June 30, 1942. J. J. O'BRIEN ET AL 2,288,022

DOOR EMERGENCY LOCK

Filed Dec. 14, 1940

Fig. 1

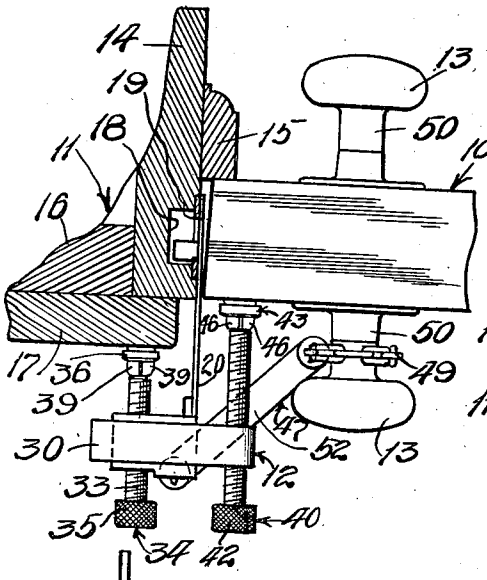


Fig. 2

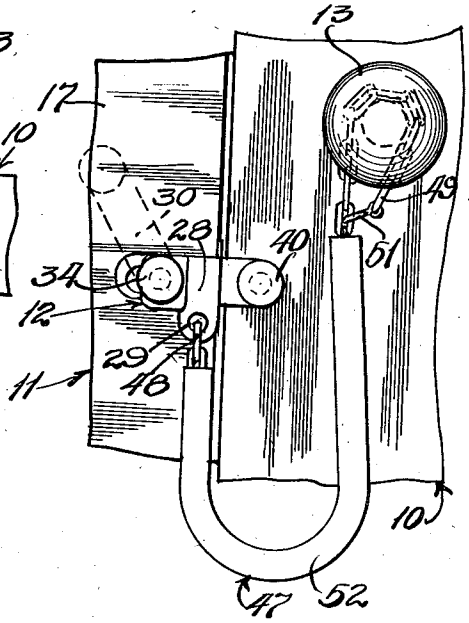


Fig. 3

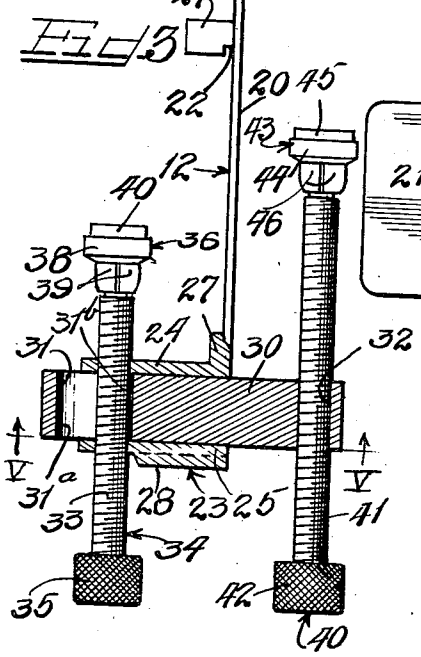


Fig. 4

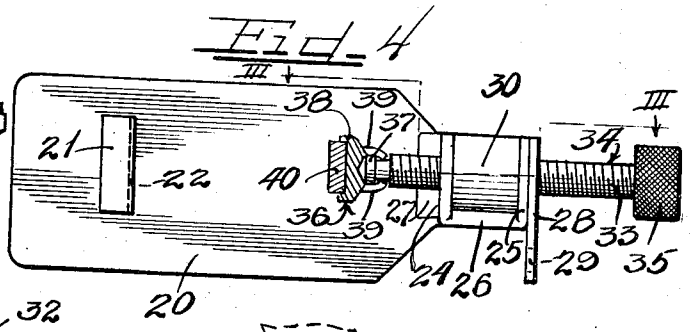
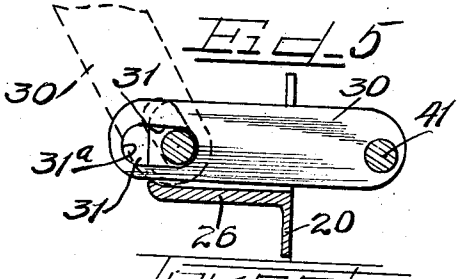


Fig. 5



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DOOR EMERGENCY LOCK

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9 Claims. (Cl. 292—291)

The present invention relates to a door lock and more particularly to a novel emergency lock for doors which may be readily adjusted into and out of locked position on the inside of a door with the aid of pivoted clamping means.

Emergency locks for doors as known heretofore are either constructed for positive attachment to a door or door jamb or are constructed of separable parts which are apt to be lost when handled frequently. Included among these emergency locks are the sliding bolt latches, chain latches, ratchet locks, hasps and the like. They either require the use of keys for opening them or special tools in the installation of their separate parts. The emergency lock of this invention is so constructed as to embody features of great simplicity and utility and to eliminate the usual objections to locks of similar character known heretofore.

It is, therefore, an object of the present invention to provide a unitary emergency lock mechanism of light, strong construction which readily lends itself to economical manufacture in production quantities.

Another object of this invention is the provision of a lock structure which may be connected to a standard door jamb without the aid of any tools.

A further object of this invention is the provision of a lock structure which is capable of being fastened to a door jamb without interfering with the opening or closing of the door.

A still further object of this invention is the provision of a lock structure which is applied in fastened and locked positions by hand manipulation only.

Another and still further object of the present invention is the provision of a door lock which, when manipulated to a locked position, holds the door tightly in a closed position to prevent and eliminate rattling and effectively seals the door against drafts.

Still another object of this invention is the provision of an emergency lock for doors which may be applied to a doorway construction irrespective of the direction in which the door opens or on which side the door is hinged.

A further object of this invention is the provision of an emergency lock construction for doors having a pivoted locking portion which is movable to an out-of-the-way position when not in use thereby permitting the door to be opened and closed without interference while the lock structure remains attached to the door jamb or the like.

A still further object of this invention is the provision of an emergency lock construction for doors which is controlled from the inside of a door to permit the door to be partially opened for an occupant on the inside to view the outside without permitting operation of the lock from the outside or entry through the doorway by an undesirable person.

A very important object of this invention is the provision of a light, portable and readily demountable emergency lock which can be carried on the person and used for locking hotel, office and other doors whenever desired.

The novel features believed to be characteristic of the present invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and manner of construction, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawing, in which:

Figure 1 is a fragmentary plan view, with parts in cross-section, illustrating an emergency door lock according to the principles of this invention as applied to a door and jamb construction for maintaining the door in locked position;

Figure 2 is a fragmentary front elevation view of the parts illustrated in Figure 1;

Figure 3 is a plan view, with parts in transverse cross-section, as seen when taken substantially along a plane indicated by the line III—III of Figure 4 and looking in the direction of the arrows;

Figure 4 is an enlarged elevational side view, with parts in vertical cross-section, of the lock structure of Figure 1 as seen when looking in a direction toward the right; and,

Figure 5 is an end view with parts in vertical cross-section, taken substantially along a plane indicated by the line V—V of Figure 3.

In Figures 1 and 2, there is illustrated a door 10 seated and maintained in locked relation with a jamb construction 11 by means of an emergency door lock 12 constructed in accordance with the teachings of this invention.

The door 10 is of any standard construction which includes knobs 13 or similar handles whereby the door is opened or closed either from the inside or outside thereof.

The jamb construction 11 generally comprises a jamb member 14, a door stop member 15 attached to a face of the jamb member, a door frame member 16, and a facing trim member 17. A latch recess 18 is provided in the face of the

jamb member 14 in spaced relation from the facing trim member 15. A keeper 19 is connected in the usual manner to the face of the jamb member 14 in registry with the latch recess 18.

The emergency lock construction 12 (Figure 3) is provided with a base plate 20 having a hooking flange member 21 adjacent one of its ends. This flange member is shown as being provided with a recess 22 at the base thereof and in flush parallel relation with a face of the plate 20. While the flange member 21 is illustrated as being an integral transverse extension of the plate 20 its purpose, to be described later, can be effected equally as well by bending the end of the plate into a hook of a size about that of the recess 22. At the other end of the plate 20, there is provided a U-shaped portion 23 having upstanding side walls 24 and 25 connected together by a web portion 26, as best shown in Figure 4. A reinforcing lug 27 is provided at the junction between the side wall 24 and the plate 20.

As best shown in Figures 2 and 4, a strap 28 is connected to the face of the side wall 25 as by welding or other suitable means and extends downwardly beyond the web 26 to provide a portion having an aperture 29 therethrough.

A locking arm 30 is sized to be slidingly seated within the U-shaped end 23 and is provided at one end with an elongated aperture 31 and at its other end with a threaded aperture 32.

Threaded apertures are provided in the side walls 24 and 25 to receive therethrough the threaded shank 33 of a holding screw 34. The shank 33 also passes through the elongated aperture 31 in the arm 30 to restrict sliding movement of the arm within the U-shaped portion 23. The holding screw 34 is provided at one end with a knurled knob 35 for manual operation and at its other end with a swiveled shoe 36. As best shown in Figure 4, the free end of the shank 33 is provided with a head collar 37. The shoe 36 has a recessed head 38 terminating in axially extending ears 39 which are curved to slidingly embrace the head collar 37. A resilient member 40 is seated within the recessed head 38 for engagement with a surface without marring or scratching of the surface. Any misalignment between the engaged surface and the axis of the threaded shank 33 is provided for by the swivel connection between the shoe 36 and the headed end of the threaded shank 33. Furthermore, the resilient member 40, when engaged with a surface, prevents the swiveled shoe 36 from rotating as pressure is applied thereto when the shank 33 is threaded inwardly. The sliding engagement between the head collar 37 and the embracing ears 39 permits rotation of the threaded shank 33 without rotation of the shoe 36.

A locking screw 40, constructed similarly to the holding screw 34, is provided with a much longer shank 41 which passes through and in threaded engagement with the aperture 32 in the arm 30. A manipulating knurled knob 42 is provided at one end of the shank 41 and at its other end there is provided a swiveled shoe 43. The shoe 43, like the shoe 36, has a recessed head 44 for receiving therein a resilient member 45. Ears 46 extend axially from the head 44 to form a socket for a head collar on the shank 41 in the same manner and for the same purpose as the ears 39 on the shoe 36.

The emergency lock construction 12, just described, is illustrated in Figures 1 and 2 in its applied position to a door jamb construction 11. The plate 20 is inserted between the door 10 and the jamb member 14 with its hooking flange member 21 being inserted within the latch recess 18 and the recess 22 being seated along an edge of the keeper 19 in hooked engagement therewith. In this position, the holding screw 34 is threaded inwardly until the resilient tip of the shoe 36 tightly engages against the face of the facing trim member 17. This effectively clamps the emergency lock construction 12 to a standard jamb construction 11. The locking arm 30 is then pulled to the right until the end 31*a* of the elongated slot 31 engages the threaded shank 33. When in this position, the locking arm 30 is free for pivotal rotation about the shank 33 in a manner as illustrated in dotted lines of Figure 5. The door 10 is then free for movement into and out of engagement with the door stop member 15.

To lock the door 10 in its closed position as illustrated in Figure 1, the locking arm 30 is rotated from its out-of-the-way position, illustrated in dotted lines in Figure 5, to the horizontal position in which it is seated along the length of the U-shaped portion 23 of the plate 20, as shown in full lines in Figure 5. The locking arm 30 is then pushed in a direction to the left until the end 31*b* of the elongated aperture abuts against the threaded shank 33. As the elongated apertured end of the arm 30 projects, in this position, beyond the U-shaped portion 23, the arm 30 is maintained in seated relation with the U-shaped portion against pivotal rotation about the shank 33. In this position, the locking screw 40 is threaded inwardly until its resiliently tipped shoe 43 tightly abuts against the door 40 to urge the latter in sealed and locked engagement with the door stop member 15.

The emergency lock construction 12 is unlocked by unscrewing the locking screw 40, sliding the locking arm to the right end and rotating it to an out-of-the-way position. The door 10 is then free for unrestricted opening and closing movement. With reference to Figure 5, it will be seen that the elongated aperture 31 is preferably offset from the longitudinal axis of the locking arm 30 to afford better pivotal and holding actions depending on the position of the locking arm. As the aperture 31 is closer to the bottom edge of the arm 30 than to its top edge, the end of the arm coacts with the pivot shank 33 and the web portion 26 to limit the pivotal movement of the arm to less than 180°. These positions, illustrated in full and dotted lines in Figure 5, serve to make the arm 30 quickly available for use in operating the lock of this invention.

The emergency lock construction 12 of the present invention may be applied to either the left-hand or right-hand jamb member depending on whether the door opens to the left or to the right. As illustrated in Figure 1, the lock construction is shown as being applied to a jamb member on the left-hand side of the doorway. If applied to a jamb member on the opposite side of the doorway, the arm 30 will rotate downwardly instead of in an upward direction as illustrated in Figure 5. Inasmuch as the arm 30 is movable to a non-rotatable position, it will remain horizontal whenever the door 10 is desired to be locked. However, when the arm is on a right-hand jamb and is moved to a position in which it rotates about the shank 33, the weight of the arm will swing it in a downward direction to an out-of-the-way position for permitting the

door to freely swing into and out of closed position.

While the holding and locking members have been described as being screws, any members which exert a clamping action against the facing trim member 17 and the door 10 may be used equally as well.

It will be apparent from the foregoing that the lock-screw 40 may be threaded outwardly to permit the door 10 to be opened sufficiently for an occupant of the room to view the outside without permitting entrance of a person through the doorway. If it is desired that the door open farther than the lock will permit without entrance from the outside by an undesirable person, a chain latch such as 47 may be provided. As best shown in Figure 2, the chain latch 47 comprises a length of chain, one end link 48 of which is connected to the strap 28 through the aperture 29 therethrough. The other end of the chain is provided with a loop 49 to be looped around the neck 50 of the door knob 13. An end link 51 is connected to an intermediate link of the chain 47 to provide the loop 49. It is preferred that this connection be of a suitable latch type so that the loop may be fastened or unfastened at will. If, however, the loop 49 is formed of a permanent nature, it is provided of sufficient size to be inserted over the knob 13 into engagement with the neck 50 thereof. A sheath or covering 52 encloses the length of chain between the loop 49 and the connecting end link 48 in order to eliminate marring or scratching of the facing trim member 17 and the door 10 during movements of the chain latch 47. The sheath or covering 52 may be of any suitable material such as rubber, heavy cloth or the like.

When the emergency lock construction 12 is in an unlocked and out-of-the-way position as illustrated in dotted lines of Figure 2, the chain latch 47 will permit the door 10 to be opened inwardly the length of the chain a distance insufficient for entrance into the room by an undesirable person.

It will be apparent from the foregoing description that an emergency lock of unitary, lightweight, strong and economical construction has been provided herein which is easily transported on the person, positively locks and seals a door and is readily mounted or detached without the aid of any tools.

While a particular embodiment only of this invention has been illustrated, it will, of course, be understood that the invention should not be limited thereto, since many modifications may be made, and therefore, it is contemplated by the appended claims to cover all such modifications as fall within the true spirit and scope of the present invention, the invention being highly desirable for other and various closures in addition to doors specifically as such.

We claim as our invention:

1. A readily demountable closure lock for a door comprising a plate insertable between the door and its closure jamb, a hook flange at one end of said plate for insertion into a recess and hooking engagement with an edge of a keeper in said jamb, threaded means carried by said plate and adjustable for engagement with the face of said jamb and cooperating with said hook flange for detachably fixing said plate on the jamb, an arm pivotally carried at one end by said threaded means, an additional threaded means carried by and at the other end of said arm, said arm being swingable into and out of the path of movement of said door, said additional threaded means being adjustable for engagement with said door for tightly locking the latter against said jamb.

2. A readily demountable closure lock for a swinging door comprising a flat plate insertable between the door and its closure jamb, a hook flange at one end of said plate for insertion into a recess and hooking engagement with an edge of a keeper in said jamb, a U-shaped portion on the other end of said plate, an arm slidably retained within said U-shaped portion, an elongated slot in one end of said arm, an adjustable member threadedly connected to said U-shaped portion and passing through said elongated slot, an adjustable shoe on one end of said adjustable member, said adjustable member being threadedly movable into engagement with the face of said door jamb and coacting with said hook flange for detachably fixing said plate on the jamb, a second adjustable member threadedly passing through the other end of said arm, and an adjustable shoe on the end of said second member for engaging said door when closed against jamb, said elongated slot when engaged at one of its ends by said first-mentioned adjustable member coacting with said U-shaped portion to permit said arm to be pivoted about said adjustable member and when engaged at its other end coacting with said U-shaped portion for maintaining said arm in seated relation with said U-shaped portion whereby said second adjustable member is movable into and out of engagement for locking and unlocking said door.

3. A demountable device for restricting movement of a closure member having releasable latch engagement with a doorway in which it is swingably mounted comprising an adjustable clamp for mounting said device, including means for engaging in the latch recess of a doorway, an adjustable member, means on said clamp for slidably carrying said adjustable member therein, means pivotally connecting said adjustable member to said clamp, and an additional adjustable clamp carried by said adjustable member and swingable therewith into and out of the path of movement of said closure member.

4. A demountable device for restricting movement of a closure member having releasable latch engagement with a doorway in which it is swingably mounted comprising an adjustable clamp for mounting said device, including means for engaging in the latch recess of a doorway an adjustable member, transversely extending seating means on said clamp for slidably carrying said adjustable member therein, means in said seating means for restricting the sliding movement of said adjustable member therein and for pivotally connecting said adjustable member thereto, and an additional adjustable clamp carried by said adjustable member and swingable therewith about said pivotal connecting means into and out of the path of movement of said closure member.

5. A demountable device for restricting movement of a closure member comprising a member insertable between said closure member and a jamb, hook means at one end of said member and engageable within a recess of said jamb, a seating member at the other end of said first mentioned member, a clamping member carried by said seating member and adjustable relative thereto for engaging said jamb, a member slidably seated within said seating member and embracing said clamping member for rotative and limited endwise movements relative thereto, and an additional clamping member carried by said

slidable member and rotating therewith about said first clamping member into and out of the path of movement of said closure member.

6. A demountable device for restricting movement of a closure member comprising a plate insertable between said closure member and a jamb, a hook at one end of said plate for engagement with a keeper on said jamb, a U-shaped seat at the other end of said plate, an arm slidably seated in said seat, an adjustable clamping member pasing through said seat and said arm for limiting the sliding movement of said arm in said seat, said arm being swingable on said clamping member, and an additional adjustable clamping member on said arm and slidable swingable therewith into and out of the path of movement of said closure member.

7. A demountable device for locking a movable closure comprising a plate member having one end arranged for connecton to a jamb for said closure, a U-shaped flange extending laterally from the other end of said plate member and having spaced side walls and a connecting web. an arm sized for slidably seating in said U-shaped flange, a longitudinally extending elongated slot in said arm adjacent one end thereof and offset laterally from the longitudinal axis of said arm, and a pivot passing through the side walls of said U-shaped flange and the elongated slot of said arm, said arm being slidable in said U-shaped flange for the length of said elongated slot, said arm also being eccentrically rotatable about said pivot when the latter engages one end of said elongated slot whereby a portion of the end of said arm abuts the flange web for limiting the rotation of said arm about said pivot.

8. A demountable device for locking a movable closure comprising a plate member insertible between said closure and its closure jamb, a flange extending laterally from one end of said plate member for insertion into a keeper recess in said jamb, a U-shaped flange extending laterally from the other end of said plate member and having spaced side walls and a connecting web, an arm sized for slidably seating on said web and betwen said side walls, an elongated slot adjacent one end of said arm having its longitudinal axis laterally spaced from the longitudinal axis of said arm, and a pivot passing through said spaced side walls of the U-shaped flange and elongated slot of said arm for limiting the sliding movements of said arm, said arm, when slidably moved in one direction for engagement between the pivot and the end of the elongated slot remote from said one end of the arm, coacting with said pivot whereby said one end of the arm abuts said web for holding the arm against rotation and, when slidably moved in the other direction for engagement between the pivot and the end of the elongated slot adjacent said one end of the arm, coacting with said pivot for eccentric rotation whereby a portion of the arm abuts said web for limiting rotation of the arm to less than 180°.

9. In a demountable device for restricting movement of a closure member of the character having a flexible member connected thereto with a loop end for application to a knob on said closure member, the improvements comprising a plate insertable between said closure member and a jamb, a laterally disposed hook at one end of said plate for engagement with a keeper on said jamb, a U-shaped flange at the other end of said plate extending in the same direction as said hook, an arm having an elongated slot at one end slidably seated in said flange, a threaded clamp extending through said flange and the slot of said arm for engaging said jamb, and an additional threaded clamp extending through said arm in spaced relation from the slot therein and being slidable and swingable with said arm into and out of the path of movement of said closure member.

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