# United States Patent [19]

**Eskoff**

[11] **3,843,178**

[45] **Oct. 22, 1974**


[54] **OVERHEAD HAND OPERATED DOOR LOCK**


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[22] Filed: **July 5, 1973**

[21] Appl. No.: **376,804**

[52] **U.S. Cl.**..... **292/262,** 292/288, 292/DIG. 36

[51] **Int. Cl.**..... **E05c 17/04**

[58] **Field of Search**..... 292/300, DIG. 36, 262, 292/292, 295, 339, 288; 248/274, 288, 224; 16/82, 83



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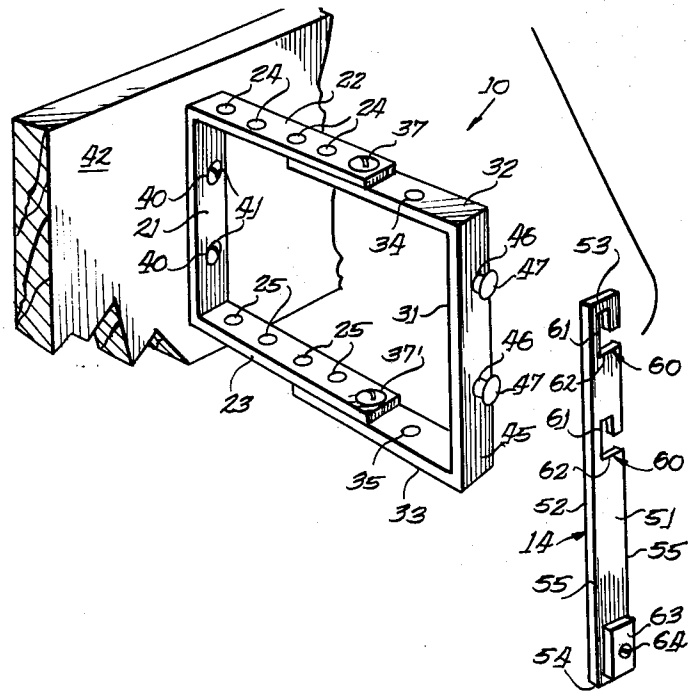
*Primary Examiner*—Roy D. Frazier
*Assistant Examiner*—Peter A. Aschenbrenner



[57] **ABSTRACT**

An overhead hand operated door lock intended for use with a sliding overhead garage type door having a bracket adapted for mounting to the door frame above the top edge of the door with a separate locking plate adapted to be removably mounted onto a projecting end of the bracket in a position adjacent a top edge portion of the door in a manner adapted to engage the top portion of the door to prevent the same from being opened from a closed vertical position to an opened horizontal position.


**2 Claims, 4 Drawing Figures**



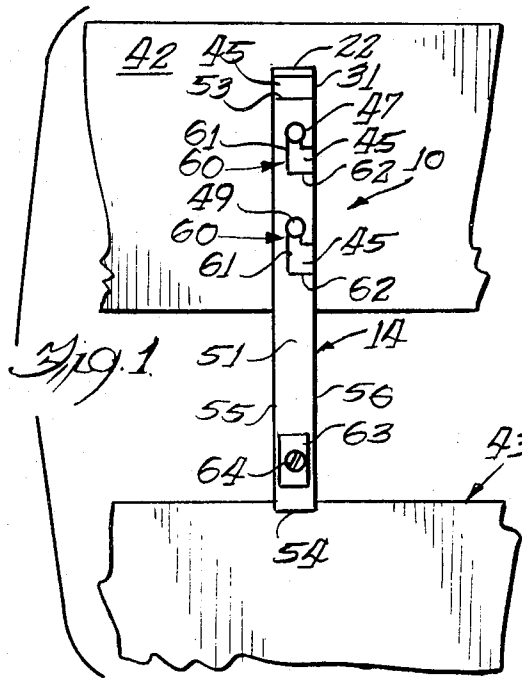



Fig. 1

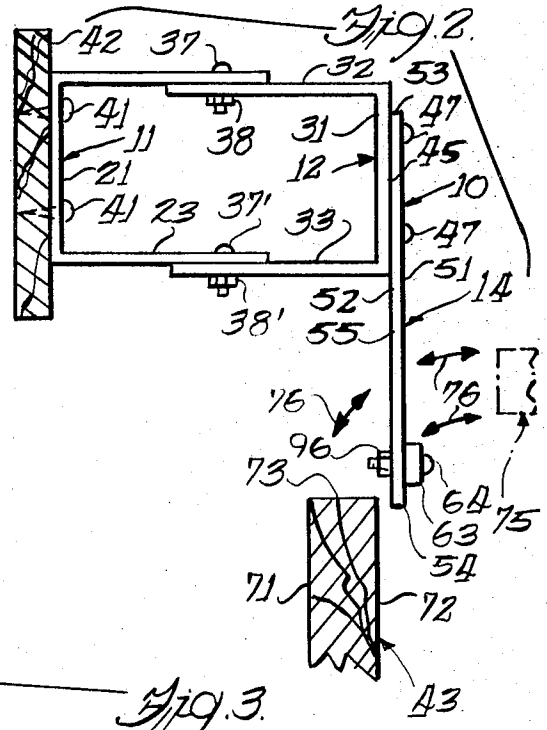



Fig. 2

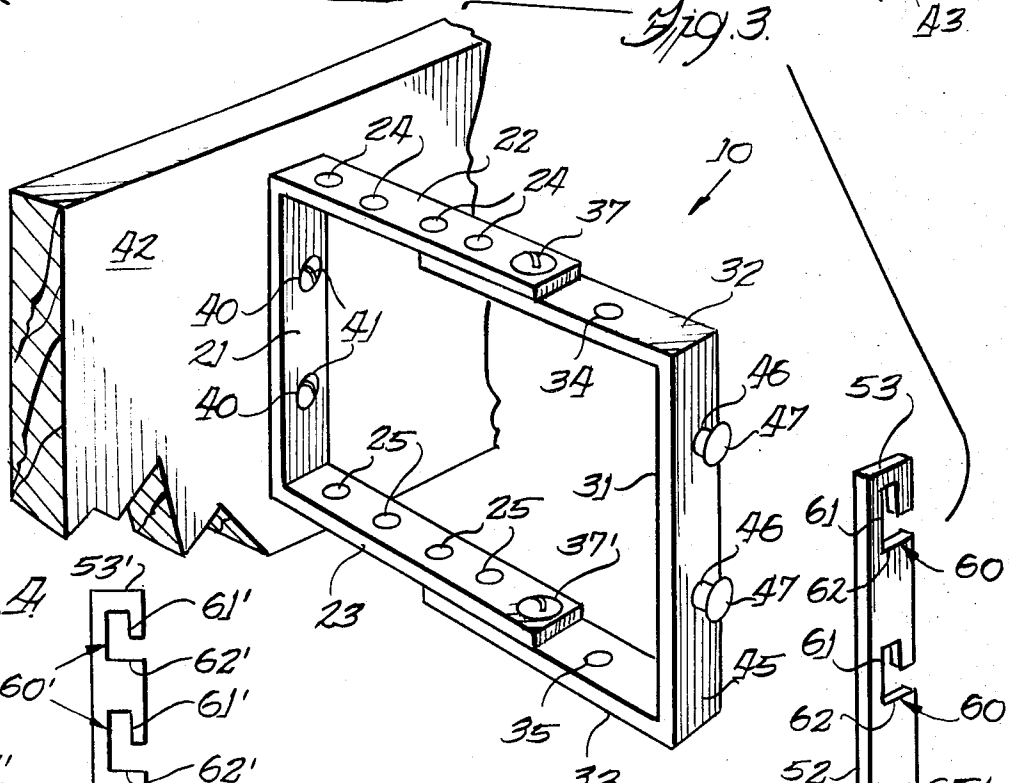



Fig. 3

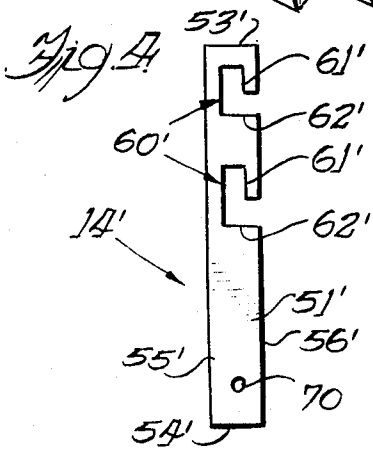



Fig. 4

# OVERHEAD HAND OPERATED DOOR LOCK

## BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to locking devices and more particularly to a hand operated door lock intended for use with overhead sliding garage doors to prevent unauthorized opening of the garage door from the outside from the closed vertical position to the open horizontal position, the lock being operable without requiring any keys, tools, or the like.

2. Description of the Prior Art

It appears that every year the number of thefts and vandalism occurrences about residential properties, garage storage properties and the like is constantly increasing, with the prior art acknowledging this increase by providing different types of locking devices adapted for securing a garage door of the sliding overhead type against unauthorized entry. However, such door locks are very expensive so that for economical reasons they have not met wide acceptance among the vast number of home owners and small gas station owners who still wish some type of protection against unauthorized into their garages.

Prior art devices are not readily suitable for residential home type use both due to their initial cost as well as to their complexity of installation and complexity of usage which would discourage a normal homeowner from constantly making full use of the locking device such that the garage would still not be fully protected at all times.

It would thus be desirable to provide a readily operable and readily installed inexpensive locking device suitable for use by the normal home owner to positively retain the sliding overhead garage door in a closed position against attempts to open the same such as for purposes of vandalism and theft.

## SUMMARY OF THE INVENTION

The present invention remedies and overcomes all of the foregoing deficiencies and disadvantages of presently available locking devices by providing a novel locking device intended for ease of installation by the normal homeowner without any special required mechanical skills and which is operable without requiring keys or special tools in a manner to positively retain a sliding type overhead garage door in the closed vertical position against any attempts at raising the same by potential vandals, burglars, and any other individuals attempting unauthorized entry from the outside thereof.

It is a feature of the present invention to provide an overhead hand operated door locking device adapted to be quickly and easily applied to a door frame having a sliding overhead type garage door associated therewith in a manner to securely fasten the same in a closed vertical position without requiring keys or special tools, and which may be quickly and readily disengaged from the door to permit the authorized opening of the same.

A further feature of the invention is to provide a door lock of simple construction which can be readily attached to a door frame and readily operable to effectually hold the door closed against operation from the outside.



Yet still a further feature of the invention is the provision of a door lock which is simple in its construction and which is positive in its operation to prevent the unauthorized opening of an overhead type door from the outside; one which is relatively inexpensive to manufacture due to its simplicity of construction; one which is rugged and durable and which therefore may be guaranteed by the manufacturer to withstand the intended usage without fear of breakage or failure under unauthorized attempts of entry through the door; one which is readily attached to the door frame utilizing normal readily available tools; one which is operable between a locking and an unlocking position without requiring any special keys, tools, or the like; and one which, otherwise, is well adapted to perform the services required of it, are further desirable features which have been borne in mind in the production and development of the present invention.

Other features and advantages of this invention will be apparent during the course of the following description.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings forming a part of this specification, and in which like reference characters are employed to designate like parts throughout the same:

FIG. **1** is a fragmentary front elevational view of the locking device of the invention attached to a garage beam above a door opening and associated with the top edge of the back surface of a sliding overhead door;

FIG. **2** is a side elevational view of the bracket, door beam, and garage door or FIG. **1** showing the open horizontal position of the door in phantom configuration;

FIG. **3** is an enlarged fragmentary perspective view of the locking device of the present invention secured to a beam of the door frame; and

FIG. **4** is a front elevational view of a modified form of the locking plate of the present invention.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in detail and in particular to FIGS. **1–3** inclusive, a preferred form of a locking device embodying the invention is designated in its entirety by the reference numeral **10** and is comprised of three component parts, namely a generally U-shaped mounting bracket **11,** a generally U-shaped telescoping bracket member **12,** and an elongated locking plate **14** adapted to be removably attached to the telescoping member **12.** The locking device **10** is preferably manufactured out of heavy gauge metal, such as steel or aluminum, or may be manufactured out of any other suitable satisfactory material, such as hard wood or heavy gauge plastic which has the required structural characteristics to operate and function within the scope of the invention.

The mounting bracket **11** is of a general U-shaped configuration having an elongated body member **21** of rectangular shape with a top leg portion **22** and a bottom leg portion **23** each having one end respectively connected to the top and bottom ends of the body member and projecting perpendicularly outwardly therefrom in planes parallel to one another. The top leg portion **22** is provided with a series of longitudinally spaced openings **24** disposed therein and extending axi-

ally therethrough, with the bottom leg portion being similarly provided with a series of longitudinally spaced openings **25** extending axially therethrough, the respective openings **24** and **25** being in axial alignment.

The telescoping bracket member **12** is of a general U-shaped configuration having a body member **31** extending parallel to body member **21** and spaced longitudinally therefrom, and having a top leg portion **32** having one end attached to the top end of the body member and projecting perpendicularly outward therefrom in a direction toward the mounting bracket member **11**, and also having a bottom leg member **33** having one end attached to the bottom end of the body member **31** and projecting outwardly therefrom in the same direction as top leg member **32** in a manner parallel thereto. The top leg member **32** is provided with a plurality of longitudinally spaced openings **34** extending axially therethrough, with the bottom leg portion **33** being provided with a series of longitudinally spaced openings **35** extending axially therethrough, the respective openings **34** and **35** being in axial alignment with each other.

Telescoping bracket member **12** is adjustably connected to mounting bracket member **11** by placing the top and bottom leg members **32** and **33** in respective juxtaposition with the top and bottom leg members **22** and **23** with selected openings **34** and **35** disposed in axial alignment with selected openings **24** and **25**, with the members being secured in the selected adjusted position by a threaded bolt **37** axially inserted through a pair of aligned openings **24** and **34** and secured therein by the nut **38**. Similarly, a threaded bolt **37'** is inserted axially through aligned openings **25** and **35** and secured therein by a nut **38'**.

The body member **21** of the mounting bracket member **11** is provided with a pair of spaced apart openings **40** extending axially therethrough, with a pair of screws **41** adapted to pass through the openings **40** and secure the bracket in a vertical position on a beam structural member **42** which is disposed above a garage door type opening having a sliding overhead door **43** mounted for operation relative thereto. It is to be understood that beam **42** may form a part of the frame opening defining the door opening, or may be any other structural member mounted above the door opening.

The body member **31** is provided on its outermost surface **45** with a pair of vertically spaced horizontally extending cylindrical pins **46** each having an enlarged head portion **47** formed integrally thereon and spaced horizontally from surface **45**.

The locking plate **14** is of an elongated rectangular configuration having a front surface **51**, a back surface **52**, a top end **53**, a bottom end **54**, and opposed side edges **55** and **56**. A pair of vertically spaced L-shaped slots **60** are provided in the top portion of the locking plate **14** extending completely therethrough between front and back surfaces **51** and **52**, each of the L-shaped slots having a leg portion **61** extending longitudinally of the locking plate, with a foot portion **62** each having one end connected to the respective leg portion with the opposite end extending out of the side edge **56**. The vertical spacing between slots **60** is identical to the vertical spacing between pins **46**, with the width of the leg and foot portions of each of the slots being slightly greater than the diameter of the associated pins but being less than the diameter of the enlarged head portion **47** on each of the pins.

The locking plate **14** is adapted to be removably connected to bracket member **12** by receiving pins **46** in respective slots **60** such that the top portion of the back surface **52** of the locking plate is in juxtaposition with the outermost surface **45** of the body member **31** of the bracket member **12**, the mounting being clearly understood from the drawings as to the pins being first received in the respective foot portions **62** until becoming aligned with respective leg portions **61**, at which time the locking plate moves vertically downward to engage the pins in the top end portions of the respective leg slot portions **61**. To assist in this downward movement of the locking plate **14** in the engagement of the pins **46** in respective leg portions **61** of the slots, a suitable weight **63** is attached to the bottom of the locking plate by a screw or bolt member **64** such that gravity acting on the weight **63** will tend to move the locking plate vertically downward to engage the pins **46** in the leg portions **61** after the pins are properly aligned therein after passing through the respective foot portions **62**.

Referring now to FIG. **4** there is shown a modified form of a locking plate which is designated generally by reference numeral **14'**, this being identical to locking plate **14** except that instead of weight **63** secured thereto there is provided an opening **70** in the bottom end portion thereof extending through the front and back surfaces **51'** and **52'** adapted for a hanging type weight (not shown) to be tied thereto by suitable cable, wire, string, or the like and dangled downwardly therefrom in a manner to weight the locking plate **14'** in the same manner as weight **63** weights the locking plate **14**. In view of the similarities between locking plate **14'** and locking plate **14**, similar reference numerals representing similar elements have been utilized except being further identified by a prime mark inserted thereafter.

In operation, and referring to FIG. **2**, it is seen that the mounting bracket **11** is secured in a vertical position above a door opening, with telescoping bracket member **12** selectively adjusted to project outwardly from the beam **42** a distance beyond the innermost surface of the door **43**, after which this position is maintained by bolts **37**, **37'** and nuts **38**, **38'** in the manner as aforedescribed. The door **43** has a front surface **71**, a back surface **72**, and a top edge **73**, with the horizontal open position of the door being as shown in phantom configuration in FIG. **2** and identified generally by reference numeral **75**.

With the door **43** in the vertically closed position, the locking plate **14** is removably connected to the pins **46** so as to project outwardly and downwardly therefrom in a manner to intercept the path of travel of the door when it would be moved from the vertical closed position to the horizontal open position **75**, this path of travel being generally designated by arrows **76** in FIG. **2**. It is preferable that the length of the locking plate **14** extend beyond such path **76** and be in close adjacent proximity to the top portion of back surface **72** as the closer the bottom end **54** of the locking plate to the door **43** then the smaller opening sliding type movement of the door being permitted.

It is seen from FIG. **2** that when the locking plate is in position it is impossible to raise the door from the vertical closed position **43** into the horizontal open position as designated by reference numeral **75** since the locking plate is in the required path of travel of the

door blocking the same so that the door cannot be opened. Further, it is seen that locking plate **14** is readily removed from pins **46** by merely vertically raising the locking plate a short distance and then sliding the same off of the pins through the leg portions of the slots **60** such that door **43** may then be raised into the horizontal open position.

There is thus provided a relatively inexpensive device exceptionally simple in operation and yet positive in operation in maintaining overhead sliding type doors, such as encountered in residential garages, gas stations, and the like positively secured in a closed locked position while readily permitting the unlocking of the door without requiring keys, tools, and the like.

It is to be understood that the form of this invention herewith shown and described is to be taken as a preferred example of the same, and that this invention is not to be limited to the exact arrangement of parts shown in the accompanying drawings or described in this specification as various changes in the details of construction as to shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention, the scope of the novel concepts thereof, or the scope of the sub-joined claims.

I claim:

**1.** A hand operated door locking device intended for use with a sliding overhead type door of the type commonly found on garages and the like, the door being slidable between an open horizontal position and a closed vertical position relative to a door frame defining a door opening, the door having a front surface facing the door opening, a rear surface, a top edge, and a bottom edge, the lock comprising:

bracket means adapted for mounting on the door frame above the top edge of the vertically closed door and projecting horizontally outwardly therefrom in a manner to overlap the thickness of the door;

a locking plate removably mounted on the bracket means adapted to project therefrom to a position adjacent the top edge portion of the back surface of the vertically closed door in the normal door trajectory when being opened in a manner to engage the top edge of the door upon any attempt to slide the door upwardly to its open horizontal position so as to prevent the opening of the door;

the bracket means comprising a first U-shaped member including a body portion and two spaced apart parallelly extending leg portions extending outwardly in the same direction from opposed ends of the body portion; a second U-shaped member having a body portion disposed parallel to the body portion of the first member and having a pair of parallel spaced apart leg portions extending outwardly from respective top and bottom ends of the body portion in planes parallel to each other; a series of openings spaced along the pair of leg portions of the first member with respective openings in each leg portion being in axial alignment with each other, the axis of the openings being substantially parallel to the axis of the first member body portion; a series of spaced apart openings extending along the pair of leg portions of the second member with each of the respective openings in each leg portion being in axial alignment with each other and with the axis of the openings extending substantially parallel to the axis of the second member body portion; the first member leg portions adapted to be placed in juxtaposition with the respective second member leg portions and to be telescoped relative thereto in an adjustable manner with the selected telescope position of the respective first and second members being retained by the alignment of respective openings in the different leg portions and axially inserting bolts through the respective aligned openings to secure the first and second members in the adjusted telescoped positions; the outermost surface of the second member body portion being provided with a pair of spaced apart pins projecting outwardly therefrom in a perpendicular manner thereto adapted for removable engagement with the locking plate, each pin projecting a distance slightly greater than the thickness of the associated locking plate, with each pin provided with an enlarged head portion thereon for utilization in retaining the locking plate in proper position on the bracket meahs; and

the locking plate is of an elongated rectangular configuration, the top portion of the locking plate provided with a pair of spaced apart L-shaped slots therein, the spacing between the L-shaped slots being substantially identical to the spacing between the pin projections on the second member body portion, each slot having a leg portion extending longitudinally of the locking plate with the bottom end of each leg portion connected to a foot portion of the slot which extends substantially perpendicular to the respective leg portion and opens out of one edge of the locking plate, the width of the foot and leg portions of each of the slots being slightly greater than the diameter of the pin projections and less than the diameter of the enlarged pin heads whereby the slots may be slidingly engaged onto the respective projecting pins and locked thereon in the leg portions of the slots for removable connection of the locking plate to the bracket means with the bottom end portion of the locking plate extending into the plane of opening and closing travel of the door in a manner to block the path of travel of the door and prevent opening of the same until after the locking plate is removed from the bracket.

**2.** The hand operated door locking device as set forth in claim **1** further characterized by weight means attached to the bottom end portion of the locking plate to assist in the proper operation of the same.

* * * * *

# UNITED STATES PATENT OFFICE
# CERTIFICATE OF CORRECTION

Patent No. 3,843,178 Dated October 22, 1974

Inventor(s) Alexander Eskoff

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the cover sheet [76] "4214 Euclid Ave., East Chicago, Ill. 46312" should read -- 4214 Euclid Ave., East Chicago, Ind. 46312 --.

Signed and sealed this 7th day of January 1975.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

FORM PO-1050 (10-69)

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U.S. GOVERNMENT PRINTING OFFICE : 869-930