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WEATHER-PROOF SLIDE BOLT LOCKING MEANS

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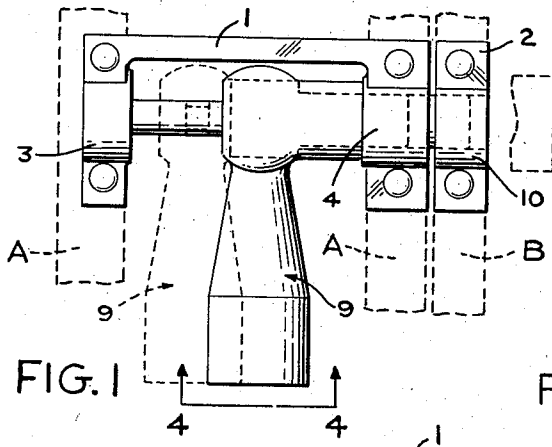


FIG. 1

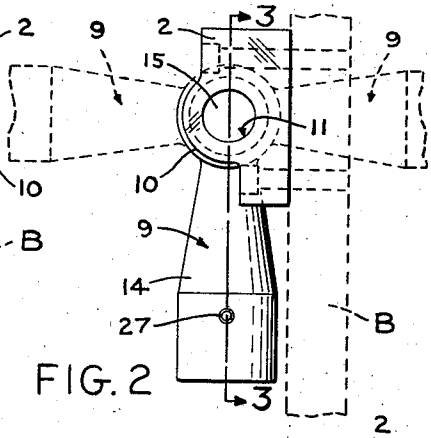


FIG. 2

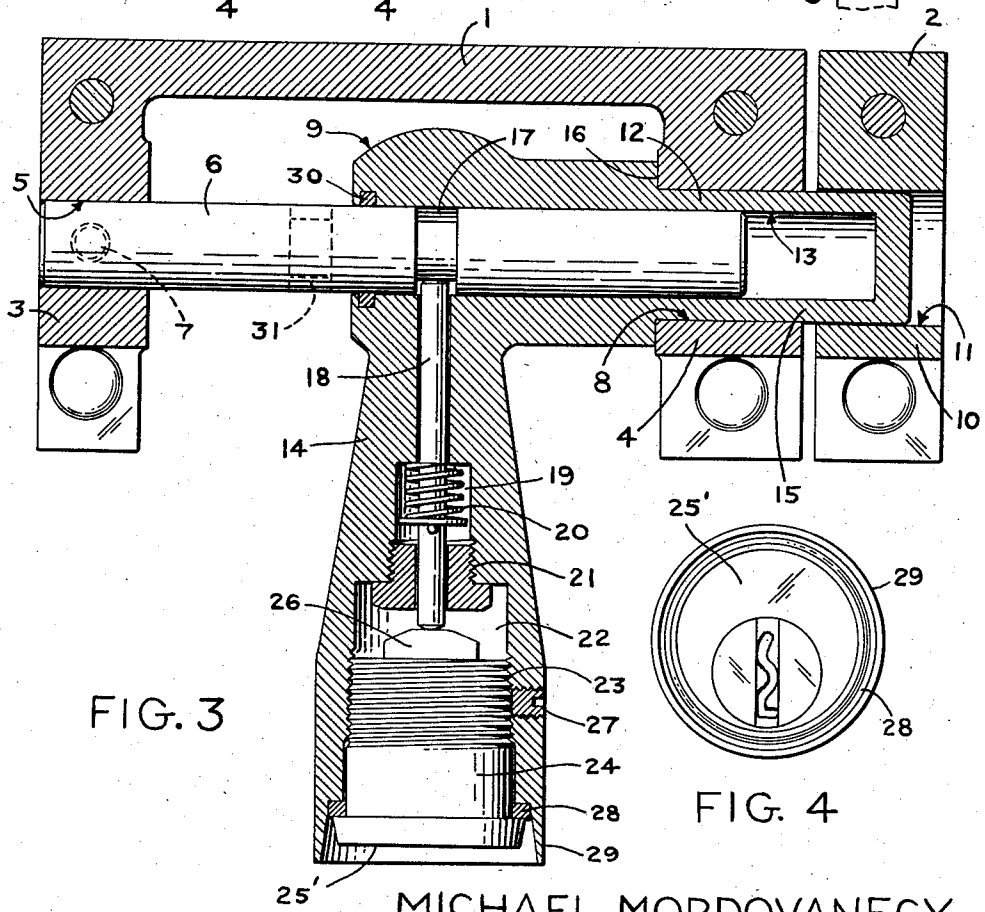


FIG. 3

FIG. 4

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WEATHER-PROOF SLIDE BOLT LOCKING MEANS

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6 Claims. (Cl. 70—125)

(Granted under Title 35, U.S. Code (1952), sec. 266)

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without payment of any royalties thereon or therefor.

This invention relates generally to slide bolt type locks and more particularly to a slide bolt type locking means which is suitable for use under adverse weather conditions to which it may be exposed.

Locks attached on fences or disposed in outdoor locations are prone to rust and clog with dust. In many instances as a result of this the moving parts will freeze up rendering the lock itself inoperative and requiring replacement at expense to the owner.

In order to weather-proof locks various methods have been tried such as morticing in the door to which the lock is attached or providing special housings or overhangs for the lock but these have proven unsatisfactory.

The present invention overcomes this problem by providing an integral handle lock and bolt element slidably mounted on a track or guide in turn affixed to a first member which is movable relative a second member having a keeper therein to receive said bolt element for locking the members wherein suitable gaskets are disposed between the bolt element, the guide and the locking tumblers thereon and a rain drip guide is provided whereby the sliding handle, lock and bolt elements are rendered weather-proof.

Accordingly, it is an object of the present invention to provide a weather-proof slide bolt type lock relatively simple in design having a minimum number of parts which lock is easy to install and operate and is adapted to take a standard type locking tumbler therein.

It is another object of the present invention to provide a weather-proof slide bolt type lock in which the handle is so disposed that it can swivel through an arc in excess of 180°.

Further objects and advantages of the invention will become evident from the following description with reference to the accompanying drawings in which:

Figure 1 is a front elevation showing the general appearance of the invention.

Figure 2 is an end view showing the invention with the handle shown in phantomized form in other positions.

Figure 3 is a vertical section taken on line 3—3 of Figure 2.

Figure 4 is a view taken at 4—4 in Figure 1 and shows the rain-drip protection means on the handle.

Referring to the drawings, Figures 1 and 2 show an attaching plate generally designated 1 and an independent keeper element 2 affixed to the members generally designated A and B by any suitable means as rivets or the like to fixedly connect the attaching means so that they cannot be easily removed from the members A and B.

The members A and B are movable relative each other and are held in locked position by the structure forming the present invention.

The attaching plate 1 is shown as a single U-shaped

type member having spaced bosses 3 and 4 formed integrally thereon.

As shown in Figure 3, boss 3 has a bore 5 to receive the stationary guide rod 6, a set screw 7 being provided to fixedly position the rod in the bore. Boss 4, however, contains a bore 8 of greater diameter than the bore 5 which bore 8 slidably receives an integral handle and barrel type element generally designated 9 slidably mounted on the stationary guide rod 6, as is clearly shown in Figure 3 of the drawings. It will be understood that while the attaching plate is shown as an integral U-shaped unit with boss elements 3 and 4 that the bosses can be constructed and attached independently of each other provided they are maintained in proper spatial relationship so that in assembled position they will hold the stationary guide rod and barrel-bolt type element in proper operative relation.

The keeper element 2 is also shown having a boss 10 and as shown in Figure 3 this boss includes a bore at 11 adapted to receive the engaging portion of the element 9 when it is in locked position as shown in Figure 3 and more fully described hereinafter.

Integral handle and barrel-type element

The integral handle and barrel-type element 9 comprises a substantially L-shaped member. One leg 12 has a bore 13 which extends substantially the full length of this leg to slidably mount element 9 on the stationary guide rod 6 whereby the other leg 14 forming an operating handle at right angles thereto will extend between the bosses 3 and 4 of the attaching plate 1. Since the attaching plate is open on one side, handle 14 is free to rotate through an arc extending more than 180° as is shown in Figure 2 of the drawings. If, however, the bosses 3 and 4 were merely held in spatial relation by their attached position to the member A, the handle could rotate a full 360°.

Figure 3 further shows that the barrel type element 9 has a portion of lesser diameter forming a bolt as at 15 which is in sliding fit arrangement with the bore 11 on the boss 10 of the keeper element 2. The reduced diameter of the bolt 15 forms a shoulder as at 16 so that when the bolt is in locked position the shoulder will abut the boss 4. The bolt will be constructed of sufficient length so that in abutted position it will extend into the bore 11 on the keeper 2 to provide the desired locking engagement between the members A and B all of which is clearly shown in Figure 3 of the drawings.

Locking means

In order to hold the barrel-type element 9 in locked position the stationary guide rod is provided with an annular groove 17 at the predetermined locking position which grove will be engaged by a locking stem 18. The locking stem extends through a bore 19 in the handle portion or leg 14 and is normally held in disengaged position by a spring member 20. It is prevented from escaping from the handle element 14 by means of the threaded element 21 which acts as a stop but allows the locking stem to extend therethrough into the cylinder lock chamber 22 formed in the handle at a point remote from the stationary guide rod 6.

As shown in Figure 3 the cylinder lock chamber 22 has a threaded portion 23 which threadably receives the cylinder lock 24 so that in assembled position the cylinder lock face 25' is disposed just inwardly of the end of the handle. The cylinder lock 24 is a conventional type and thus the cam member 26 is disposed to coact with the end of the locking stem extending into the cylinder lock chamber 22. When a key (not shown) actuates the cylinder lock the cam will move the locking stem into engagement with the annular groove 17 if the bolt 15 has been

moved into locking position, as is shown in Figure 3 of the drawings.

The cylinder lock is held in position by a set screw **27** and a suitable gasket **28** is provided to seal the inner mechanism of the cylinder lock from moisture and a suitable rain drip guard **29** is also formed at the end of the handle about the exposed face of the cylinder lock **24** as is shown on Figures 3 and 4 of the drawing.

Sealing means

In order to keep the simple relationship between the stationary guide bar **6** and the barrel type bolt mechanism free of dust and rust, a seal is provided as at **30** which is mounted on the barrel portion of the bolt mechanism and is free to move therewith to maintain the surface of the stationary guide bar clean and to prevent the entrance of moisture into the bore **12** of the leg **11** of the barrel bolt type mechanism and thus it provides a weatherproof lock which will not rust up during the ordinary use and operation of this type mechanism.

The seal **28** and the rain-drip protector **29** also act to prevent the entrance of moisture into the locking mechanism and through the various chambers and locking stem bores into this mechanism and thus they also act to maintain the weather-proof condition of this particular structure.

In phantomized form, as indicated in Figure 3, it is obvious that additional grooves can be cut in the stationary guide bar **6** so that the barrel-type element **9** could be held in the open position as well as the closed position if it is desired. In the open position the locking stem **18** would engage this groove **31**.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. In a weatherproof lock for members movable relative each other comprising, spaced attaching means connected to one of said movable members, keeper means connected to the other of said movable members in alignment with one of said attaching means, guide means connected to the attaching means remote from the attaching means aligned with the keeper, bolt means having a closed bore formed therein to slidably mount said bolt means on the guide means and in sliding engagement with the attaching means aligned with the keeper, limit means formed on said bolt means, to permit said bolt means to be moved a predetermined distance outwardly of the aligned attaching means into engagement with said keeper, and sealing means disposed inwardly of the open end of the bore to provide a moisture tight seal between the bore and the guide means at all times.

2. In a weatherproof lock for members movable relative each other comprising, spaced attaching means connected to one of said movable members, keeper means connected to the other of said movable members in alignment with one of said attaching means, guide means connected to the attaching means remote from the attaching means aligned with the keeper, bolt means having a closed bore formed therein to slidably mount said bolt means on the guide means and in sliding engagement with the attaching means aligned with the keeper, limit means formed on said bolt means to permit said bolt means to be moved a predetermined distance outwardly of the aligned attaching means into engagement with said keeper, and sealing means disposed inwardly of the open end of the bore to provide a moisture tight seal between the bore and the guide means at all times, locking means mounted in fluid tight engagement in said bolt means,

and said guide means having means thereon to coact with said locking means to permit said bolt means to be placed into open and locked positions.

3. In a weatherproof lock for members movable relative each other comprising, spaced attaching means connected to one of said movable members, keeper means connected to the other of said movable members in alignment with one of said attaching means, guide means connected to the attaching means remote from the attaching means aligned with the keeper, bolt means having a closed bore formed therein to slidibly mount said bolt means on the guide means and in sliding engagement with the attaching means aligned with the keeper, limit means formed on said bolt means to permit said bolt means to be moved a predetermined distance outwardly of the aligned attaching means into engagement with said keeper, and sealing means disposed inwardly of the open end of the bore to provide a moisture tight seal between the bore and the guide means at all times, locking means mounted in fluid tight engagement in said bolt means including, a cylinder lock opening to the external surface of the bolt means, and a rain drip guard formed on said bolt means about the point where the cylinder lock opens on the external surface of said bolt means.

4. In a weatherproof lock for members movable relative each other comprising, spaced attaching means connected to one of said movable members, keeper means connected to the other of said movable members in alignment with one of said attaching means, guide means connected to the attaching means remote from the attaching means aligned with the keeper, bolt means having a closed bore formed therein to slidably mount said bolt means on the guide means and in sliding engagement with the attaching means aligned with the keeper, limit means formed on said bolt means to permit said bolt means to be moved a predetermined distance outwardly of the aligned attaching means into engagement with said keeper, and sealing means disposed inwardly of the open end of the bore to provide a moisture tight seal between the bore and the guide means at all times, said bolt means including a handle, said guide means having stop means formed therein, locking means enclosed in fluid tight connection in said handle to detachably engage said stop means and permit said bolt means to be placed into open and locked positions.

5. A weatherproof lock as claimed in claim 4 wherein said locking means includes, a cylinder lock opening to the external surface of the handle, and a locking stem slidably disposed in said handle for actuation by said cylinder lock into and out of engagement with said stop means on the guide means.

6. A weatherproof lock as claimed in claim 4 wherein a rain drip guard is formed in the handle about the point where the locking means opens on the external surface of said handle.

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