United States Patent [19]

Racobs

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[54] **DOOR SECURING APPARATUS**

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[52] **U.S. Cl.** **70/416,** 70/418, 70/431

[51] **Int. Cl.** **E05b 13/08**

[58] **Field of Search** 70/211, 416, 418, 419, 70/429, 430, 431, 447; 292/347

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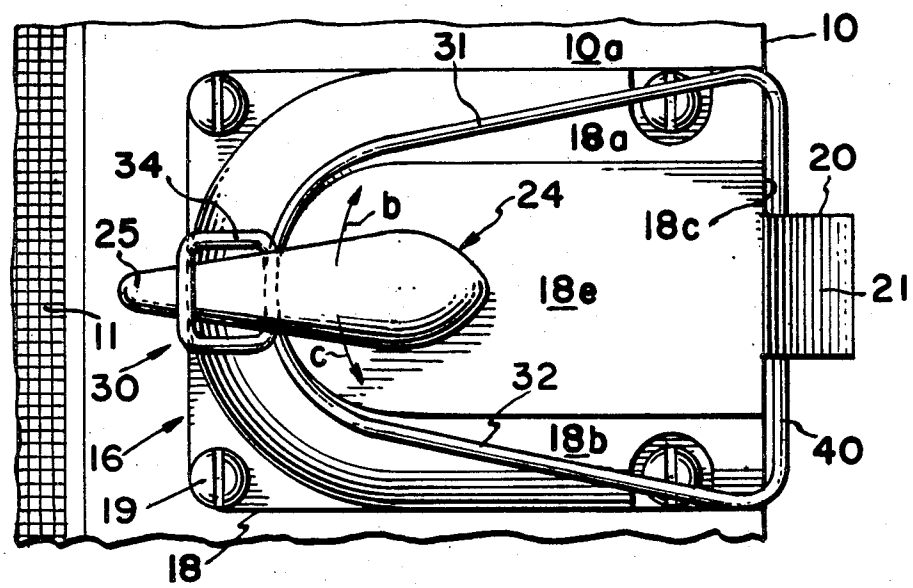
Primary Examiner—Robert L. Wolfe

Attorney, Agent, or Firm—John J. Swartz

[57] **ABSTRACT**

The combination of a door lock, including a door locking bolt and a bolt operating handle swingable to turn the bolt between locking and unlocking positions, and apparatus coupled to the handle to prevent unauthorized turning of the handle.

6 Claims, 7 Drawing Figures



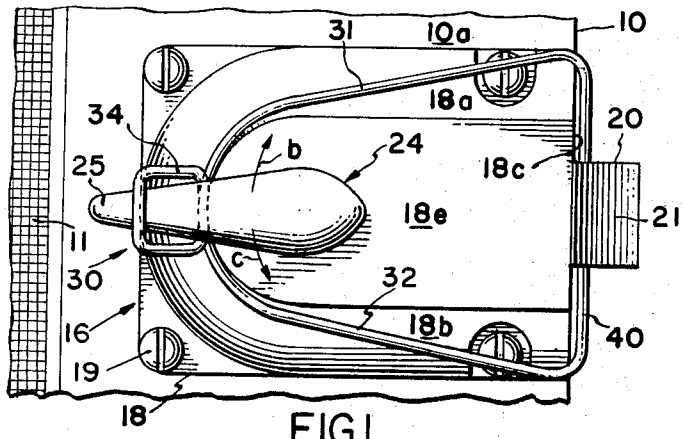


FIG.1

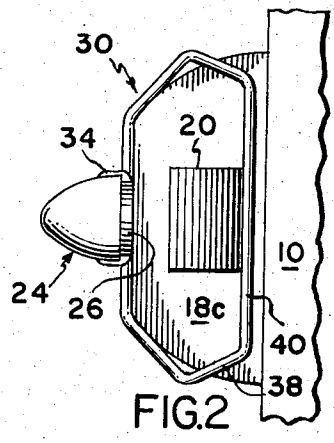


FIG.2

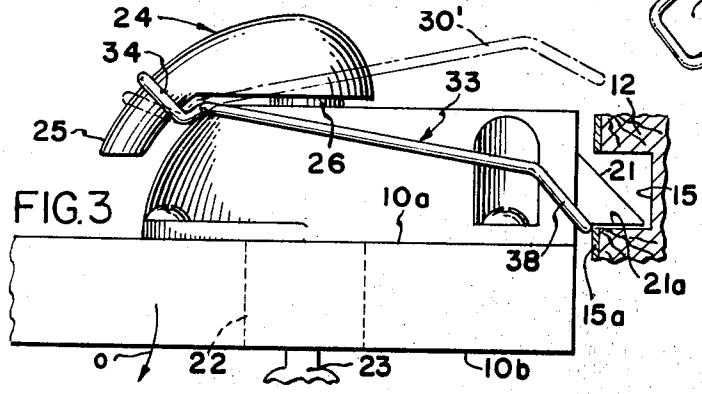


FIG.3

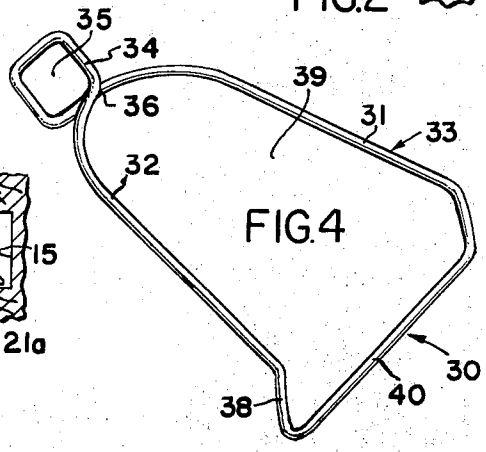


FIG.4

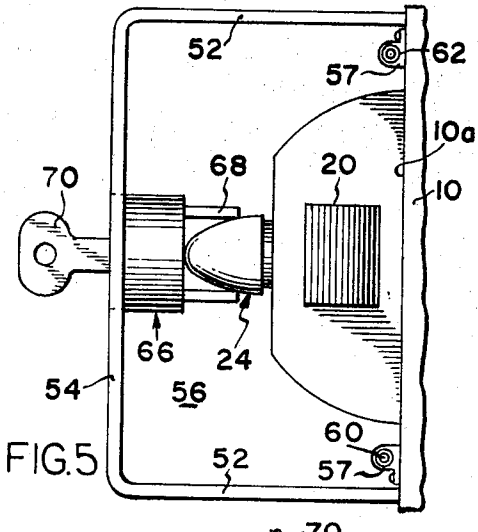


FIG.5

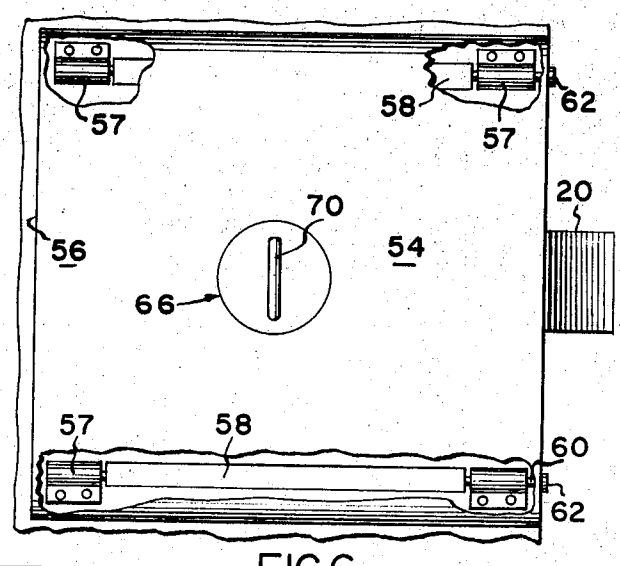


FIG.6

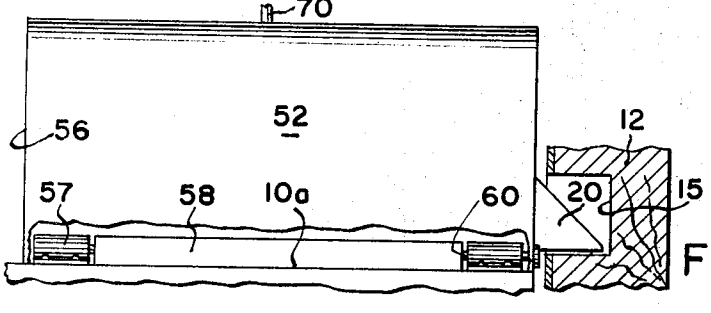


FIG. 7

DOOR SECURING APPARATUS

BACKGROUND OF THE INVENTION

This invention relates to security devices and more particularly to apparatus for precluding the unauthorized turning of a bolt actuating handle on a door lock.

Houses are generally provided with doorways having an inner door which opens inwardly and a confronting outer door which opens outwardly to enable people to quickly and easily enter and leave the house. In a warm climate, the outer door generally constitutes a screen-covered door which permits the free flow of air to and from the house when the inner door is ajar. Even though the screen-covered door is locked from the inside, it is relatively easy for a burglar to gain access to the house when the inner door is unlocked or ajar. A burglar need merely to slit the screen, place his hand through the slit, and turn the bolt operating handle on the lock mounted inside the screen-covered door to unbolt the screen-covered door so that it may be swung outwardly. Accordingly, it is an object of the present invention to provide apparatus which will deter such unauthorized access to a building.

It is another object of the present invention to provide apparatus which will selectively prevent the unauthorized turning of a bolt operating handle on a door lock.

It is a further object of the present invention to provide a door handle retaining device which reacts between a door locking bolt, which is operated by a handle, and the handle.

A further object of the present invention is to provide a door handle retaining device including a rod-like member forming a loop which receives part of the handle and another loop receiving a door locking bolt, when the bolt is in the extended, locking position.

It is another object of the present invention to provide a hood overlying the handle of a lock disposed on the inside of a door and mounting a key operable device for turning the handle.

SUMMARY OF THE INVENTION

Apparatus for preventing the turning of a handle on a door lock, which includes a door-locking bolt, operated by a handle, comprising: means reactable between the bolt and the handle means for preventing the unauthorized turning of the handle.

Other objects and advantages of the present invention will become apparent to those of ordinary skill in the art by the following description when considered in relation to the accompanying drawings, in which:

FIG. 1 is a side elevational view of a door handle securing device, constructed according to the present invention, mounted on a door mounted door lock;

FIG. 2 is an end elevational view of apparatus constructed according to the present invention, taken along the line 2—2 of FIG. 1;

FIG. 3 is a sectional bottom plan view, taken along the line 3—3 of FIG. 1;

FIG. 4 is a front, perspective view of a lock handle restraining device constructed according to the present invention;

FIG. 5 is an end elevational view of apparatus constructed according to a modified embodiment of the

present invention mounted on a door and overlying a door lock;

FIG. 6 is a side elevational view of the apparatus illustrated in FIG. 5; and

FIG. 7 is a bottom plan view taken along the line 7—7 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring in the first instance to FIGS. 1 – 4, a device constructed according to the present invention is particularly adapted for use with a conventional screen door, generally designated **10,** swingably mounted on a door casing, generally designated **12,** between a closed position, illustrated in FIG. **1,** and an open position. The door **10** may include an opening covered by a screen **11.** The door casing **12** is provided with a bolt-receiving notch or recess **15** for a purpose to become immediately apparent. A strike plate **15***a* surrounds the bolt receiving recess **15,** as usual.

A door lock, generally designated **16,** is mounted on the inside **10***a* of the door **10** and includes a housing **18,** fixed to the door **10** by screws **19,** mounting a bolt **20** which is longitudinally movable between an extended or locking position, illustrated in FIGS. 1 and 3, received in the door casing recess **15,** and a retracted position in which the bolt **20** is removed from the recess **15,** permitting the door **10** to be swung open in the direction represented by the arrow *o* (FIG. 3). The bolt **20** is normally biased to the extended position by a spring (not shown) disposed interiorly of the housing **18.** The housing **18** includes side walls **18***a* and **18***b*, an end wall **18***c* flush with the edge of the door, an opposite, curvilinear end wall **18***d*, and a top wall **18***e*.

The door lock **16** includes a key operated, tumbler set, generally designated **22,** having a keyway on the outside **10**b of the door **10** for receiving a tumbler operating key **23.** When the key **23** is turned, the tumbler **22** moves the bolt **20** from the extended to the retracted positions, as usual.

The door lock **16** also includes a bolt-actuating handle, generally designated **24,** connected to a stem **26** which is operatively connected to the bolt **20** to longitudinally move the bolt **20** between its extended and retracted positions when the handle **24** is swung in either direction, represented by the arrows *b* and *c* (FIG. **1**). The handle **24** includes a curvilinear end portion **25** which is inclined toward the door **10.** The lock may typically be a lock such as "Yale Springbolt GW 3-36" manufactured by Yale Lock & Hardware Division of Eaton, Yale & Towne, 401 Theodore Fremd Avenue, Rye, N.Y. The bolt **20** includes an inclined end face **21** which engages the strike plate **15***a* on the door casing **15** to force the bolt **20** to its retracted position when the door is being closed.

The handle restraining device for preventing the unauthorized turning of the handle **24** about the axis of the stem **26** is generally designated **30** and comprises a continuous wire or rod **33** bent to form a large loop **31,** converging toward the door in the position shown in FIG. **3,** and defining an opening **39,** and a smaller outwardly diverging loop **34** defining an opening **35.** The larger loop **31** includes rearwardly converging side portions **32** extending along the sides **18***a* and **18***b* of the housing **18** and welded to each other at **36.** The sides **32** include inclined end portions **38,** converging toward the door **10** and spanned by an end portion **40**

which, in operative position, underlies the bolt **20.** The opening **35** in the smaller loop **34** receives the portion **25** of the handle **24.**

The handle restraining device **30** is installed on the lock **16** by firstly moving the loop **34** over the handle portion **25** to the position illustrated in chain lines at **30'** (FIG. **3**), and then swinging the device **30** downwardly to the position illustrated in solid lines in FIG. **3.** As the device **30** is being swung downwardly, the end wire portion **40** of the large loop **39** will engage the inclined face **21** on the bolt **20** and force it to a withdrawn position. As soon as the wire portion **40** passes the bolt **20,** the bolt **20** will be spring returned outwardly to the position illustrated in FIG. **3.** When the handle restraining device **30** is in the handle restraining position, illustrated in FIG. **3,** the side portions **32** of the device **30** will be sprung slightly out of the plane of the retaining device **30** so that the end wire portion **40** will be urged into engagement with the outside surface **21***a* of the bolt **20.** When the device **30** is installed in the position illustrated in FIGS. **1** and **2,** the handle **24** is locked in position and cannot be swung in the directions represented by the arrows *b* and *c* to retract the door bolt **20.** The end portions **38** and **40** engage the edge **18***c* of the housing to preclude longitudinal movement of the device **30** when it is installed as illustrated in FIGS. **1 - 3.**

To remove the restraining device **30,** the lock **22** is turned by the key **23** to withdraw the bolt **20** and permit the wire portion **40** to be moved past the end of the bolt **20** to the bolt-releasing position, illustrated in chain lines in FIG. **4,** and the door **10** to be opened outwardly in the direction of the arrow *o.* When the arms **32** spring to the position illustrated in chain lines permitting the device **30** to be removed, the handle **24** is free to be turned.

Referring now more particularly to FIGS. **5, 6** and **7,** apparatus for preventing turning of the handle **24** is generally designated T and comprises a hood or cover, generally designated **50,** having top and bottom walls **52** spanned by a side wall **54** and one end wall **56.** The top and bottom walls **52** include integral, pin receiving members **57** having bores in alignment with aligned bores in pin receiving members **58** (FIG. **6**) mounted on the inside **10***a* of the door **10** for receiving locking pins **60** having enlarged heads **62.** When the door **10** is opened, the cover **50** may be readily, quickly removed by merely sliding the pins **60** out of the bolt receiving members **57** and **58.** When the door is closed, the pins **60** are in endwise alignment (FIG. **7**) with the door casing **12** to preclude their removal. Mounted on the side wall **54** of the housing **50** is a tumbler lock assembly, generally designated **66** including rotatable, internal, handle grasping portions **68** which receive the bolt operating handle **24.** The tumbler lock assembly **66** includes a keyhole for receiving a key **70** which, when turned about its axis, turns the handle grasping portions **68** to turn the handle **24** about its axis.

The cover **50** is installed by placing it over the door lock **16,** when the door **10** is open, so that the apertures in the pin receiving members **57** and **58** are in alignment and inserting the pins **60** into the aligned openings. The door **10** is then closed. In the event that the user needs to get outside, he merely inserts the key **70** in the tumbler **66** and turns it to turn the handle **24** which retracts the bolt **20** from the recess **15** and permits the door **10** to be swung open. If the user wants to enter the house from the outside, he merely turns the key **23** as described hereinbefore to withdraw the bolt **20** so that the door **10** can be swung open. In the event that a prowler cuts through the screen **11** on the door **10** and reaches inside the door **10,** he will be unable to grasp the handle **24** to turn the bolt **20.**

It is to be understood that the drawings and descriptive matter are in all cases to be interpreted as merely illustrative of the principles of the invention, rather than as limiting the same in any way, since it is contemplated that various changes may be made in various elements to achieve like results without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In combination:

a door lock for a door swingable between open and closed positions including

a longitudinally extending bolt longitudinally movable between an extended locking position to preclude swinging of said door and a retracted position permitting the door to be swung between said closed and open positions;

bolt operating means for moving said bolt between said extended and retracted positions;

manually operable bolt operating means, including a handle swingable about an axis transverse to said longitudinal bolt, for moving said bolt between said retracted and extended positions; and

means reactable between said bolt in said extended position and said handle for preventing the unauthorized turning of said handle about said axis including a first loop receiving said handle and a second loop receiving said bolt in the extended position.

2. The combination set forth in claim **1** wherein said preventing means includes springable means for biasing said cross member into engagement with the side of said bolt.

3. In combination:

a door lock for a door swingable between open and closed positions including

a longitudinally extending bolt longitudinally movable between an extended locking position to preclude swinging of said door and a retracted position permitting the door to be swung between said closed and open positions;

bolt operating means for moving said bolt between said extended and retracted positions;

manually operable bolt operating means, including a handle swingable about an axis transverse to said longitudinal bolt, for moving said bolt between said retracted and extended positions; and

means reactable between said bolt in said extended position and said handle for preventing the unauthorized turning of said handle about said axis including a first loop receiving said handle and a second loop receiving said bolt in the extended position;

said lock means includes a housing, said preventing means includes a wire having elongate side portions extending along opposite sides of the housing and spanned by an integral end portion engaging one side of said bolt.

4. The combination set forth in claim 1 wherein said handle means includes an elongate section converging toward said bolt and said first loop diverges away from said bolt.

5. The combination set forth in claim 4 wherein said second loop includes a pair of side members spanned by a cross member which engages said one side of said bolt.

6. In combination:

a door lock adapted to be mounted on a door including

a lock casing;

a bolt longitudinally movable in said casing between a retracted position permitting the door to be opened and an extended position preventing the door from being opened; and

manually operable, bolt operating means including elongate handle means on one side of said bolt and swingable about an axis transverse to the axis of said bolt for moving said bolt between said retracted and extended positions;

a locking device precluding said handle means from being turned about said axis including

a resilient, slender rod including a first loop receiving said handle means and a larger loop receiving said bolt and abutting said casing to preclude longitudinal shifting of said first-mentioned loop.

* * * * *