United States Patent [19]

Klein

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[54] **LOCK SECURING ASSEMBLY**

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[52] **U.S. Cl.** **70/416**; 70/447

[51] **Int. Cl.**[2] **E05B 13/00**

[58] **Field of Search** 70/416, 429, 431, 447, 70/419

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Attorney, Agent, or Firm—Lerner, David, Littenberg & Samuel

[57] **ABSTRACT**

A lock securing assembly is provided, which is especially adapted for immobilizing a store door lock so that the door and lock cannot be opened from the outside even with use of the proper key therefor, but may be easily opened from the inside thereof, which lock securing assembly includes bar anchor means, such as a bracket adapted to be connected to a door, said bracket having an inclined internal passageway, and a slotted bar the slotted end of which is adapted to engage a knob disposed in or on a lock, and the other end of which is adapted to be retained in the inclined passageway of the bar anchor means. The inclined passageway in the bar anchor means allows for pivotal-like movement of the end of the slotted bar disposed in such passageway to facilitate removal of the slotted bar from the knob of the lock without having to remove the bar anchor means from the door or the knob from the lock.

10 Claims, 8 Drawing Figures

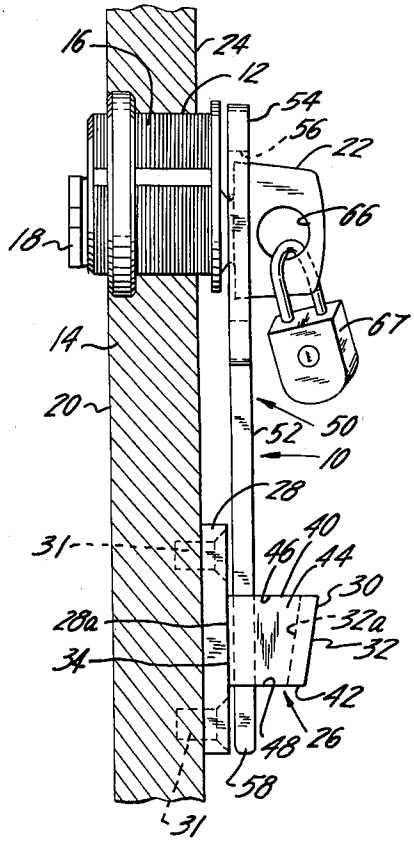


FIG. 1

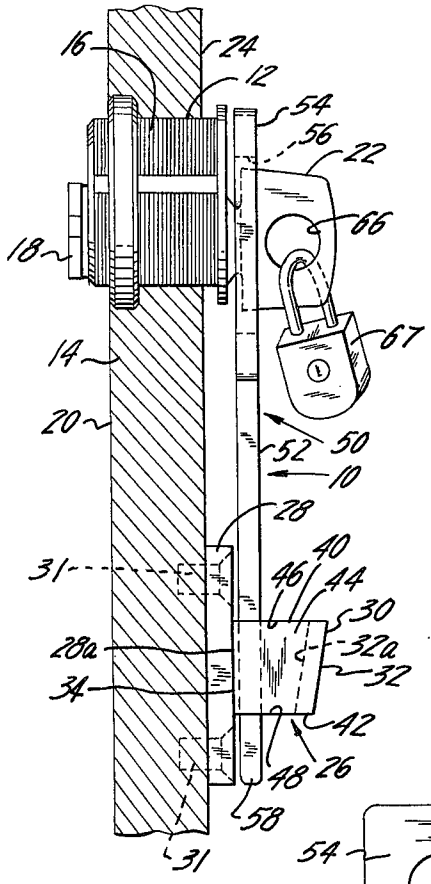


FIG. 2

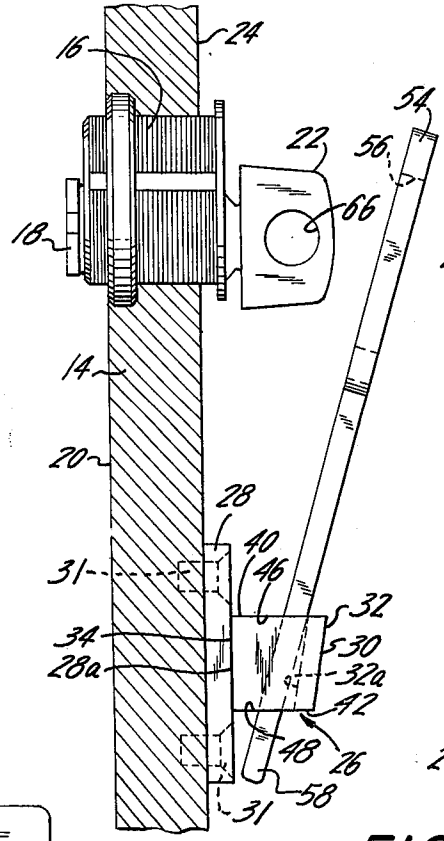


FIG. 5A

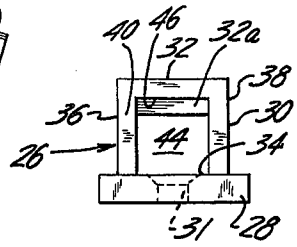


FIG. 5

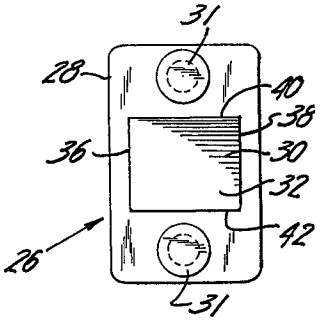


FIG. 3

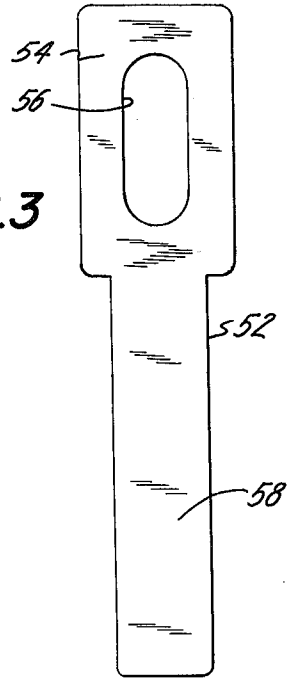


FIG. 3A

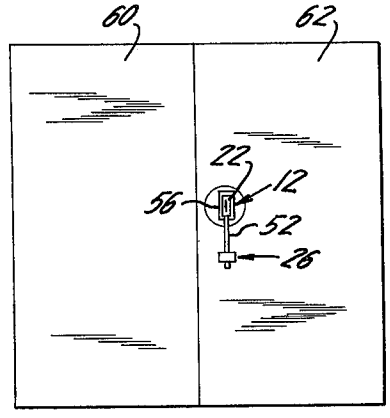


FIG. 4

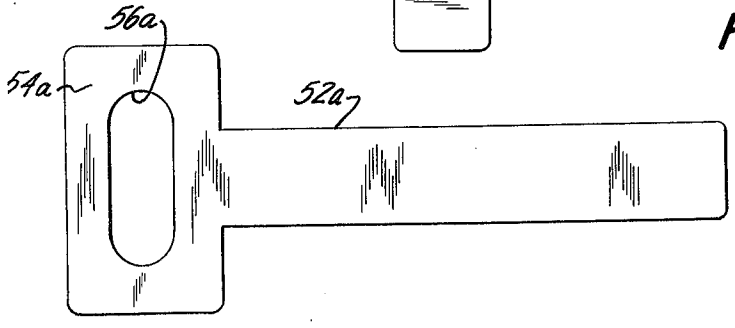
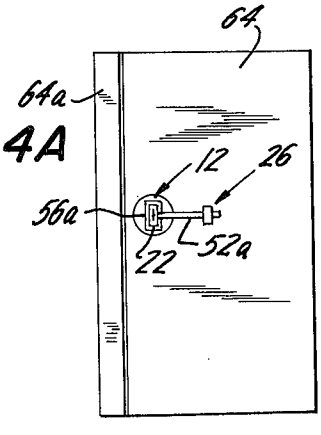


FIG. 4A



LOCK SECURING ASSEMBLY

FIELD OF THE INVENTION

The present invention relates to a lock securing assembly which is adapted to immobilize a conventional single or double cylinder lock disposed on a door or other structure, so that the lock cannot be opened from the outside, but may be easily opened from the inside.

BACKGROUND OF THE INVENTION

It is common practice in the high volume retail business that personnel such as employed in department stores or supermarkets, work throughout the night restocking shelves and cleaning to prepare the store for the next business day. During this period, the doors of the store are locked and the store is closed to the general public. Until recently, not only have the doors been key locked from the outside to prevent outsiders from breaking in, but they have also been key locked from the inside to prevent insiders or personnel working in the store from leaving without proper authorization. The locks employed for such purpose usually include two interlocking cylinders each having a keyhole disposed on opposite sides of the door, both cylinders being adapted to be rotated and opened by or closed by the same key fitting the key opening on either side of the door. Thus, an employee working in the store could not leave the store through such a door unless he had the key to the lock made available to him by his supervisor or other personnel. This has proven to be a useful and efficient system for preventing employees from pilfering goods in the store during the night or leaving before the end of normal working hours.

It has been found that if access to the key to open the door lock from the inside was not possible, for example, the key was lost or the supervisory personnel having the key were not immediately available, it was virtually impossible for workers to leave the store. Thus, under such circumstances, in the event of a fire or other emergency, the workers were trapped in the store.

Because of the possible hazardous condition created by such two way or one way key locks, use of such locks has been prohibited in most retail or other establishments. Thus, most locks now in use comprise two interlocking cylinders which may be key operated from the outside and inside, and which may include a permanently installed operating knob or key to allow operation of the lock from the inside without a key.

Additionally, it is the practice in many stores to lock some exit doors, which include two way key locks, prior to store closing. In this case, it is not possible to determine visibly whether the door is locked or open. Such practice is therefore in violation of BOCA Basic Building Code 614.41.

BRIEF STATEMENT OF THE INVENTION

In accordance with the present invention, there is provided a lock securing assembly which is designed to immobilize a key lock such as the double cylinder lock described above which may include a permanently installed knob connected to one cylinder and a key opening in the other cylinder, so that it is virtually impossible to open such lock with a key from the outside. Furthermore, where such locking assembly is employed in conjunction with a door lock, it is easily visibly determinable from the inside whether the door is opened or locked.

The lock securing assembly of the invention includes bar anchor means adapted to be secured to a door or similar type structure in which the cylinder portion of a lock is disposed, and slotted bar means adapted to engage protrusions on the lock, such as a knob or other manual operable mechanism, and retained in such position by the bar anchor means. The bar anchor means includes a base member adapted to be secured to the door, and a guide member connected to the base member and including an inclined passageway having a relatively wide end connected to a relatively narrow end, the relatively wide end being positioned so as to be in closer proximity to the lock than the relatively narrow end. The slotted bar means comprises an elongated bar having first and second end portions, the first end portion including a slot which is adapted to be engaged over a protrusion, such as a knob, extending from the lock, and the second end portion of which is adapted to be positioned and retained in the passageway of the bar anchor means. Thus, when the bar means is positioned over the knob of the lock so that the slot therein engages the same, and in the passageway of the bar anchor means, the bar means prevents rotation of the cylinder and knob or other operating mechanism of the lock. Furthermore, a padlock or other locking mechanism can be applied through an opening in the knob or other protrusion extending from the lock to close or secure the lock.

The bar means is adapted to be removed from the knob and the bar anchor means by first removing the above-mentioned padlock or other locking mechanism and thereafter lifting the slotted end of the bar means outwardly away from the lock so that the slot therein is disengaged from the protrusion, such as the knob, of the lock while pivoting the second end of the bar means in the passageway of the bar anchor means.

The term "knob" as employed herein will include a knob or any other manual operable mechanism extending from the lock and which may be fitted with an opening.

In a preferred embodiment of the lock securing assembly of the invention, the bar means will comprise an elongated bar or member and the slot in the first end of such elongated member is substantially transversely disposed across a portion of the first end of the elongated member. The lock securing assembly including the bar means having the substantially transversely disposed slot may be employed for securing locks employed in conjunction with a single door or double doors. However, it will be appreciated that the slot in the bar means may be disposed at any convenient position for example, such as longitudinally with respect to the elongated portion of the bar means.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is a side elevational view of the lock securing assembly of the invention in place for immobilizing a lock;

FIG. 2 is a side elevational view of the lock securing assembly shown in FIG. 1 wherein the bar means thereof has been removed from the lock;

FIG. 3 is a plan view of one embodiment of the bar means employed in the lock securing assembly shown in FIG. 1;

FIG. 3A is a view of the lock securing assembly of the invention including the bar means shown in FIG. 3 installed in place on a double door;

FIG. 4 is a plan view of another embodiment of the bar means employed in the lock securing assembly shown in FIG. 1;

FIG. 4A is a view of the lock securing assembly of the invention including the bar means shown in FIG. 4 installed in place on a single door;

FIG. 5 is a plan view of the bar anchor means employed in the lock securing assembly shown in FIG. 1; and

FIG. 5A is an end view of the bar anchor means shown in FIGS. 5 and 1.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

Referring now to the Figures wherein like numerals represent like parts in the several views, there is shown in FIG. 1 the lock securing assembly identified generally by the numeral 10 in place in position to immobilize a lock 12 disposed in door 14. The lock 12 includes a cylinder portion 16 which includes a key opening 18 disposed for access on one side of the door 20, and a knob 22 connected to the cylinder 16 and disposed for access on the other side 24 of the door 14.

The lock securing assembly 10 includes bar anchor means generally indicated by the numeral 26 which includes a base member 28 and a guide member 30 connected to the base member as shown. The base member 28 may comprise a metal plate which is secured to the side 24 of the door 14 by means of screws 31 which preferably take the form of conventional tamper-proof screws. The guide member 30 will include top wall 32, bottom wall 34, side walls 36 and 38 (best shown in FIGS. 5 and 5A) and end faces 40 and 42. As shown, the guide member 30 includes an inclined passageway 44 therein having a relatively wide end 46 and a relatively narrow end 48. The relatively wide end 46 will be disposed contiguous to end face 40 which is disposed closer to the lock 12 than is the relatively narrow end 48, as shown in FIG. 1 and FIG. 2.

In a preferred embodiment of the invention, the passageway 44 in the guide member 30 of the bar anchor means 26 will be defined by a straight wall extending substantially parallel to the base member 28 and may, in fact, comprise the flat surface 28*a* of such base member, and an inclined wall 32*a* extending from the end face 40 downwardly towards the end face 42 of the guide member 30, as shown. The purpose of the inclined passageway 40 described above will be apparent from the description to follow.

The lock securing assembly 10 also includes bar means generally indicated by the numeral 50 and comprising an elongated bar 52 which includes a first end 54 having a slot 56 therein which slot is adapted to be engaged over the knob 22 of the lock 12 as shown. The second end 58 of the elongated bar 52 is adapted to be positioned and retained in the passageway 44 of the bar anchor means 26.

As seen in FIG. 3, the first end 54 of the elongated bar 52 includes a longitudinal slot or vertical slot 56, while the elongated member shown in FIG. 4 which is identified by the numberal 52*a* includes at the first end thereof 54*a* a transverse or horizontal slot 56*a*. The elongated bar 52 shown in FIG. 3 is especially adapted for use in conjunction with a lock 12 which is adapted to close double doors 60, 62 as shown in FIG. 3A. The elongated bar 52*a* is designed for use in conjunction with a lock 12 disposed in a single door 64 as shown in FIG. 4A. However, it will be appreciated that depending upon the position of the lock with respect to a given door and the design and construction of such door, the elongated bars 52 and 52*a* may be employed either in conjunction with double doors or a single door.

As shown in FIG. 1, the elongated bar 52 when employed in conjunction with the bar anchor means 26 so that the slotted portion of the elongated bar 52 is disposed over a knob 22 of a lock 12 and the other end of the elongated bar 52 is retained in the passageway 44 of the bar anchor means 26, the elongated bar 52 will prevent rotation of the knob 22 and thus will prevent rotation of the cylinder 16 of the lock 12. Thus, even when a key is inserted in the key opening 18 and one attempts to rotate the key in the key opening 18 so as to open the lock 12, the lock securing assembly 10 of the invention, will prevent such rotation.

When it is desired to free the lock 12 so that it may be opened from either the outside (by use of a key in the key opening 18 or by rotation of the knob 22 from the inside), as shown in FIG. 2, the elongated bar 52 may be simply lifted from the knob 22 so that the first end 54 and slot 56 therein are lifted out from engagement with the knob 22 while the second end 58 of the elongated bar 52 is pivoted in the passageway 44 of the bar anchor means 26. The inclined configuration of the passageway 44 of the bar anchor means 26 is sufficiently large relative to the thickness of the elongated bar 52 so that the end 58 thereof may be pivoted in such a manner so as to allow the other end 54 to clear the knob 22 of the lock 12. The elongated bar 52 may then be lifted out from the passageway 44 of the bar anchor means 26 or may simply be stored in the bar anchor means 26 out of the way of the knob 22. Furthermore, it will be appreciated that in view of the configuration of the passageway 44 in the bar anchor means 26, the bar 52 may simply be removed from the knob 22 of the lock 12 without having to move such knob 22 or remove the bar anchor means 26 from the door 14.

When it is desired to secure the lock 12 so as to prevent opening of such lock, from either side of the door 14, the second end 58 of the elongated bar 52 may be inserted in the passageway 44 of the bar anchor means 26 so that such end 58 assumes a position substantially as shown in FIG. 2. The end 54 may then be lowered towards the door 14 so that the knob 22 of the lock 12 engages the slot 56 in the elongated bar 52. The lock securing position of the elongated bar 52 is shown in FIG. 1.

It will be appreciated that the elongated bar 52*a* shown in FIG. 4 may be substituted for the elongated bar 52 and such elongated bar 52*a* may be employed in a similar manner as the elongated bar 52.

The lock 12 employed in conjunction with the present invention may comprise a single cylinder lock or a double cylinder lock which includes two interconnecting cylinders wherein each of the cylinders may be operated by a key inserted in the key opening 18 or by rotation of the knob 22 disposed on the inside portion 24 of the door 14. Furthermore, the knob 22 may include an opening 66 as shown in FIGS. 1 and 2 through which a second lock 67 or bolt may be disposed so that such additional lock or bolt in conjunction with the lock securing assembly 10 of the invention may fixedly lock the lock 12 from the inside. In this manner, the

lock **12** may be locked from the inside and the outside.

The bar anchor means **26** and the bar means **10** will preferably be formed of a strong rigid material, such as a metal or tough rigid plastic.

It will also be appreciated that while it is shown in FIGS. **3A** and **4A** that the bar anchor means **26** is disposed below the lock or to the side of the lock, respectively, such bar anchor means **26** may be disposed at any position relative to the lock **12,** and bar means **50** including a suitably disposed slot **56** may be employed to secure the lock **12** from the inside. In addition, it will be appreciated that the bar anchor means **26** may be disposed on the door **60** while the lock **12** is disposed in the door **62,** or the bar anchor means **26** may be disposed in a door frame **64***a* (shown in FIG. **4A**) so that the bar means **50** will be disposed across the space between the two doors **60** and **62** or between the frame **64***a* and door **64** to provide increased protection against opening of the respective doors.

Various modifications may be made in the lock securing assembly as described above without departing from the spirit and scope of the invention. Accordingly, the scope of the present invention is defined only by the following claims.

What is claimed is:

1. A lock securing assembly comprising, in combination, bar anchor means adapted to be secured to a door or in close proximity to a door in which the cylinder portion of a lock is disposed, said bar anchor means comprising a base member adapted to be secured to said door, and a guide member connected to said base member and including an inclined passageway having a relatively wide end connected to a relatively narrow end; said relatively wide end being positioned so as to be in closer proximity to said lock than said relatively narrow end; and

bar means comprising an elongated bar having first and second end portions, said first end portion including a slot which is adapted to be engaged over a knob extending from said lock, and the second end portion of which is adapted to be positioned and retained in said passageway of said bar anchor means, said slot of said bar means when positioned over said knob and in said passageway of said bar anchor means preventing rotation of said cylinder and knob of said lock, said bar means being adapted to be removed from said knob and said bar anchor means by lifting said first end out from engagement with said knob while pivoting said second end in said passageway.

2. The lock securing assembly in accordance with claim **1** wherein said bar means comprises an elongated member and said slot in said elongated member is substantially longitudinally disposed along at least a portion of the length of said elongated member.

3. The lock securing assembly in accordance with claim **1** wherein said bar means comprises an elongated member and said slot in said elongated member is substantially transversely disposed across at least a portion of said first end of said elongated member.

4. The lock securing assembly in accordance with claim **1** wherein said passageway in said guide member of said bar anchor means is defined by a straight wall in said guide member extending substantially parallel to said base member and an inclined wall extending at an angle to said straight wall.

5. The lock securing assembly in accordance with claim **4** wherein said straight wall of said passageway comprises a top wall of said base member and said inclined wall is disposed above said straight wall.

6. The lock securing assembly in accordance with claim **1** further including a lock adapted to be disposed in a door said lock including a knob adapted to be disposed in one side thereof and to be engaged by said bar means.

7. The lock securing assembly in accordance with claim **6** wherein said lock includes two interlocking cylinders, a first cylinder including a key opening and adapted to receive a first key, and a second cylinder including a second knob connected thereto.

8. The lock securing assembly in accordance with claim **1** wherein said bar anchor means is disposed on and secured to a door which includes the cylinder portion of a lock.

9. The lock securing assembly in accordance with claim **1** wherein said bar anchor means is disposed on a door or door frame, and the cylinder portion of the lock is disposed on a separate door.

10. The lock securing assembly in accordance with claim **1** wherein said base member is secured to a door by screws, and said bar means is positioned and retained in said passageway of said bar anchor means in a manner such that said bar means extends over said base member to substantially render said screws inaccessible.

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