No. 870,948. PATENTED NOV. 12, 1907.

E. R. FUCHS.

DOOR SECURER.

APPLICATION FILED JAN. 28, 1907.

2 SHEETS—SHEET 1.

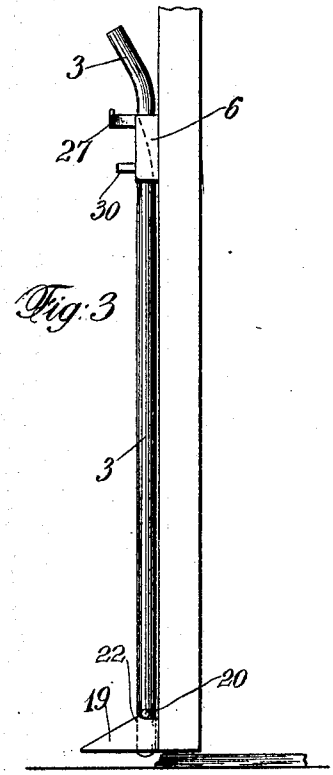

Fig. 3

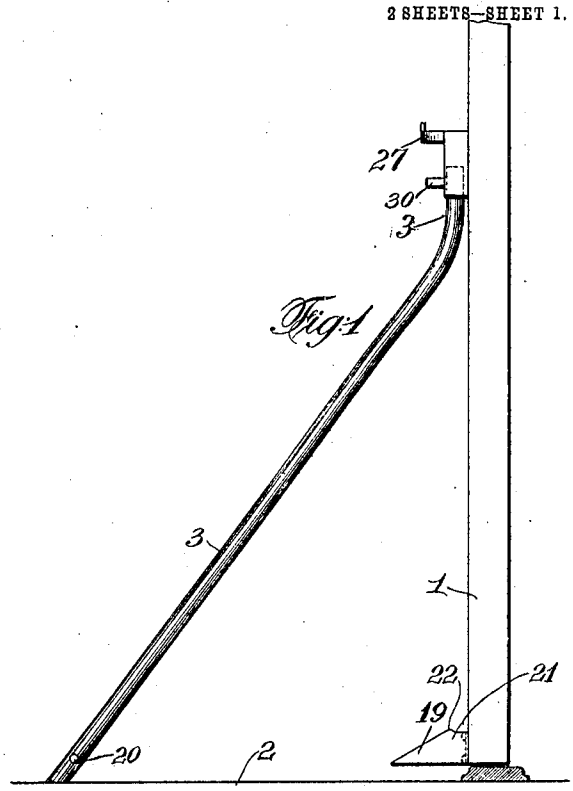

Fig. 1

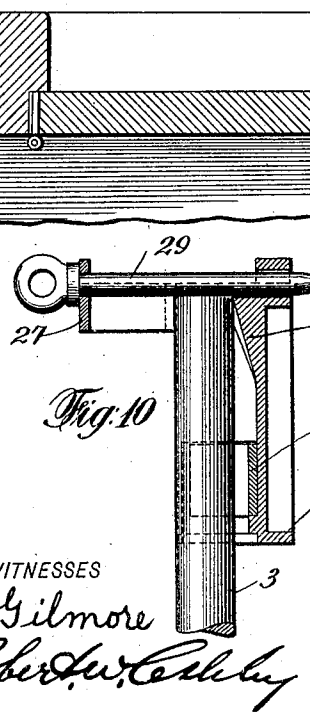

Fig. 10

Fig. 2

WITNESSES

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Fig. 6

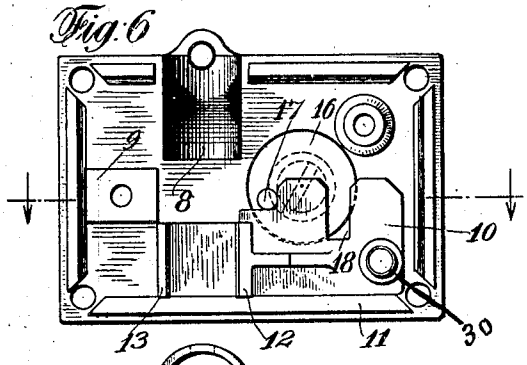
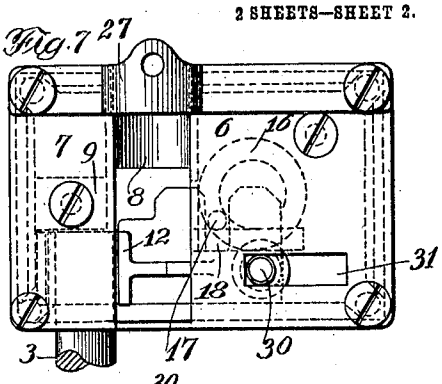


Fig. 7



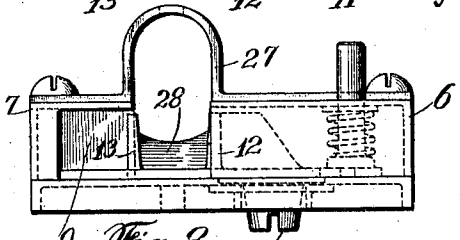


Fig. 8

Fig. 9

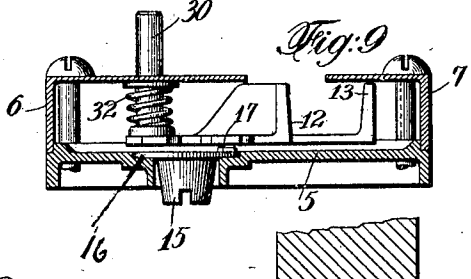


Fig. 4

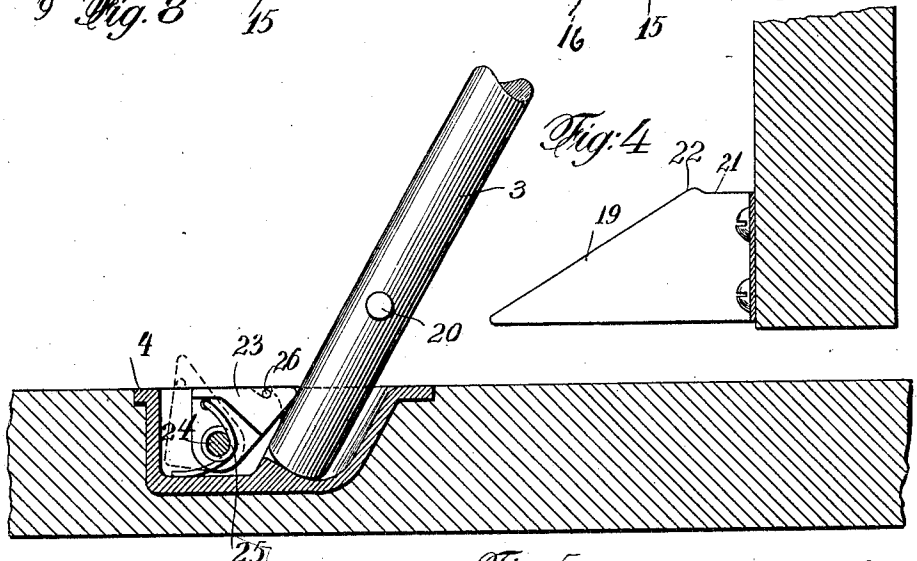
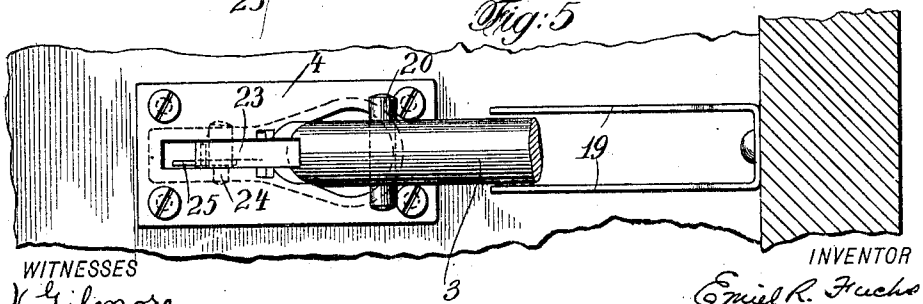


Fig. 5



WITNESSES

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UNITED STATES PATENT OFFICE.

EMIEL R. FUCHS, OF NEW YORK, N. Y.

DOOR-SECURER.

No. 870,948. Specification of Letters Patent. Patented Nov. 12, 1907.

Application filed January 28, 1907. Serial No. 354,520.

To all whom it may concern:

Be it known that I, EMIEL R. FUCHS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Door-Securers, of which the following is a specification.

In my Patents No. 840,486, dated January 8, 1907, and No. 843,527, dated February 5, 1907, I have described a door securer comprising a bar set into a socket fixed to the floor and adapted to be moved into and out of engagement with an abutment fixed to the door. In the particular embodiments of the invention illustrated in said patents if the bar is left in position the door can be opened only the distance from the closed position of the door to the floor socket. This, while not interfering in any way with the efficiency of the device as a securing means, necessitates the removal of the bar during the day, or while there is constant ingress and egress into and from the room. If there is no fixed place for keeping the bar it is apt to become lost or mislaid and in that way be the cause of inconvenience.

In the present embodiment of the invention the position of the securing bar when the door is closed is in a vertical plane at an acute angle to the plane of the door, provision being made for raising the bar and retaining it on the door should the bar be in position when the door is swung open its full distance.

Other novel features will be apparent from the following description taken in connection with the accompanying drawings in which

Figure 1 is a side elevation with the door closed and showing the bar in position; Fig. 2 a top view of the same; Fig. 3 a side elevation with the door opened at right angles to the position of Fig. 1; Fig. 4 a detail view partly in section showing the lower end of the bar in its socket and the means applied to the door for raising the bar; Fig. 5 a top view of the parts illustrated in Fig. 4; Fig. 6 a view in elevation of the lock with the cover plates removed; Fig. 7 a similar view with the cover plates in position and also showing the upper end of the bar in its locked position; Fig. 8 an end view of the construction illustrated in Fig. 6; Fig. 9 a vertical section on the plane of the line 9—9 of Fig. 6 looking in the direction of the arrows; and Fig. 10 a detail view to illustrate the manner of limiting the upward movement of the securing bar.

Similar reference numerals indicate similar parts in the several views.

Referring to the drawings numeral 1 designates a door and 2 the floor of a room or passage entrance into which is effected through the door. To secure the door against forcible entry I provide a bar 3 of sufficient length for the purpose and which in practice may be made of one-half inch iron. The lower end of the bar is stepped into a socket 4 secured in an opening in the floor and constituting an abutment of sufficient strength to resist the thrust of the bar. The socket 4 is so placed that when the bar is in position it will rest against the door in a plane at an acute angle to the plane of the door for the purpose more fully described hereinafter.

The upper end of bar 3 engages the bolt of a suitable lock sufficient of the parts of which are illustrated to enable the invention to be understood. The bolt and the mechanism by which it is immediately operated are inclosed within a casing secured upon the inner side of the door, said casing comprising a base 5 and cover plates 6 and 7 adapted to be secured to each other and to the door by screws. The covers 6 and 7 are of such width as to leave between them a channel or transverse passage 8. Cast integral with base 5 or secured thereto under the cover 7 is a block 9 constituting an abutment against which the upper end of the bar rests when in position to secure the door. To move the bar into and out of locking position I provide a bolt 10 adapted to slide on a rib 11 of the base 5. This bolt is formed with two laterally projecting walls 12 and 13 spaced sufficiently far apart as not to obstruct the channel between the covers 6 and 7 when the bolt is in its extreme positions. The upper end of the bar is adapted to rest between the walls 12 and 13 so as to be moved in one direction or the other when the bolt is moved.

So far as concerns the means for moving the bolt I, may employ any suitable form of lock mechanism, as, for example, a cylinder lock in which the cylinder is unlocked by simply thrusting the key into it, and the bolt unlocked by turning the cylinder with the key. I have not deemed it necessary to illustrate the cylinder as its construction and operation are well known. Attached to the end of the cylinder through a slotted head 15 is a disk 16 having on its face a crank pin 17. This pin is adapted, when the disk 16 is turned, to enter a transverse slot 18 cut into the base of the bolt, and by bearing on one or the other of the walls of said slot to throw the bolt in the direction desired.

Assuming the bolt to be in open position shown in Fig. 6, a movement of pin 17 against the left-hand wall of slot 18 will move bar 3 to the left carrying its upper end against the under side of the block or abutment 9, as indicated in Fig. 7, while its lower end remains seated in socket 4. At the limit of its outward movement the bolt will be maintained in position thus preventing reverse movement of bar 3. In that position of the bar its upper end abuts firmly against block 9 and is immovably held between the two walls 12 and 13 of the bolt effectually resisting any efforts to open the door from the opposite side. When the bolt is retracted by the reverse movement of disk 16 the bar will be returned to the position indicated in Fig. 2. The door may then be opened and as it swings inwardly the bar will move upwardly across the channel 8, its lower end remaining seated in socket 4. The extent of the opening movement of the door will depend upon the

length of the bar and the angle at which it is set relatively to the door. In practice I have made the bar from forty to forty-six inches in length which permits the door to be opened about two feet without lifting the bar from its socket.

To permit of the full opening movement of the door when the bar is in position I provide means for lifting the latter consisting of beveled plates 19 which may be conveniently formed by bending a piece of sheet metal into U-shape as indicated in Fig. 5, and securing the same to the inner side of the door in such position that when the door is swung open a predetermined distance said plates will engage the projecting ends of a pin 20 set into bar 3. The beveled plates 19 are formed with horizontal portions 21 along their upper edges upon which the pin 20 is adapted to rest, there being a shoulder 22 between the inclined and horizontal portions over which the pin passes. The angle at which the bar 3 is placed is such that when the door is swung inwardly the pin 20 will lie in the path of the plates 19 and as the latter engage the pin the bar 3 will be lifted form the floor socket. To insure a sufficient lifting movement to enable the pin 20 to ride over the shoulder 22 and to come to rest on the horizontal portions 21, I provide a block 23 pivotally mounted on a stud 24 in the floor socket. Block 23 is recessed on one side, as indicated in Figs. 4 and 5, to accommodate a spring 25 which holds it against the lower side of bar 3. A pin 26 carried by block 23 prevents the overthrow of the latter when the bar is raised entirely away from the socket. After the beveled plates 19 engage pin 20, and as the inward movement of the door continues, the block 24 will be rotated to present an obstruction or resistance against which the bar 3 presses, the parts being so constructed that pin 20 will ride over shoulder 22 onto the horizontal portions 21. When that occurs the bar will be free of block 23 and the latter will drop back to its normal position. The door securing bar 3 will then be in the position indicated in Fig. 3 where it may remain until it becomes necessary to secure the door when it may be easily dropped into position by raising it from the beveled plates 19. By the means described a convenient storage place is provided for the bar. To prevent the bar from falling forward after it has been raised from the floor socket a curved guide plate 27 is secured to the cover plates 6 and 7 in such manner as to span the channel 8 as clearly indicated in Figs. 7 and 8.

Across the upper end of the channel or passage-way 8 is placed a wedge-shaped block 28 having a rounded surface, the function of said block being to prevent the bar from contacting with the door when the latter is swung open. For the same purpose the upper end 3′ of the bar is curved or bent upwardly as indicated in Figs. 1 and 3.

With a device of this character it is desirable that while holding the door against forcible entry it may at times be opened a very slight distance, as is permissible by the use of a chain. For this purpose the curved guide 27 and the casing 5 above block 28 are formed with openings through which a pin 29 may be inserted so as to lie across the head of the channel to block the upward movement of bar 3, as indicated in Fig. 10. Normally the upper end of bar 3 is not above the plane of the under side of the abutment 9. This position enables the door to be opened an inch or two, depending upon the length of the channel, before the bar is stopped by the pin 29. Further inward movement of the door is, of course, prevented as long as the pin 29 is in position.

The type of lock illustrated is provided with a latch mechanism by which the bolt may be moved from the inner side of the door. The cylinder which actuates the disk 16 is so adjusted that the key can only be withdrawn when a full revolution of the disk has been made and when the pin is in the position indicated in Figs. 6 and 7. If the door has been locked from the outside it is possible to open it from the inside by the movement to the right of a pin 30 secured to the base of the bolt and projecting through a slot 31 in cover 6. A spring 32 surrounding said pin between the cover 6 and the base of the bolt tends to hold the latter to its seat. To effect a movement of the bolt by the latch the latter is raised a slight distance to permit the base of the bolt to ride over pin 17. This will effect the position of bar 3 in channel 8 when the door may be opened as heretofore described.

What I claim and desire to secure by Letters Patent is:—

1. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment secured to the door, means for moving said bar into and out of engagement with said latter abutment, and means for raising said bar out of engagement with the floor abutment and for holding it upon the door when the latter reaches a predetermined point in its inward movement.

2. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment secured to the door, means for moving said bar into and out of engagement with said latter abutment, and beveled surfaces secured to the door adapted to engage said bar to thereby lift it out of engagement with the floor abutment when the door reaches a predetermined point in its inward movement.

3. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment secured to the door, means for moving said bar into and out of engagement with said latter abutment, said bar being disposed in a vertical plane at an acute angle to the plane of the door, a pin projecting from said bar, and beveled surfaces secured to the door and adapted to engage said pin to thereby lift the bar out of engagement with the floor abutment when the door reaches a predetermined point in its inward movement.

4. A door securing means comprising a bar adapted to rest against the door, a floor socket in which said bar is stepped constituting an abutment to resist the thrust of the bar, an abutment secured to the door, means for moving said bar into and out of engagement with said latter abutment, means secured to the door for lifting the bar out of the floor socket when the door reaches a predetermined point in its inward movement, and a pivoted block secured in the floor socket adapted to bear against said bar as it is raised out of the socket.

5. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment secured to the door, a lock also secured to said door, said lock comprising a bolt with which said bar engages and cover plates so disposed as to provide a channel between them for the bar as the door is being opened or closed, and means for blocking said channel to limit the upward movement of the bar.

6. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment se-

cured to the door, a lock also secured to said door, said lock comprising a bolt with which said bar engages and cover plates so disposed as to provide a channel between them for the bar as the door is being opened or closed, means for blocking said channel to limit the upward movement of the bar, and a guide plate extending across said channel to prevent the bar from falling forward.

7. A door securing means comprising a bar adapted to rest against the door, an abutment on the floor against which the lower end of said bar is set, an abutment secured to the door, a lock also secured to said door said lock comprising a bolt with which said bar engages and a cover plate so disposed as to provide a channel for the bar as the door is being opened or closed, and a deflecting block at the upper end of said channel to prevent the bar from contacting with the door.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EMIEL R. FUCHS.

Witnesses:

ROBERT W. ASHLEY,

CHARLES S. JONES.