16, which is illustrated in figure 2, the dead bolt 6 moves forward out of the lock casing 2. In such case, the all-glass door 3 is locked, so that the all-glass door 3 can not be opened upon actuation of the lever handles 7, 8.

References

1. Lock casing
2. Lock casing
3. All-glass door
- 5 4. Latch bolt
5. Vertical edge
6. Dead bolt
7. Lever handle
8. Lever handle
- 10 9. Fixed glass side panel
10. Lock strike box
11. Lock strike box
12. Recess
13. Projection
- 15 14. Rotation point
15. Opening direction
16. Closing cylinder
17. Vertical edge

**Claims**

1. Door lock for an all-glass door comprising a fixed glass side panel, whereby the door lock is attached through a boring contained in the all-glass door and basically includes a dead bolt, a latch bolt and a follower, which is penetrated by a lever spindle, which free ends engage in the lever necks, and a lock strike box is fixed via a boring contained in the glass side panel at the height of the door lock, characterised in that the door lock presents a first lock casing (1), which is arranged on one side of the all-glass door (3), and a second lock casing (2) which is placed opposite to the first lock casing (1) on the other side of the all-glass door (3), whereby the latch bolt is included in lock casing (1) and the strike plate for a dead bolt (6) is included in lock casing (2), and comprises a first lock strike box (11) and a second lock strike box (10), which are effectively connected to each other by means of a closing cylinder (16) through a boring contained in the fixed side panel (9), whereby the dead bolt (6) ready for locking action is supported in the lock strike box (10) and the lock strike box (11) contains a catch for the latch bolt (4).
2. Door lock for an all-glass door according to claim 1, characterised in that the lock casing (1) protrudes the vertical edge (5) of the all-glass door (3) and the latch bolt (4) is arranged in the protruding part.

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3. Door lock for an all-glass door according to claim 1, characterised in that, with regard to the vertical edge (5) of the all-glass door (3), the lock casing (2) contains a recess in the area of the strike plate for the dead bolt (6).
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4. Door lock for an all-glass door according to claim 1, characterised in that dead bolt (6) in the lock strike box (10) moves forward out of a projection (13) protruding with regard to a vertical edge of the fixed glass side panel (9).
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5. Door lock for an all-glass door according to claim 1 or 4, characterised in that lock strike box (10) presents a recess (12) with regard to a vertical edge (17) of the fixed glass side panel (9).
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6. Door lock for an all-glass door according to claim 1, characterised in that the lock casing (1) and the lock strike box (10) present the same geometrical dimensions.
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7. Door lock for an all-glass door according to claim 1, characterised in that the lock casing (2) and the lock strike box (11) present the same geometrical dimensions.