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CARD LOCK STRUCTURE

BACKGROUND OF THE INVENTION

The present invention is related to a card lock structure which has multistage permutations and combinations of locking passwords.

A conventional locking device includes a locking mechanism disposed in a lock body. The lock body is formed with a key hole for a key to insert therein to lock or unlock the locking mechanism. Such locking device lacks variation and can be easily unlocked by an external article similar to the key, such as an iron wire or a flathead screwdriver. Therefore, the security can be hardly ensured by means of such locking device. Therefore, it is tried by the applicant to develop a multi-password card lock which can be hardly unlocked by other tool.

SUMMARY OF THE INVENTION

It is therefore a primary object of the present invention to provide a card lock structure including a lock body, a locking unit and a locking member. The lock body is a case having an interior space in which the locking unit and locking member are accommodated. One end of the lock body is formed with an insertion slot for a password card to insert therein. The top section of the lock body is formed with an opening. The locking unit is composed of a driving block and several resilient or fixed keys. The driving block is formed with several longitudinal and transverse cavities in which the keys are received. One end of the driving block is formed with a slope. The locking member has a locking end which can extend out



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from the opening of the lock body. Two sides of the locking member are formed with support arms formed with guide slopes facing and corresponding to the slope of the driving block. A resilient member is disposed between the support arm and the bottom of the interior space. The transverse keys can be positioned at different heights to achieve multistage permutations and combinations of locking passwords.

The present invention can be best understood through the following description and accompanying drawings wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective exploded view of the card lock structure of the present invention;

Fig. 2 is a perspective partially exploded view of the card lock structure of the present invention;

Fig. 3 is a perspective assembled view of the card lock structure of the present invention;

Fig. 4 is a sectional view of the present invention, showing a locking state thereof; and

Fig. 5 is a sectional view of the present invention, showing an unlocking state thereof.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to Figs. 1 and 2. The present invention includes a lock body 1, a locking unit 2, a locking member 3 and a card 4. The lock body 1 is a case composed of an upper covers 11 and a lower cover 12. One end of the lock body 1 is formed with an insertion

slot 13 for the password card 4 to insert therein. The lock body 1 has an interior space 10 for accommodating therein the locking unit 2 and the locking member 3. A certain section of the upper cover 11 is formed with an opening 14. The lower cover 12 is formed with recesses 15 on two sides of the interior space 10.

The locking unit 2 is composed of a driving block 21 and several longitudinal or transverse fixed or resilient keys 22, 23. The driving block 21 is formed with several cavities 24, 25 having longitudinal and transverse guide channels 241, 251. The keys 22, 23 are received in the cavities 24, 25. The inner side of at least one end of the driving block 21 is formed with an upward and outward extending projecting block 26 having a slope 261. The top sections of the keys 22, 23 are formed with pushable face 232 and unpushable face 222. The lateral sides of the keys 22, 23 are formed with lugs 221, 231. When the keys 22, 23 are received in the cavities 24, 25, the lugs 221, 231 are slidably inserted in the guide channels 241, 251. A resilient member 27 is disposed under the bottom of at least one of the keys 22, 23 to support the same, whereby the keys 22, 23 can resiliently move within the cavities 24, 25. The lug 231 of the transverse key 23 disposed in the cavity 25 with transverse guide channel 251 extends out of the guide channel 251. When pressed downward, the lug 231 is resiliently moved downward and inserted into the recess 15 of the lower cover 12 and restricted. Accordingly, the driving block 21 cannot be transversely displaced into the lock body 1. Reversely, in the case that the lug 231 is not moved downward into the recess 15, the driving block 21 can be transversely into the lock body 1.

The locking member 3 is mounted in the interior space 10 of

the lock body 1 adjacent to the locking unit 2. The top end of the locking member 3 is formed with a locking end 31 which can upward extend out from the opening 14 of the upper cover 11. Two sides of the locking member 3 are formed with outward extending support arms 32 near bottom end of the locking member 3. The support arm 32 is formed with a guide slope 33 facing and corresponding to the slope 261 of the driving block 21. A resilient member 34 is disposed between the support arm 32 and the bottom of the interior space 10 for resiliently supporting the support arm 32.

The password card 4 is formed with several password holes 41. When unlocked, the card 4 is inserted into the insertion slot 13 of the lock body 1 to aim the holes 41 at the keys 22, 23 to control the displacement of the keys 22, 23. With the holes correctly aimed at the keys 22, 23, the card 4 can pass through the keys 22, 23, whereby the driving block 21 is horizontally pushed by the card 4 and displaced into the lock body 1, whereby the guide slope 33 of the support arm 32 of the locking member 3 is guided and pushed by the slope 261 and moved downward. Accordingly, the locking end 31 is synchronously retracted into the lock body 1 to unlock. Reverse, when the card 4 is extracted from the insertion slot 13, the locking member 3 is released from the press of the driving block 21 and is upward pushed by the resilient member 34 and restored to the locking state. Also, the keys 22, 23 are resiliently upward pushed by the resilient members 27 and restored to their home positions.

According to the above arrangement, different patterns of keys 22, 23 (retractable or unretractable) can be adjustably accommodated in the cavities 24, 25 of the driving block. Also, the lug 231 of the transverse key 23 can be disposed in the recess 15

at different heights. Accordingly, by means of multistage permutations and combinations, various locking passwords can be achieved so as to obtain an optimal locking effect.

The above embodiment is only used to illustrate the present invention, not intended to limit the scope thereof. Many modifications of the above embodiment can be made without departing from the spirit of the present invention.

WHAT IS CLAIMED IS:

1. Card lock structure comprising a lock body, a locking unit, a locking member and a card, wherein:

the lock body is a case having an interior space and an insertion slot for the password card to insert therein, a top section of the lock body being formed with an opening;

the locking unit is disposed in the interior space of the lock body, the locking unit being composed of a driving block and several resilient or fixed keys, the driving block being formed with several longitudinal and transverse cavities in which the keys are received, one end of the driving block being formed with a slope, whereby when a password card corresponding to a set value of the keys is inserted into the insertion slot, the card can pass through the set positions of the keys to further push the driving block to inward horizontally displace; and

the locking member is mounted in the interior space of the lock body, the locking member having a locking end which can extend out from the opening of the lock body, two sides of the locking member being formed with support arms, the support arms being formed with guide slopes facing and corresponding to the slope of the driving block, whereby when the driving block is forcedly inward horizontally pushed, the guide slopes of the support arms are guided and pushed by the slope of the driving block and the locking member is moved downward, the locking end of the locking member being synchronously retracted into the lock body to unlock.

2. Card lock structure as claimed in claim 1, wherein the locking unit is composed of a driving block and several longitudinal and transverse keys, the driving block being formed with several longitudinal and transverse cavities, the inner side of at least one end of the driving block being formed with an upward and outward extending projecting block, the bottom of the projecting block having a slope, the lateral sides of the keys being formed with lugs, a resilient member being disposed under the bottom of the key and fitted in the cavity together with the key.
3. Card lock structure as claimed in claim 2, wherein a lower cover of the lock body is formed with recesses on two sides of the interior space, whereby when the keys are pressed downward, the lugs of the keys are resiliently moved downward and inserted into the recesses of the lower cover so as to restrict the locking unit from displacing relative to the lower cover.
4. Card lock structure as claimed in claim 1, wherein the top sections of the keys are formed with pushable faces or unpushable faces.
5. Card lock structure as claimed in claim 2, wherein the top sections of the keys are formed with pushable faces or unpushable faces.
6. Card lock structure as claimed in claim 3, wherein the top sections of the keys are formed with pushable faces or unpushable faces.