June 8, 1926.

1,587,771

A. C. GODDARD

ADJUSTABLE LOCK SUPPORT

Filed Oct. 25, 1922

2 Sheets-Sheet 1

Fig. 1.

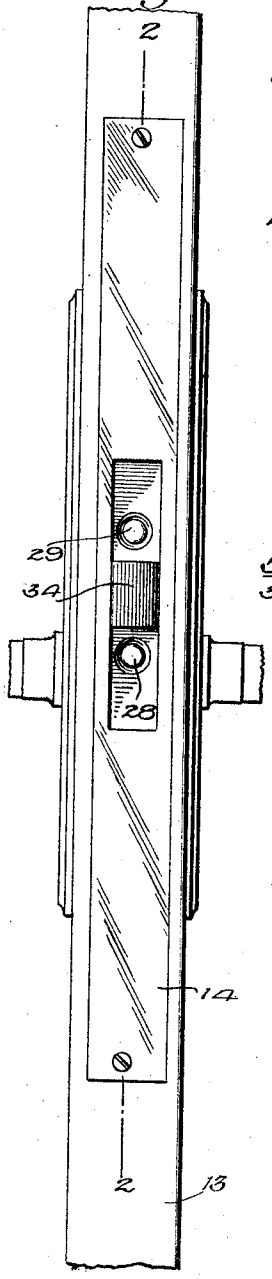


Fig. 2.

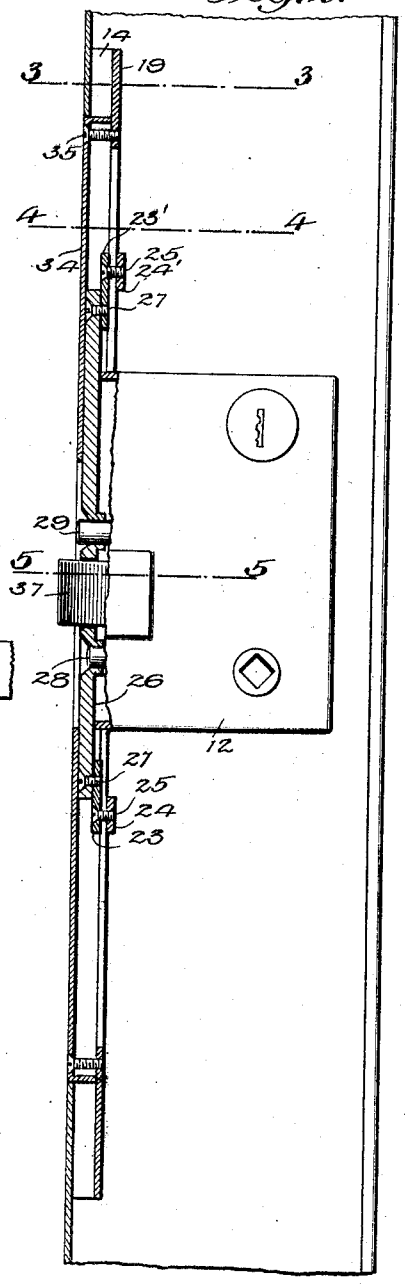


Fig. 3.

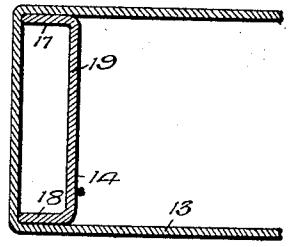


Fig. 4.

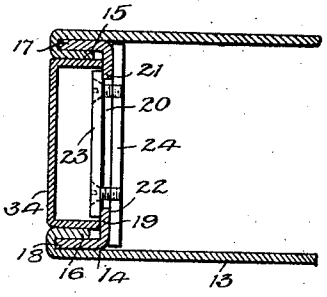
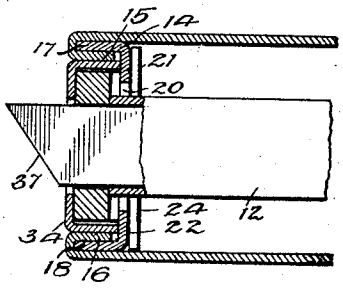


Fig. 5.



WITNESSES

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2 Sheets-Sheet 2

Fig. 6.

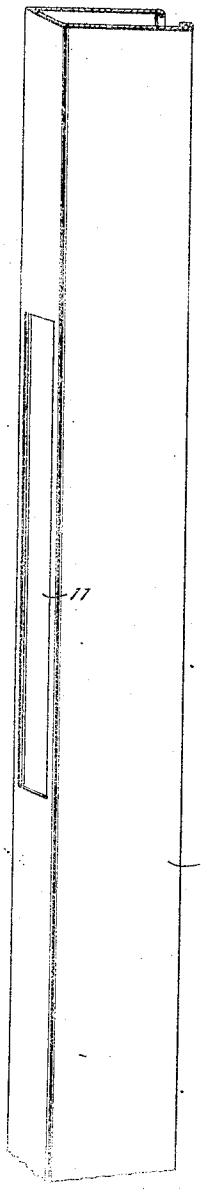


Fig. 7.

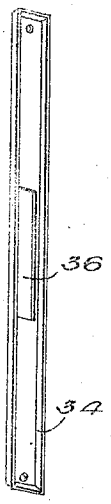


Fig. 8.

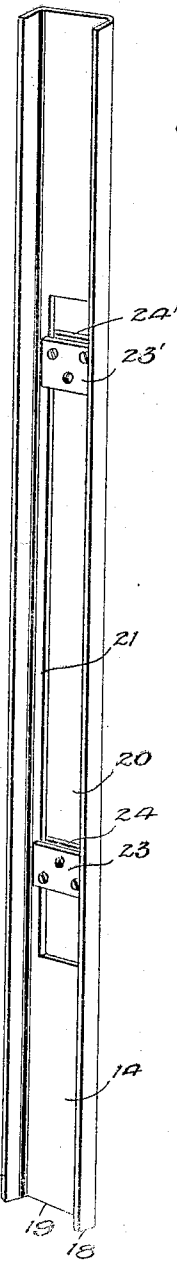
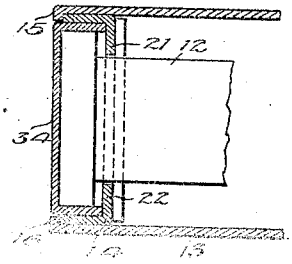


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE-LOCK SUPPORT.

Application filed October 25, 1922. Serial No. 596,858.

This invention relates to hollow or metallic covered doors and particularly to means for mounting any size or kind of lock in a standard cut out in the door.

The object of the invention is to provide strong substantial practical means whereby all the various sizes and kinds of locks furnished by the different hardware manufacturers can be mounted in one standard lock support, eliminating the necessity of special tools to blank out for each size and kind of lock.

Another object of the invention is to provide a particular mounting for a lock in connection with metal doors whereby the lock may be adjusted so that the latch bolt will register properly with the keeper on the door jamb.

A still further object of the invention is to provide an adjustable support for a lock which may slide vertically and then be clamped rigidly in place.

A further object of the invention is to provide a mounting for a lock for metal doors whereby the lock may be set at different heights to accommodate the door knobs and keeper and at the same time present a smooth surface on the edge of the door.

A still further object of the invention is a lock mounting that will make it possible to build doors for stock and then use any size or style of lock without the use of special tools for the fitting and installing of same.

In the accompanying drawings:—

Figure 1 is a fragmentary edge view of a door with a lock and mounting embodying the invention applied thereto.

Figure 2 is a sectional view through Figure 1 approximately on line 2—2.

Figure 3 is an enlarged transverse sectional view through Figure 2 on line 3—3.

Figure 4 is a transverse sectional view through Figure 2 on an enlarged scale, the same being taken approximately on line 4—4.

Figure 5 is an enlarged transverse sectional view through Figure 2 approximately on line 5—5.

Figure 6 is a perspective view of part of the front stile of the door with an opening for receiving certain parts of the lock support shown in Figure 2.

Figure 7 is a inverted perspective view of a covering plate for filling the opening shown in Figure 6.

Figure 8 is an inverted perspective view of a lock supporting member.

Figure 9 is a sectional view similar to Figure 4 but showing a modified construction.

In the accompanying drawings, Figure 2 shows the knob shaft opening at the lower part of the lock but in some locks it is at the upper part and others substantially centrally. If the knob is to be placed at the same height from the floor, the various locks must be adjusted in the door to permit this action. Heretofore, the manufacturer required from the architect the name of the lock to be used in order that he might provide a proper opening in the lock stile for receiving that particular lock.

In the present invention, a large opening 11 is made in the lock stile as shown in Figure 6 which admits of the lock being adjusted upwardly or downwardly to a large extent. In order to provide a proper support for the lock 12 and to clamp the same adjustably in the desired position, several members have been provided which co-act with the lock and with the locking stile 13. One of these members is a supporting bar 14 which is U-shaped in cross section as indicated in Figures 3 and 8. This bar may be welded or secured in position in any desired manner. Preferably, it is held in place by having the material from the opening 11 formed into inwardly extending clamping flanges 15 and 16 (Figure 5) pressed tightly against the upstanding walls 17 and 18 of the bar whereupon the bar is locked in place with the bottom 19 spaced from the front edge of the stile. The bottom 19 is provided with a slot 20 of substantially the same length as the slot 11 whereby clamping rails 21 and 22 are presented to the respective clamping plates 23 and 24 arranged below the lock 12 and the clamping plates 23′ and 24′ arranged above the lock 12. Suitable clamping screws 25 clamp these plates firmly against the rails 21 and 22 so that these plates are locked in the desired position. The lock 12 is provided with a front or face plate 26 which is usually in locks of this kind, said front or face plate being pro-

vided with a suitable aperture near each end for receiving the respective clamping screws 27, said clamping screws being threaded into the respective plates 23 and 23′ whereby the plate 26 may be readily clamped to the plates 23 and 23′ and thereby cause the lock 12 to be readily fastened in the desired position.

In case it should be desired to raise or lower the lock, the respective screws 25 are loosened and the parts slid upwardly or downwardly the desired distance and the screws again tightened. The lock 12 is provided with finger operated buttons 28 and 29 for throwing on and off the night latch, said buttons and night latch being of any usual or preferred structure. Superimposed on the trimming plate 26 is a filling plate 34 which is U-shaped in cross section both longitudinally and transversely, said filling plate snugly fitting in the opening 11 and completely filling the same. Preferably, this plate is forced inwardly until the surface thereof is flush with the surface of the edge of the stile 13, as indicated in Figure 2 and when this occurs the depending walls of the filling plate are pressing against the bottom 19 of bar 14. Preferably, a single screw 35 is arranged at each end of the plate 34 and is threaded into the bar 14 for clamping the plate 34 in position.

It will be noted that the plate 34 is provided with a comparatively small slot or opening 36 for accommodating the buttons 28 and 29 and the bolt 37 of lock 12. If the lock 12 should be raised or lowered to a large extent and thereby cause one of the buttons 28 or 29 to be unexposed through the opening 36, said opening could be enlarged by a workman in a very short time.

In Figure 9 a modified construction is shown which is slightly different from that illustrated in Figure 4. In Figures 4 and 5 the flanges 15 and 16 are turned inwardly and interlock with the flanges on the bar 14 while in the form shown in Figure 9, the flanges 15′ and 16′ are provided which do not turn inwardly but merely act as shoulders for the flanges of bar 14 to which they may be secured if desired by spot welding. This construction is particularly desirable where the lock is comparatively thick.

What I claim is:—

1. The combination with the locking stile of a hollow metal door, said stile being formed with a slot therein, a support within said stile, and means for attaching a lock thereto within the stile with the locking bolt projectable through the said slot in the stile, said means being adjustable along the support to position the lock at variable heights upon the door as to position the bolt at any desired height.

2. In a door construction, a stile having an aperture therein, spaced rails supported within and by said stile and extending in directions lengthwise thereof, lock supporting means carried by said rails and adjustable therealong to support a lock at any desired position along said aperture and to receive and mount locks of different dimensions.

3. A support for locks for metal doors, comprising a substantially U-shaped bar adapted to be connected with the locking stile of the door, a plate provided with means whereby the same is connected with a lock, and a clamping structure associated with said plate adapted to clamp said bar at different positions intermediate its ends for supporting the lock at any desired height on said stile.

4. A lock support for metal doors, comprising a supporting bar secured to the stile of the door adjacent the opening in the stile through which the bolt of the lock is adapted to pass, and means for clamping a lock to said bar, said means being adjustable in directions lengthwise of the bar to position the lock at different locations vertically along the stile opening, thereby causing the bolt of the lock to project at desired points through the opening in said stile.

5. A lock support for metal doors, comprising a substantially U-shaped supporting bar secured to the locking stile of the door, said bar having a slot arranged therein and extending longitudinally thereof, a pair of clamping plates extending across said slot and clamping said bar, and means for securing a lock to one of said plates, said clamping plates being capable of gripping the bar at different points intermediate its length for supporting the lock in different positions relative to the locking stile of the door.

6. The combination with a locking stile of a metal door, said locking stile having a slot therein on the edge, of lock supporting means, said lock supporting means comprising a substantially U-shaped bar connected to said stile and extending across said opening, said bar having a slot, a pair of clamping plates, a screw for acting on said clamping plates for causing the same to clamp said bar, and means for securing the casing of a lock to one of said plates in such a manner that the bolt of the lock will project through the opening of said stile, and a covering plate for said opening provided with a slot for accommodating said bolt.

7. A support for connecting a lock to the locking stile of a metal door, said metal door being provided with an elongated slot in its edge, a substantially U-shaped bar extending across said slot, said bar being provided with a slot for almost its entire length, said slot being of less width than the bar whereby runners are formed thereon, a pair of clamping plates arranged to en-

gage said bar near each end, means for clamping said clamping plates in different positions relative to the bar, and clamping screws for connecting a lock casing to certain of said plates whereby the bolt of the lock may extend at any desired point through the opening in said stile, and a covering plate closing said opening, said covering plate being formed with a restricted opening of a size to accommodate said bolt.

8. In a lock support for metal doors, the combination with the lock stile of a metal door provided with pressed out portions whereby a longitudinal slot is formed in the edge of the stile, and a pair of clamping flanges produced by a supporting bar substantially U-shaped in cross section, said bar being clamped in position by said flanges, said bar also having a longitudinally positioned slot therein, a plurality of pairs of clamping plates adapted to clamp said bar at different positions along its length, and means for securing the casing of the lock to certain of said clamping plates, the adjustability of said clamping plates permitting the lock to be positioned at any desired point within the limits of the supporting bar.

9. In a door construction, a hollow lock mounting stile having an aperture therein, means for mounting a lock within the stile for adjustment to variable positions along the length of the stile with the locking element of the lock projectable for locking purposes through the aperture, and a finish member secured over and closing the stile aperture and having itself a slot for the passage of the locking element.

10. In a door construction, a hollow lock mounting stile having an aperture therein, means for mounting a lock within the stile for adjustment to variable positions along the length of the stile with the locking element of the lock projectable for locking purposes through the aperture, and a finish member secured over and closing the stile aperture and having itself a slot for the passage of the locking element, the slot in said finish member having a length less than the exposed lock edge surface but sufficiently long to permit of a limited adjustment of the lock to different heights.

11. In a door construction, a metal door having a blanked out section in one edge of the locking stile thereof, means for supporting a lock in said stile so that its locking element may be projected through said blanked out section, and a finish member covering the blanked-out section and having a slot through which the locking element may be projected.

12. In a door construction, a hollow stile having a lock slot therein, and a lock mounted within the stile for adjustment along the length of the same with its locking bolt projecting through said slot, whereby the bolt will be effective in the various adjusted positions of the lock.

13. In a device of the character described, the combination with the locking stile of a metal door formed with an opening in the edge thereof, of a lock support secured to said stile and extending across said opening, and a trimming or covering templet substantially filling said opening, said templet having an opening opposite the lock carried by said lock support to permit of the operation therethrough of the locking element of the lock carried by said support.

14. In a lock support for the lock stile of a metal door, a substantially U-shaped supporting bar formed with a centrally arranged cut extending longitudinally thereof and leaving parallel flanges or shoulders, and means adapted to engage said flanges or shoulders for securing the lock to said support at any desired point along the support.

15. In a device of the character described, the combination with the locking stile of a metal door, said locking stile having an opening in the edge thereof, of a supporting bar substantially U-shape in cross section secured to said stile so as to extend across said opening, said supporting bar having a longitudinally arranged slot therein, adjustable clamping members slidingly mounted on said bar for adjustably supporting a lock adjacent the opening in the stile.

16. In a device of the character described, the combination with the locking stile of a metal door, said stile having an opening in one edge, of a supporting bar secured to said stile, said bar having a pair of facing shoulders, a plurality of clips co-acting with said flanges and adapted to support a lock opposite the opening of the door, and means for tightly clamping said clips to said flanges at any point between the ends of said supporting bar.

17. In a device of the character described, the combination with the locking stile of a metal door, said stile having an opening in the edge, a supporting bar secured to said stile and extending across the opening, a plurality of clips adjustably mounted on said supporting bar, and means removably secured to said clips for clamping the front of the lock to said clips so that the bolt and lock may project through the opening in the stile.

18. In a device of the character described, the combination with a locking stile of a metal door, said stile having an opening in the edge thereof, of means for supporting a lock in the stile so that a bolt will project through said opening, and a covering plate filling the opening in the stile, said covering plate being provided with depending flanges fitting against the stile, and an aperture arranged opposite part of the lock.

19. In a door construction, a stile having an aperture therein, a member extending across the aperture and having a slot running in a direction lengthwise of the stile, a lock in said stile and connecting means between the lock and member for supporting the lock thereon and guiding it along the slot into different positions along the length of the stile.

20. In a door construction, a stile having an aperture therein, a member extending across the aperture and having a slot running in a direction lengthwise of the stile, a lock in said stile and connecting means between the lock and member for supporting the lock thereon and guiding it along the slot into different positions along the length of the stile, said connecting means being operable to clamp the lock, in its different adjusted positions, to the member.

21. A lock support for metal doors, comprising a supporting member secured to the locking stile of the door, and having a slot extending in a direction lengthwise of the stile, clamping plates extending across the slot upon one face of the member, a lock upon the other face of the member, means for securing the lock to the plates and clamping both to the member, the securing means permitting adjustment of the plates and lock together upon said member along the slot into different positions relative to the stile of the door.

22. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, said channel having an aperture in its bottom face, means for securing a lock to said channel with its locking element projecting through the apertures of the channel and stile and a channel shaped finish member fitting within and facing oppositely to the first channel and having an aperture through which the locking element may project.

23. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, said channel having an aperture in its bottom face, means for securing a lock to said channel with its locking element projecting through the apertures of the channel and stile, and a channel shaped finish member fitting within and facing oppositely to the first channel and having an aperture through which the locking element may project, all of said apertures being elongated in the direction of the length of the stile to permit of a limited adjustment of the lock along the stile.

24. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, the stile having its edges of the aperture therein flanged into the channel, said channel having an aperture in its bottom face, means for securing a lock to said channel with its locking element projecting through the apertures of the channel and stile, and a channel shaped finish member fitting within and facing oppositely to the first channel and having an aperture through which the locking element may project, all of said apertures being elongated in the direction of the length of the stile to permit of a limited adjustment of the lock along the stile.

25. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, said channel having an aperture in its bottom face extending in a direction lengthwise of the stile, a lock passing through and adjustable along the aperture in the channel and having a face plate fitting within the channel against the bottom wall thereof and means for clamping the face plate to the channel in any of its adjusted positions.

26. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, said channel having an aperture in its bottom face extending in a direction lengthwise of the stile, a lock passing through and adjustable along the aperture in the channel and having a face plate fitting within the channel against the bottom wall thereof, means for clamping the face plate to the channel in any of its adjusted positions, and a finish member closing the aperture in the stile and having therein an aperture for the passage of the locking element of the lock.

27. In a door construction, a door having a stile with an aperture in the door edge face of the stile, a U-shaped channel secured to and extending lengthwise of the stile across the aperture with its open channel toward the aperture and its side arms abutting the inner surfaces of the stile faces, said channel having an aperture in its bottom face extending in a direction lengthwise of the stile, a lock passing through and ad-

justable along the aperture in the channel and having a face plate fitting within the channel against the bottom wall thereof, means for clamping the face plate to the channel in any of its adjusted positions, and a finish member closing the aperture in the stile and having therein an aperture for the passage of the locking element of the lock, the aperture in the finish member having a length permitting a limited adjustment of the lock upon the channel.

28. In a door construction, a stile having an aperture therein, a member extending across the aperture and provided with a longitudinal slot, a lock in said stile, means for connecting said lock to said member, at any position along the slot, said connecting means being adjustable to accommodate any of a plurality of locks of different lengths.

29. In a door construction, a stile having an aperture therein, a member extending across the aperture and provided with a longitudinal slot, a lock in said stile, means at each end of the lock for connecting it to said member at any position along the slot, the connecting means at each end being separately adjustable along the member whereby different lengths of locks may be connected to the member.

30. In a door construction, a stile having an aperture therein, a member extending across the aperture, a lock in the stile, and means for connecting said lock to the member with the locking element of the lock projectable through said aperture, said connecting means being relatively adjustable to accommodate any of a plurality of different size locks.

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