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The present invention relates to a door lock. More particularly, the present invention relates to a door lock which can protect an auxiliary body from detaching while the door lock is locked.

Referring to FIG. 1, a conventional door lock has a main body 8, an auxiliary body 81 coupling with the main body 8, a shackle bar 80 passing through the main body 8 and the auxiliary body 81, a cylinder 82 disposed in the main body 8, and two bolts 83 fastening the auxiliary body 81 and the main body 8 together. Since the heads of the bolts 83 are disposed on the auxiliary body 81 outward, the bolts 83 can be detached easily. After the bolts 83 are detached, the auxiliary body 81 can be detached also.

An object of the present invention is to provide a door lock which can protect an auxiliary body from
20 detaching while the door lock is locked.

FIG. 1 is a perspective assembly view of a conventional door lock of the prior art;

FIG. 2 is a perspective assembly view of a door lock
25 of a preferred embodiment in accordance with the present

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invention;

FIG. 3 is a partially perspective exploded view of a door lock of a preferred embodiment in accordance with the present invention;

05 FIG. 4 is a perspective exploded view of a lock mechanism of a preferred embodiment in accordance with the present invention;

FIG. 5 is a perspective exploded view of a dustproof device and an upper cylinder of a preferred embodiment
10 in accordance with the present invention;

FIG. 6 is a partially sectional view of a door lock of a preferred embodiment before operating;

FIG. 6A is another partially sectional view of a door lock of a preferred embodiment before operating;

15 FIG. 7 is a partially sectional view of a door lock of a preferred embodiment after operating;

FIG. 7A is another partially sectional view of a door lock of a preferred embodiment after operating;

FIG. 8 is a schematic view illustrating an application
20 of a door lock while the door lock is locked; and

FIG. 9 is a schematic view illustrating an application of a door lock while the door lock is unlocked.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 2 to 7A, a door lock comprises
25 a main body 1, an auxiliary body 2 coupling with the



main body 1, a shackle bar 10 passing through the main body 1 and the auxiliary body 2, and a lock mechanism 3 disposed in the main body 1. A lateral cover 51 covers a lateral of the main body 1. An outer casing 5 encloses
05 the main body 1. A side cover 61 covers a side of the auxiliary body 2. An outer housing 6 encloses the auxiliary body 2. A rod 20 is disposed between the main body 1 and the auxiliary body 2.

The shackle bar 10 has a distal end 101, an annular
10 recess 102, and a round aperture 103.

The rod 20 has a pin hole 201 and a groove 202.

The main body 1 has a recess hole 11 receiving the shackle bar 10, a blind hole 12 receiving the rod 20, a periphery recess 13, a threaded hole 14 receiving an
15 extended stud 17, a pin hole 16 receiving a pin 18, a through aperture 15, and a through hole 19.

The lateral cover 51 has two lateral frames 511. The side cover 61 has a circular hole 612 and two side frames 611.

20 The outer casing 5 has a round hole 501. The outer housing 6 has a circular aperture 601.

The auxiliary body 2 has an upper hole 21, a lower hole 22, a periphery groove 26, and an extended aperture 25 receiving a first stud 24 and a second stud 23 in
25 series.



The lock mechanism 3 comprises an upper cylinder 30 and a lower cylinder 30' disposed in the main body 1 in series, a coiled spring 312 and a drive key 31 disposed in the through hole 19, a compression spring 322 and a driven key 32 disposed in the through aperture 15, a helical spring 331 and a push key 33 disposed in the recess hole 11, a block 34 blocking the push key 33, the upper cylinder 30 having a hollow interior 41 and a semi-circular protrusion 301 having an insertion channel 302, the lower cylinder 30' having a semicircular lobe 301', a reinforced casing 303 enclosing the semicircular protrusion 301, and a dustproof device 4 having a flexible plate 42 and two elastic elements 43 inserted in the hollow interior 41 of the upper cylinder 30, and an outer cover 40 covering the upper cylinder 30. The outer cover 40 has an insertion slot 401. The flexible plate 42 has a notch 421. The drive key 31 has a block end 311. The driven key 32 has a slant groove 321.

The outer cover 40 can protect the upper cylinder 30 against dusts.

The outer casing 5 can protect the main body 1 against bumping.

The outer housing 6 can protect the auxiliary body 2 against bumping.

The first stud 24 and the second stud 23 cannot be



detached from outside.

Referring to FIG. 8, two door plates 71 and 72 are disposed on two door posts 7. Each of the door plates 71 and 72 is connected to a plurality of door
05 rails 70. The door lock hooks two door rails 70. The shackle bar 10 is inserted in the recess hole 11 of the main body 1. Therefore, the door lock of the present invention is locked.

Referring to FIG. 9, the shackle bar 10 disengages
10 from the recess hole 11 of the main body 1. The door lock can be removed from the door rails 70. Therefore, the door plates 71 and 72 can be opened.

The invention is not limited to the above embodiment but various modification thereof may be made. Further,
15 various changes in form and detail may be made without departing from the scope of the invention.





I CLAIM:

1. A door lock comprises:
 - a main body,
 - an auxiliary body coupling with the main body,
 - a shackle bar passing through the main body and the
 - 05 auxiliary body,
 - a lock mechanism disposed in the main body,
 - a lateral cover covering a lateral of the main body,
 - an outer casing enclosing the main body,
 - a side cover covering a side of the auxiliary body,
 - 10 an outer housing enclosing the auxiliary body,
 - a rod disposed between the main body and the auxiliary
 - body, and
 - the lock mechanism comprising an upper cylinder and
 - a lower cylinder disposed in the main body in series.
- 15 2. A door lock as claimed in claim 1, wherein the shackle bar has a distal end, an annular recess, and a round aperture.
3. A door lock as claimed in claim 1, wherein the rod has a pin hole and a groove.
- 20 4. A door lock as claimed in claim 1, wherein the main body has a recess hole receiving the shackle bar, a blind hole receiving the rod, a periphery recess, a threaded hole receiving an extended stud, a pin hole receiving a pin, a through aperture, and a through hole.
- 25 5. A door lock as claimed in claim 1, wherein the





auxiliary body has an upper hole, a lower hole, a periphery groove, and an extended aperture receiving a first stud and a second stud in series.

05 6. A door lock as claimed in claim 1, wherein the lock mechanism comprises an upper cylinder and a lower cylinder disposed in the main body in series, a coiled spring and a drive key disposed in the through hole, a compression spring and a driven key disposed in the through aperture, a helical spring and a push key disposed
10 in the recess hole, a block blocking the push key, the upper cylinder having a hollow interior and a semicircular protrusion having an insertion channel, the lower cylinder having a semicircular lobe, a reinforced casing enclosing the semicircular protrusion, and a dustproof device having
15 a flexible plate and two elastic elements inserted in the hollow interior of the upper cylinder, and an outer cover covering the upper cylinder.

