United States Patent [19]

Fried

[11] **3,913,361**

[45] **Oct. 21, 1975**

[54] **DOORKNOB SECURITY DEVICE**

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[22] Filed: **June 3, 1974**

[21] Appl. No.: **475,947**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 406,241, Oct. 15, 1973, abandoned.

[52] **U.S. Cl.** **70/424;** 70/428

[51] **Int. Cl.²** **E05B 17/14**

[58] **Field of Search** 70/423, 424, 425, 426, 70/427, 428, 455

[56] **References Cited**

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3,457,745	7/1969	Barber	70/424
3,636,742	1/1972	Raney	70/424
3,738,137	6/1973	Jones	70/428

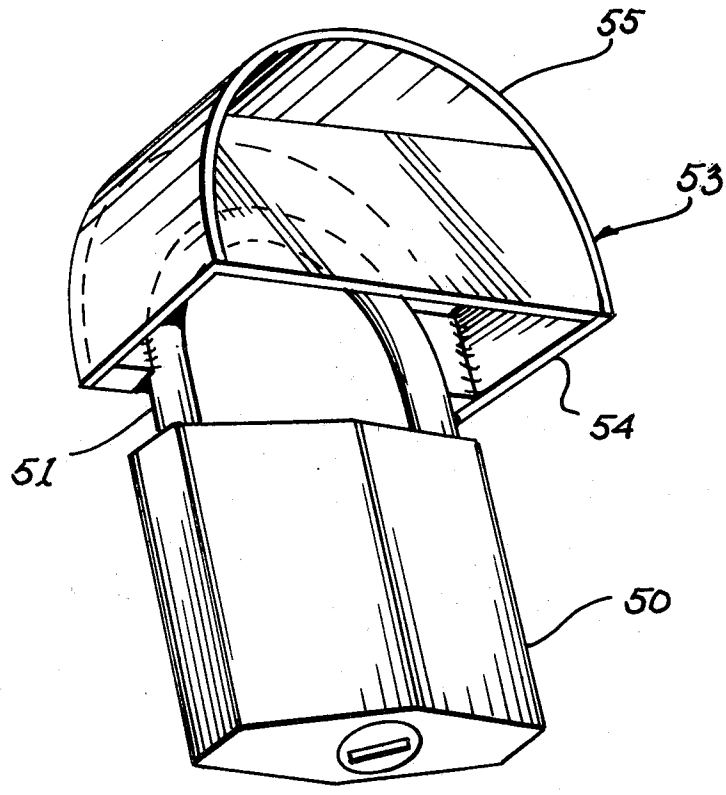
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[57] **ABSTRACT**

A device having a U-shaped member secured to the shackle of a padlock for lockably shielding the keyhole of a bulbous shaped doorknob is disclosed.

2 Claims, 6 Drawing Figures



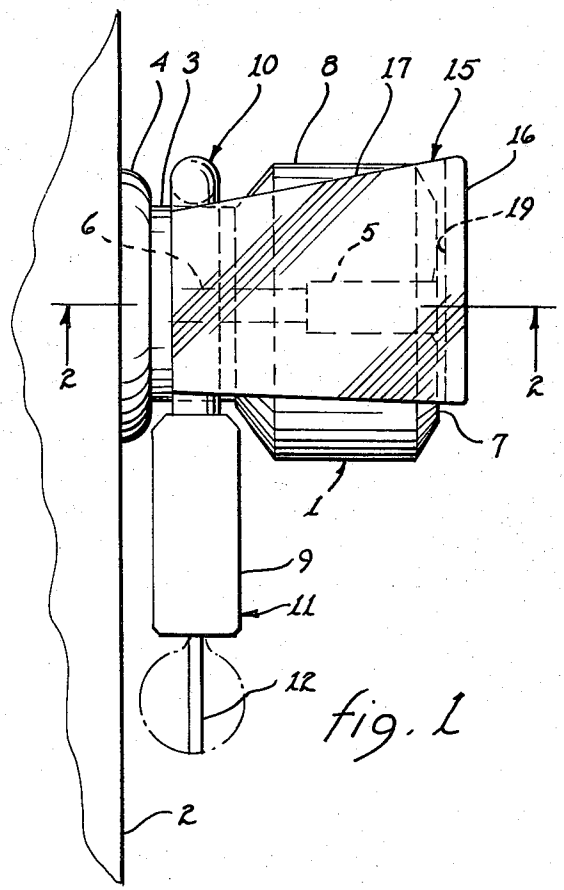


fig. 1

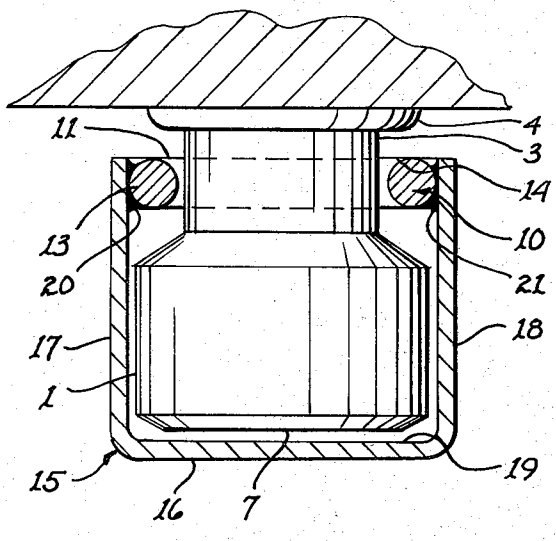


fig. 2

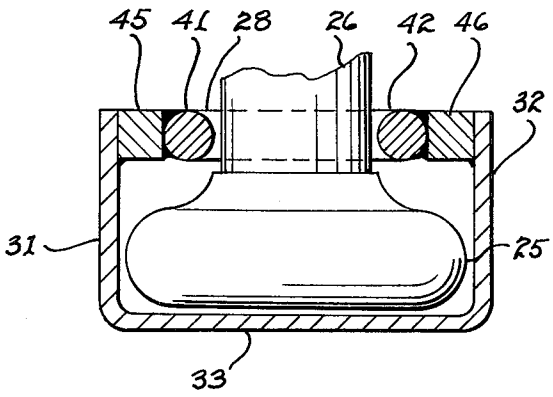


fig. 4

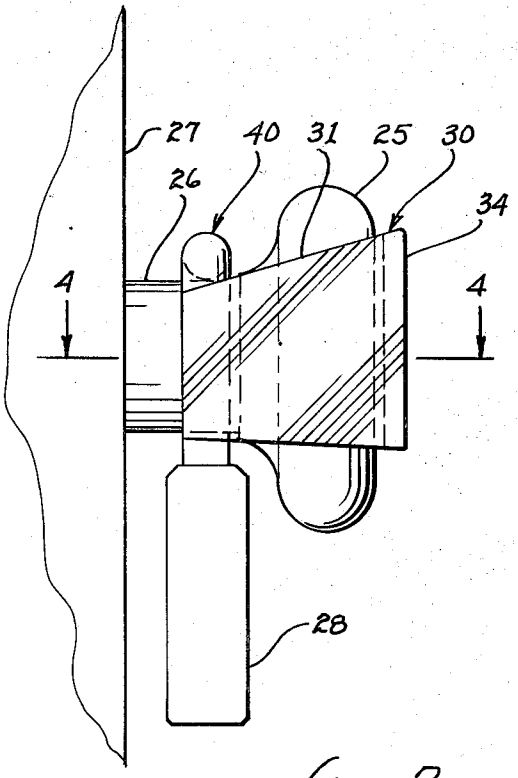


fig. 3

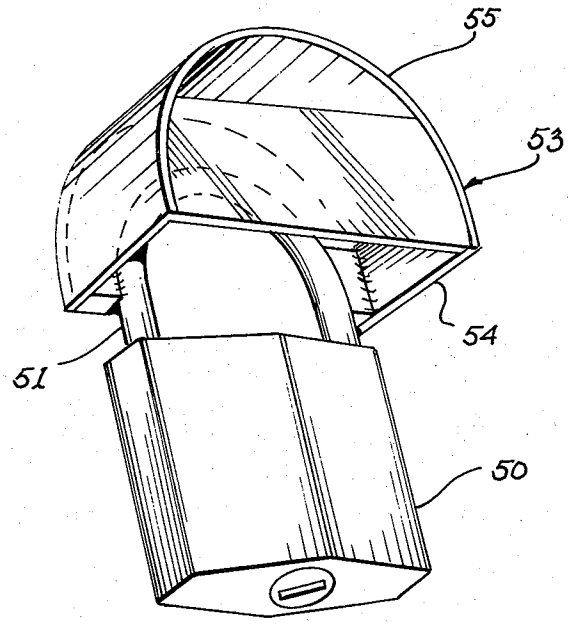


Fig. 5

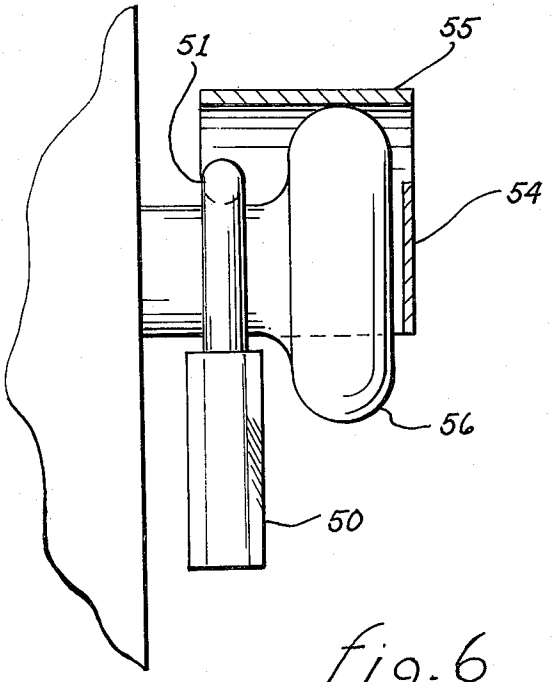


Fig. 6

DOORKNOB SECURITY DEVICE

The present application is a continuation-in-part of U.S. patent application Ser. No. **406,241,** filed Oct. **15, 1973** and now abandoned, entitled "Improved Doorknob Security Device."

The present invention relates to security systems, and, more particularly, to devices for shielding the keyhole of lockable doorknobs.

Most front doors of recently built houses, apartments, hotels and motels are locked by means of a key operated lock integral with the doorknob on the front door. The manufacturers of these lockable doorknobs generally have a limited number of lock combinations, such that it is possible for one key to fit many differently located doorknobs. In addition, it is often readily possible to obtain, by licit or illicit means, a master key to fit all doorknobs manufactured by a particular manufacturer.

Where there are a plurality of dwelling places within a single complex, such as an apartment building, hotel, or motel, the proprietors and/or watchmen generally have at least one and often several master keys. These master keys provide access to the dwelling places with or without the resident's permission. Therefore it is practically impossible for residents of apartment buildings, hotels, or motels to prevent ingress during their absence by one possessing a master key.

To prevent unauthorized entrance, particularly to quasi public dwelling place rental complexes, several devices have been developed to prevent access to the locking mechanism within a doorknob. In example, U.S. Pat. No. **3,167,945,** teaches a lockable keyhole obstructing device having a first arm engaging the shaft of the doorknob and positioned adjacent the lower periphery of the doorknob. A second arm engages the upper part of the doorknob and mates with a locking mechanism secured to the first arm. As this device requires two segregable parts, one of them may be easily lost, thereby destroying the utility of the device. In addition, the arms may be relatively easily deformed by applying pressure to the locking mechanism itself. U.S. Pat. No. **3,340,709** discloses a housing for enclosing a doorknob. A locking mechanism is secured to the skirt of the housing and includes a key operated inwardly extendable latch, which latch, in combination with a pair of inwardly depressed protrusions, engages the rear surface of the doorknob to prevent removal of the housing. U.S. Pat. No. **3,457,745,** describes a dish-shaped plate positionable adjacent the front of a doorknob and secured thereto by means of a plurality of segmented rearwardly extending legs. A U-shaped shackle engages the legs and straddles the doorknob shaft. A cylindrical lock receives the shackle and is drawn tight against the doorknob shaft to prevent removal of the assembly. Other U.S. Patents directed to lockable shields for doorknobs include Nos. **2,169,438, 2,458,002, 3,210,972** and **3,343,387.**

Throughout each of the above cited patents, there runs a common thread. Either the device described in these patents includes a multi part mechanism particularly adapted to single sized doorknobs with the parts being lockable to one another by means of a key operated lock; or, the shackle of a key operated lock engages the doorknob shaft but requires a segregable keyhole shield. For these reasons, the parts must be specially manufactured to be at least equal to the hardness

and strength of the shackle or latch or else these parts present a weak link and can be relatively easily deformed or repositioned to obtain access to the keyhole of the doorknob. If the parts are in fact hardened to the same degree as the shackle of most commercially available locks, the cost of the device is substantial.

It is therefore a primary object of the present invention to provide a security device for lockable doorknobs, which device has no moving parts apart from the lock itself.

Another object of the present invention is to provide a security device which is commensurate in strength and hardness with the shackle of an attached padlock.

Yet another object of the present invention is to provide a single security device usable with a plurality of differently configured lockable doorknobs.

A still further object of the present invention is to provide a security device of unitary construction for lockable doorknobs.

A further object of the present invention is to provide a security device circumferentially engaging the shaft of a lockable doorknob while shielding the keyhole in the doorknob.

A yet further object of the present invention is to provide a low cost security device for lockable doorknobs.

These and other objects of the present invention will become apparent to those skilled in the art as the description thereof proceeds.

The present invention may be described with more specificity and clarity with reference to the following figures, in which:

FIG. **1** illustrates a side view of the present invention attached to a lockable doorknob.

FIG. **2** is a cross-sectional view of the present invention taken along lines **2—2,** as shown in FIG. **1.**

FIG. **3** is a side view of a modification of the present invention.

FIG. **4** is a cross-sectional view of the present invention taken along lines **4—4,** as shown in FIG. **3.**

FIG. **5** is a perspective view of another modification of the present invention.

FIG. **6** is a partial cross-sectional view of the modifications of FIG. **5.**

In the following description of the present invention, particular reference will be made to both FIGS. **1** and **2.** Presently, many modern lockable doorknobs **1** are formed with a bulbous grip **8** having a shaft **3** extending interior to a door **2.** Usually, a facing plate such as plate **4** is secured to door **2** about the shaft **3.** The plate protects against jimmying of the latch mechanics within the door and covers the junction between the door and the shaft.

A key operated locking mechanism **5,** shown in outline form, is disposed within grip **8.** A shaft, such as shaft **6,** generally extends from within grip **8** through shaft **3** to the latch mechanics within the door. The locking mechanism **5** is constructed so that rotation of doorknob **1** may be selectively inhibited by a key. Alternatively, the lock mechanisms **5** may be left unlocked, which permits the doorknob **1** to be turned to open the door at will.

In rental complexes such as apartments, hotels and motels, the proprietor or custodian generally has a master key which can be used to unlock any door at will. Although the master key is usually used only to provide the proprietor or custodian with access to the room for legitimate and justifiable reasons, many tenants find

such access by the proprietor or custodian to be objectionable on a personal basis or for security reasons. As will be described in more detail below, the present invention affords a tenant the capability of inhibiting the use of a master key to unlock the door of his rental unit.

The security device of the present invention is formed of two primary components: a commercially available padlock and a U-shaped guard piece.

The padlock **11** includes a shackle **10,** which shackle is extendable from within the lock **9** and pivotable with respect thereto in the extended position. In the preferred embodiment, the spacing between legs **13** and **14** of shackle **10** is commensurate with the diameter of shaft **3** such that there is little play between the shackle and the shaft.

The guard piece is formed from a U-shaped channel **15** having a centerpiece **16** and two sides **17** and **18** extending therefrom. The width of centerpiece **16** should be approximately commensurate with the diameter of grip **8.** The ends of sides **17** and **18** are welded to legs **13** and **14** by welds **20** and **21,** respectively.

The distance between centerpiece **16** and shackle **10** is essentially determined by the length of sides **17** and **18.** In the preferred embodiment, the inner surface **19** of centerpiece **16** should be retained immediately adjacent face **7** of grip **8** to prevent and inhibit access to the keyhole of locking mechanism **5.** By welding shackle **10** to sides **17** and **18** such that the shackle is immediately adjacent the rear surface of grip **8** when centerpiece **16** is adjacent face **7,** any play along the longitudinal axis of doorknob **1** will be minimized. Similarly, pivotal movement of the guard with respect to the longitudinal axis of doorknob **1** will be restrained by the shackle **10** contacting the rear surface of grip **8** and the centerpiece **16** contacting the face **7** of grip **8.** It may be pointed out that play may also be minimized if the length of shackle **10** extending from lock **9,** when the former is in the locked position, is just sufficient to clear the shaft **3.** That is, the distance between the top of lock **9** and the undersurface of the central curved part of shackle **10** should be equal to or slightly greater than the diameter of shaft **3.** Further, if the width of centerpiece **16** is maintained essentially commensurate with the diameter of grip **8,** side play of the guard will be essentially restrained by sides **17** and **18.** Thereby, once the present invention is mounted and secured to doorknob **1,** there will be insufficient play between the guard and the doorknob to permit access to the keyhole of lock **5.**

The present invention may be removed from doorknob **1** from the position shown in FIG. **1** in the following manner. Key **12** is turned to release one leg of shackle **10** from lock **9** of padlock **11,** which permits the shackle to be partially withdrawn from the lock. Lock **9** is thence pivoted about the shackle leg remaining within lock **9.** By pivoting lock **9** through approximately **180°,** the present invention may be lifted upwardly to disengage the shackle from shaft **3** and the U-shaped member **15** from about grip **8.** The doorknob **1** may then be unlocked in the conventional manner. To position the present invention on a doorknob, the above steps are reversed.

For less avant garde doorknobs than that shown in FIG. **1,** the shaft is of substantially lesser diameter than that of the grip. In order to utilize the teachings of the present invention for such doorknobs, the modification shown in FIGS. **3** and **4** may be employed.

The U-shaped channel **30** is configured to have a centerpiece **33** extending across the face of the doorknob **25** so that sides **31** and **32** may depend therefrom at an angle of **90°.** In order to minimize the play of U-shaped channel **30,** it is necessary to employ a padlock having a shackle **40** which fits snugly about shaft **26.** In many cases, such a shackle is of lesser total width than the diameter of doorknob **25.** To preserve the capability of limited play of U-shaped channel **30** adjacent the face of doorknob **25,** it may be expeditious to insert spacer **45** between side **31** and leg **41** and spacer **46** between side **32** and leg **42.** The width of spacers **45** and **46** is essentially determined by the difference in width between shackle **40** and sides **31** and **2.**

The operation of the present invention as shown in FIGS. **3** and **4** is identical to that described with respect to FIGS. **1** and **2.**

While the sides of the guard, as shown in FIGS. **1** and **3,** are generally trapezoid shaped, it is to be understood that they may configure differently therefrom. The configuration of the sides are predicated upon two requirements. First, there must be sufficient width to the sides adjacent the shackle to provide a robust and secure attachment therebetween. Secondly, the height of the sides adjacent the centerpiece of the guard must be sufficient to prevent access to the doorknob keyhole despite some play of the guard. If these two criteria are followed, access to the keyhole will be effectively inhibited.

Because the guard is formed of relatively easily available channel stock, strength and hardness of the channel, commensurate with that of the shackle, can be easily and readily obtained in commercial quantities. Further, the padlock may be selected from any one of the many different types readily available through retail or wholesale outlets. Thereby, the components of the present invention are readily available in the market place, which availability renders the present invention relatively inexpensive and thus widely soluble.

Referring now to FIGS. **5** and **6,** the lock **50** is shown having shackle **51** similar to those described in connection with FIGS. **1** through **4.** However, the U-shaped guard piece or channel **53** is formed having a straight center piece **54** secured to a generally semi circular or arcuate shroud **55** which, when placed on the doorknob **56,** encases the perimeter of the doorknob **56** for **180°** or more. In the embodiment shown in FIGS. **5** and **6,** the shroud **55** effectively prevents any person from obtaining an effective grip upon the doorknob **56.** In some instances, the door lock may be forced by using a pipe wrench on the doorknob and simply breaking the lock by twisting the knob. The embodiment shown in FIGS. **5** and **6** effectively prevents the use of such a wrench since the doorknob **56** cannot be gripped and no effective frictional engagement can therefore be made therewith.

While the principles of the invention have now been made clear in an illustrative embodiment, there will be immediately obvious to those skilled in the art many modifications of structure, arrangement, proportions, the elements, materials and components, used in the practice of the invention which are particularly adapted for specific environments and operating requirements without departing from those principles.

I claim:

1. A unitary security device for lockable doorknobs of the type having a shaft extending lateral from a door

and terminating in a bulbous grip, a key operated lock mounted within the grip having a keyhole generally axially aligned with the shaft and disposed on the face of the grip opposite to the shaft, said security device comprising in combination:

A. a U-shaped channel for receiving the grip, said U-shaped channel including

a. a centerpiece positionable adjacent the face of the grip and overlapping the keyhole, said centerpiece being of a width generally commensurate with the width of the grip; and

b. an arcuate shroud extending from opposite edges of said centerpiece, said shroud extending laterally toward the door to encase the perimeter of said grip;

B. a padlock including a shackle for straddling the shaft and a lock mechanism for selectively engaging one leg of said shackle; and

C. means securing said arcuate shroud to said shackle; whereby, access to the keyhole in the grip is inhibited by said centerpiece, and frictional engagement with said grip is prevented by said arcuate shroud.

2. The combination set forth in claim **1**, wherein said means securing said arcuate shroud to said shackle comprises spacers extending radially inwardly from said arcuate shroud to said shackle.

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