

LATCH TYPE LOCK

FIELD OF THE INVENTION:

The present invention relates to locks, and in particular to a latch type lock. In the present invention, a stud penetrates through a main body and a second lock body of the lock and is then locked between a stop block and the second body so as to have a preferred lock effect.

BACKGROUND OF THE INVENTION

Generally, a latch type lock is mainly formed by a main lock body and a second lock body which are combined as an integrally body. A post extended from the second lock body is inserted into the main lock body. A stud and rivets are used to fix the two lock bodies. However, the combination of the two lock bodies is very weak and thus they are easily to become loose.

In one improvement structure, another post extended from the main body is inserted into a combining hole of the second lock body. Another stud penetrates through a screw hole in the second lock body so as to fix the another post. However, in this structure, the combination force connected the main lock body and the second lock body is very finite. Furthermore, only a small front part of the another stud is used to fix the another post. For a longer time, the two lock bodies will become loose so as to reduce the lifetime of the lock.

Moreover, the prior structure will cause gaps in the lock bodies so that it is easily unlocked by a skillful person.

SUMMARY OF THE INVENTION

Accordingly, to improve above mentioned defects in the prior art,

the present invention provides a latch type lock, in that directions, telescopically movements of the stud is far away from the wall. Furthermore, the lock center of the lock is far away from the wall so that a large operation space is provided to the users.

To achieve above object, the present invention provide a latch type lock comprises a stud (1); a main lock body (2) having a transversal penetrating channel for receiving the stud; a lock piece (23) being installed within a hollow space of the penetrating channel (22) and controlled by the locking sheets (24A, 24B); a spring (25) installed within the penetrating channel (22) and used to cause the stub (1) to eject out automatically in the unlocking operation; a stop block (4) installed at an upper distal end of the main lock body (2); the stop block (4) being formed with a through channel (42) which is communicated with the penetrating channel (22) of the main lock body (1) for receiving the stud (1).

Furthermore, a second lock body (3) having an L shape extending from the main lock body (2) so that the whole structure formed by the main lock body (1) and the second lock body (3) are formed as an approximate U shape with a transversal lower body and two extend legs.

BRIEF DESCRIPTION OF THE DRAWINGS:

Fig. 1 shows an embodiment of the present invention.

Fig. 2 is a schematic view showing an unlock state in the embodiment of the present invention.

Fig. 3 is a schematic view showing a lock state in the embodiment of the present invention.

Fig. 4 is a cross sectional view along line 4-4 of Fig. 2.

Fig. 5 is a cross sectional view along line 5-5 of Fig. 3.

Fig. 6 is a cross sectional view along line 6-6 of Fig. 4.

Fig. 7 is a schematic view showing the unlock operation that a key is used to move the stud.

Fig. 8 shows another embodiment of the present invention.

Fig. 9 shows a further embodiment of the present invention

Fig. 10 shows a yet embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

In order that those skilled in the art can further understand the present invention, a description will be provided in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

With reference to Figs. 1, and 8 to 10, embodiments about the structure of the present invention is illustrated. These embodiments have same elements and interior structure, while only outer appearances are slightly changed.

With reference to Figs. 1 to 3, the structure of the present invention includes the following elements.

A stud 1 is used to lock the whole structure of the lock according to the present invention.

A main lock body 2 has a transversal penetrating channel 22 for receiving the stud 1.

A second lock body 3 has an L shape extending from the main lock body 2 so that the whole structure formed by the main lock body and the second lock body 3 are formed as an approximate U shape with a

transversal lower body and two extend legs.

A lock piece 23 is installed within a hollow space of the penetrating channel 22 and is controlled by the locking sheets 24A and 24B. The moving direction of the lock piece 23 is vertical to the moving direction of the stud 1 in the penetrating channel 22; and the moving direction of the locking sheets 24A, 24B is vertical to that of the stud 1 within the penetrating channel 22 .

A spring 25 installed within the penetrating channel 22 is used to cause the stud 1 to eject out automatically in the unlocking operation and is installed between the lock piece 23 and a crack proof lateral cover 5. A front end of the spring 25 resists against a protrusion protruding from a periphery wall of the penetrating channel 22 and a rear end of the spring 25 resisting against an annular washer 251 which serves to compress the spring 25. A rear side of the annular washer 251 resists against the crack proof lateral cover 5. An outer diameter of the washer 251 is larger than an inner diameter of a penetrating hole 51 of the crack proof lateral cover 5. The stud 1 passes through the penetrating hole 51 and an inner diameter of the washer 251 is larger than an outer diameter of a middle section of the stud 1 and is smaller than a push portion 13 at a rear section of the stud 1 so that when the stud 1 is pushed inward to be at a lock state, the push portion 13 at a rear section of the stud 1 will push the washer 251 so as to compress the spring 25. In unlocking operation, the spring 25 extends to cause the stud 1 will eject out automatically for being drew out.

With reference to Fig. 1, the stud has a buckle head 11 at a foremost end thereof, an annular recess 12 at a middle section thereof and the push portion 13 at a rear end thereof. Outer diameters of the buckle head 11 and the push portion 13 are greater than that of the other portion of stud

1 so that by the differences of the diameters of the buckle head 11, push portion 13 and the other portion of the stud 1, when the stud 11 is drawn out in unlocking operation, the lock piece 23 buckles the buckle head 11 so that the stud 1 will not fall out. Furthermore, the annular recess 12 serves to buckle the lock piece 23 in the penetrating channel 22.

With reference to Figs. 1 to 5, a stop block 4 is installed at an upper distal end of the main lock body 2. The stop block 4 is formed with a through channel 42 which is communicated with the penetrating channel 22 of the main lock body 1 for receiving the stud 1.

As illustrated in Figs. 1 to 5, the second lock body 3 is assembled at an upper distal of the other one of two legs of the main lock body 2 and is at a side opposite to the stop block 4. A space is formed between the stop block 4 and the second lock body 3. The second lock body 23 is formed with a groove 32 for receiving the stud 1.

By above mentioned structure of the present invention, the stud 1 inserts into the groove 32 of the penetrating channel 22 of the main lock body 2 so that the stud 1 is installed between the stop block 4 and the second lock body 1. Therefore, a lock effect is achieved by the stud 1 passing through the main lock body 2 to the second lock body 3. Thus the moving path of the stud is far away from the wall and the lock center is far away from the wall. Thus the key has a suffice space for operation. Figs. 8 to 10 show another embodiments of the present invention.

The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

WHAT IS CLAIMED IS:

1. A latch type lock, comprising:
 - a stud (1);
 - a main lock body (2) having a transversal penetrating channel for receiving the stud;
 - a lock piece (23) being installed within a hollow space of the penetrating channel (22) and controlled by locking sheets (24A, 24B);
 - a spring (25) installed within the penetrating channel (22) and used to cause the stud (1) to eject out automatically in the unlocking operation;
 - and
 - a stop block (4) installed at an upper distal end of the main lock body (2); the stop block (4) being formed with a through channel (42) which is communicated with the penetrating channel (22) of the main lock body (1) for receiving the stud (1);

wherein the stud has a buckle head (11) at a foremost end thereof, an annular recess (12) at a middle section thereof and a push portion (13) at a rear end thereof; outer diameter of the push portion is greater than that of the buckle head and the outer diameter of the buckle head is greater than the other portion of stud (1); the annular recess (12) serves to buckle the lock piece (23) in the penetrating channel (22).
2. The latch type lock as claimed in claim 1, wherein the moving direction of the lock piece is vertical to the moving direction of the stud (1) in the penetrating channel (22); and the moving direction of the locking sheets (24A, 24B) is vertical to that of the stud (1) within the penetrating channel (22) .

3. The latch type lock as claimed in claim 1, wherein the spring being installed between the lock piece (23) and a crack proof lateral cover (5); a front end of the spring (25) resists against a protrusion protruding from a periphery wall of the penetrating channel (22) and a rear end of the spring (25) resisting against an annular washer (251) which serves to compress the spring (25); a rear side of the annular washer (251) resists against the crack proof lateral cover (5); an outer diameter of the washer (251) is larger than an inner diameter of a penetrating hole (51) of the crack proof lateral cover (5).

4. The latch type lock as claimed in claim 1, wherein a second lock body (3) has an L shape extending from the main lock body (2) so that the whole structure formed by the main lock body (1) and the second lock body (3) are formed as an approximate U shape with a transversal lower body and two extend legs.