

Dec. 28, 1937.

H. MACHINIST

2,103,989

BAR LOCK

Filed Sept. 22, 1936

Fig. 1

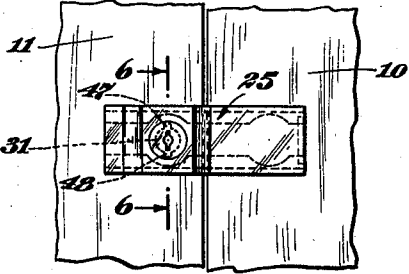


Fig. 3

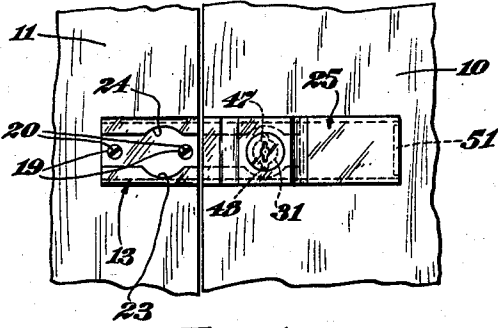


Fig. 2

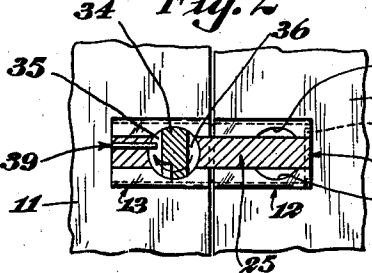


Fig. 4

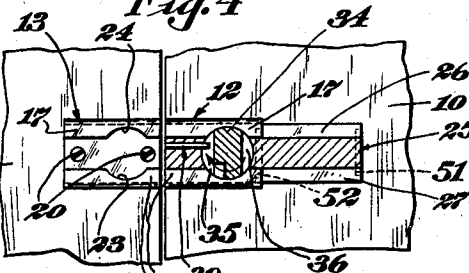


Fig. 5

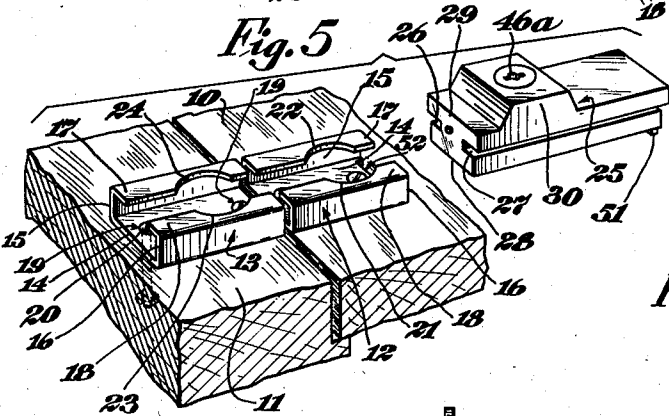


Fig. 8

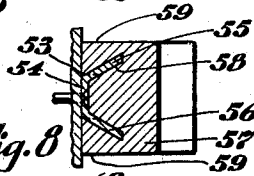


Fig. 9

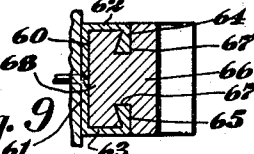


Fig. 10

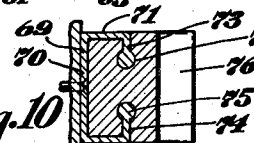


Fig. 11

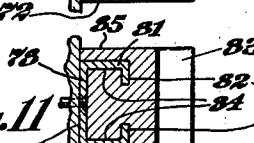


Fig. 6

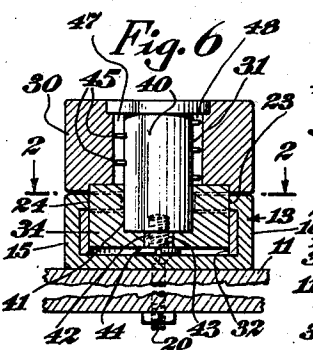
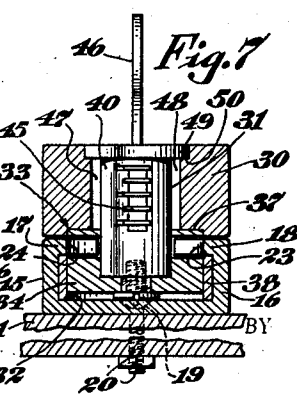


Fig. 7



INVENTOR,  
Harold Machinist,  
J. Basseches,  
HIS ATTORNEY.

## UNITED STATES PATENT OFFICE

2,103,989

## BAR LOCK

Harold Machinist, Sunnyside, Long Island, N. Y.,  
assignor to Dudley Lock Corporation, Chicago,  
Ill., a corporation of Illinois

Application September 22, 1936, Serial No. 101,934

## 9 Claims. (Cl. 70—129)

This invention relates to locks, and more particularly, to locks which are arranged to be disposed on the exterior surface of doors or similar closures and to be secured flush with the exterior of such closures and their frame work.

It is the object of my invention to provide a locking device in the nature of a padlock which is capable of being secured to doors or similar closures, whereby the complementary portions and the fixtures applied to the door and its framework efficiently cooperate to provide the parts inaccessible to tampering, particularly with the securing means, such as screws, bolts or the like.

It is contemplated by my invention to provide a lock in the nature of a bar, cooperating with fixed means, in the nature of channels, rendering the attaching means for said channels inaccessible and invisible, whereby tampering with the parts is avoided.

Other objects of my invention reside in the provision of a locking device capable of being secured to all types of flush surface doors or similar closures which are simple and economical in construction and may be easily installed and operated.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, I make reference to the accompanying drawing, forming a part hereof, in which:

Figure 1 is a plan view of my construction, in the door locking position, as applied to a fragment of a door and frame;

Figure 2 is a section taken on the line 2—2 of Figure 6;

Figure 3 is a plan view of my device slid to the open door position and locked to the door channel;

Figure 4 is a section similar to that of Figure 2, with the mechanism slid to the open door position and locked to the door channel, as shown in Figure 3;

Figure 5 is an exploded perspective view of the lock and associated elements, including a fragment of a door and frame;

Figure 6 is a section taken on the line 6—6 of Figure 1;

Figure 7 is a section similar to Figure 6, showing the slidable position of the lock bar, with the key for operating the actuating mechanism in position;

Figures 8 to 11 illustrate different embodiments showing the various configurations of channels and cooperating lock bars.

Making reference to the drawing, it is contemplated by my invention to provide a lock-

ing device which may be applied to the exterior surface 10 of a door, or similar closure, and its surrounding frame 11, in the form of substantially twin channels 12 and 13, applied to the doors and frame, respectively.

In one embodiment of my invention, illustrated in Figures 1 to 7, the channels 12 and 13 are generally U-shaped in cross section, providing a lower branch 14, upstanding branches 15 and 16, and inwardly directed flanges 17 and 18.

Thru the base branch 14, there are formed a plurality of orifices 19, suitably countersunk to receive fastening elements 20 which may be screws, bolts, rivets, or similar suitable attaching means.

The flanges 17 and 18 of the channels 12 and 13 are each provided with substantially semi-circular cutouts serving as stops and are identified by the numerals 21, 22, on the channel 12, and 23, 24 on the channel 13. The function of these cutouts or stops will appear more clearly as this description proceeds.

With the channels 12 and 13, of the character described, provided, they are affixed in alignment on the door or closure 10, and the frame 11, so as to provide a continuous channel through which the locking member hereinafter to be described may readily slide.

Cooperating with the channels 12 and 13 just described, there is provided a lock bar 25 which is generally rectangular in cross section and of a length sufficient to cover the channels 12 and 13, as will be more clearly apparent from an inspection of Figure 1.

The lock bar 25 is provided with longitudinal slots 26 and 27, arranged to receive the flanges 17 and 18, dividing the lock bar into a base of shorter width, adapted to be received within the confines of the channels 12 and 13, and a covering section 29, which corresponds to the exterior width of the channels 12 and 13, giving to the assembly as shown in Figure 1 the appearance of a solid block.

Intermediate the length of the lock bar 25, there is provided a lug 30, through which there is provided a transverse orifice 31, which terminates in an enlarged orifice 32, opening in the rear face of the base 28 of the lock bar 25. The enlarged orifice 32 extends from a point 33 immediately above the slots 26 and 27, to the rear face of the base section 28, already described, and in this orifice there is disposed a rotary bolt 34, of general cylindrical contour, which is provided with substantially transverse slots 35 and 36,

adapted to receive the flanges 17 and 18 between the flanges 37 and 38, formed by the slots 35 and 36, already described.

The cylindrical bolt 34 is maintained within the orifice 32 by a cross pin 39 (see Figures 2 and 4). This pin engages a peripheral groove in the cylindrical bolt (not shown) to permit rotation of the cylindrical bolt without, however, permitting displacement transversely of the lock bar 25.

With the rotary bolt 34 positioned as described, a key actuated mechanism 40 may be assembled therewith, and for this purpose the cylindrical bolt 34 is provided with an orifice 41 in alignment with the orifice 31. The orifice 41 terminates into a square orifice 42, adapted to receive the shank 43 of the key actuated mechanism 40, which is likewise provided with a square contour engaging the orifice 42.

A screw 44, having an enlarged head, is adapted to be received within a screw threaded orifice formed in the squared shank 43, thereby holding the key actuated mechanism 40 and the cylindrical bolt 34 together for rotation.

The key actuated mechanism 40 may comprise tumblers 45, which are directed laterally by the key 46, in a manner well understood, to project these tumblers into the slots 47 and 48, formed in the walls of the orifice 31. A flange 49, formed on the key actuated mechanism 40 is arranged to fit within the countersunk portion 50, to lie flush with the outer surface of the lug 30.

It will be understood that with the key 46 in position within the keyhole 46a, the tumblers 45 are withdrawn, to lie flush with the periphery of the key actuating mechanism 40, thereby permitting rotation of the key actuating mechanism 40 and the cylindrical bolt 34, carried by the same. Upon rotation of the cylindrical bolt 34 transversely of the slots 26 and 27 and withdrawal of the key 46, as shown in Figures 2, 4 and 6, the tumblers 45 will be projected within the grooves 47 and 48, preventing rotation of the key actuating mechanism 40 and the bolt 34 associated with the same.

Inversion of the key 46 will withdraw the tumblers 45 from engagement with the slots 47 and 48, and will again permit rotation of the cylindrical bolt 34.

It will be understood that by rotation of the cylindrical bolt 34, to align the slots 35 and 36 with the slots 26 and 27, as shown in Figure 7, the lock bar 25 may be slid in relation to the channels 12 and 13.

The lock bar 25, in the position just described, may be slid to engage only the channel 12, as shown in Figure 3, in which position insertion of the key 46 and a partial rotation through an angle of 90° will serve to engage the cylindrical bolt 34 with the keying cutouts 21 and 22 of the channel 12. This is more clearly shown in Figure 4.

For placing the lock bar 25 into locking position, the cylindrical bolt 34, through the medium of the key actuating mechanism 40, may be given a 90° rotation, which will permit the lock bar 25 to be slid into position engaging the channel 13, completely covering the same as shown in Figure 1, and upon a rotation of 90° the cylindrical bolt 34 is moved into engagement with the keying cutouts or stops 23, 24, of the channel 13.

The location of the lock bar 25 in the complete covering position shown in Figure 1 may be facilitated by providing the lock bar 25 with a lug

51, adapted to be received by the recess 52 formed in the channel 12. Thus, in sliding the lock bar 25 from the position shown in Figure 3 to the position shown in Figure 1, through the channel 12 and then to the channel 13, the lug 51 will engage the recess 52, to limit the sliding movement of the lock bar 25 to the covering position, at which point the cylindrical bolt may be rotated through 90° and the key 46 withdrawn.

In Figures 8 to 11, I have illustrated different embodiments of my invention, so far as the contour of the channels is concerned, and generally referred to in the first described embodiment, as the channels 12 and 13. Cross sections of the channels and lock bars to fit these channels, are shown in Figures 8 to 11.

In Figure 8, as illustrated, a channel 53, having a base 54, arranged to be affixed to the door and closure or frame by suitable fastening means, as screws, bolts or the like, is provided with divergent branches 55 and 56. The cooperating lock bar 57 is provided with complementary slots 58, adapted to receive the branches 55 and 56, thereby providing an apron portion 59, completely enveloping the channel 53. In this embodiment, the branches 55 and 56 may be provided with stops or keying cutouts of the same general character as described in connection with the embodiment illustrated in Figures 1 to 7, with other features substantially identical, with modification made to take care of the configuration of the channel 53 and the lock bar slots 58, into which the channel is arranged to be received for slidable engagement.

In Figure 9, I have illustrated a cross section of a channel 60, of general U-shaped configuration, in which the lower branch 61 is arranged to be affixed to either the door or frame, and is provided with branches 62 and 63, terminating into inwardly directed flanges 64 and 65, of dovetailed contour. In this construction, a lock bar 66 is provided with slots 67, and a base portion 68, to receive the flanges 64 and 65 and to enter the confines of the channel 60. This construction has particular novelty in that when the lock bar is in position, the branches 62 and 63 cannot be pried away from engagement with the slots 67, and permits the use of rather thin metal stock for forming the channel members. In all other members, the channel 60 and the lock bar 66 may employ the features of interlocking, as previously described.

In Figure 10, I have illustrated the cross section of a channel 69 of general U-shaped configuration, having a branch 70 adapted to lie flush with the jaw or frame, and includes upstanding branches 71 and 72, terminating into flanges 73 and 74, provided with a generally cylindrically shaped end 75. With this form of channel, a lock bar 76 is provided, which includes substantially cylindrical slots 77, adapted to receive the flanges 73 and 74. The embodiment illustrated in Figure 10 otherwise incorporates the features described in connection with Figure 9 for providing an interlocking connection between the branches 71 and 72 and the lock bar 76. In all other respects, the locking mechanism operated by the key actuating device in relation to stops or keying cutouts on the channels are substantially the same as previously described, with such modification as may be necessary by reason of the change in configuration of the flanges 73 and 74.

In Figure 11, I have illustrated a channel 78, of general U-shaped contour, having a flat lower

branch 79, arranged to be affixed flush with the door or frame. The channel is provided with upstanding branches 80 and 81, terminating into inwardly directed flanges 82 of the same configuration as described in connection with the embodiment illustrated in Figures 1 to 7 and referred to as flanges 12 and 13. In this embodiment the lock bar 83 is provided with slots 84, conforming to the contour of the branches 80, 81, and the inwardly directed flanges 82, thereby providing aprons 85, enveloping the channel 78 completely. The apron formed in the embodiment illustrated in Figure 11 and, to this extent also in the embodiment illustrated in Figure 8 also traverses the gap between the spaced twin channels when they are positioned on the door or closure and the corresponding frame, thereby completely obliterating the channels which the lock bar embraces.

It will thus be observed that I have provided a locking device which may be readily attached flush with the surface of a door or similar closure and its complemental frame, in which all visible fastening means, bolts, screws or rivets, are effectively hidden or avoided, eliminating all possibility of tampering which is effective in connection with padlocks.

It will also be observed that I have provided a locking device which is exceedingly simple and economical in construction by reason of the configuration of the various parts entering into my construction.

It will be understood that though I have illustrated particular features of my construction, variations may be made therein without departing from the spirit of the invention described and particularly set forth in the appended claims.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is—

1. A lock of the character described comprising in combination twin channels arranged to be affixed in alignment with each other and flush with the adjacent edges of a door and frame, respectively, said channels having longitudinal inwardly turned flanges, a lock bar formed with grooves to receive said flanges for slidably mounting said lock bar in said channels, said lock bar including a rotatable bolt disposed in the path of the grooves and keying stops or cutouts formed on the flanges of one of said channels for locking said lock bar in overlapping position on said channels.

2. A lock of the character described comprising in combination aligned channels forming guides on the door and frame, a lock bar, a key actuated bolt carried by said lock bar, said lock bar including guides for receiving said channels for slidably mounting said lock bar in said channels, said channels including keying cutouts for engagement by said bolt, to hold said lock bar in said channels in the locking or unlocking position.

3. A lock of the character described comprising, in combination, channels adapted to be affixed to the door and frame in aligned position and including inwardly directed flanges, a lock bar to be received by said channels by slidable movement and including a slotted portion for receiving the flanges of said channels, a key actuated rotatable bolt carried by said lock bar, said bolt being slotted for slidable movement in relation to said flanges, keying portions on said channels cooperating with said bolt for locking

said lock bar against displacement in said channels.

4. A lock of the character described comprising, in combination, channels arranged to be affixed in alignment with each other and flush with the adjacent edges of a closure and frame, keying portions formed in said channels, a lock bar including a key actuated bolt adapted to be received by the keying portions of said channels, slots in said lock bar, said channels being formed with flanges cooperating with said slots formed in said lock bar, said flanges on said channels including enlarged portions interfitting within complement slots in said lock bar to laterally interlock said channels with said lock bar.

5. A locking device of the character described comprising, in combination, two channel members arranged to be fixed in alignment with each other, one on a closure, and the other on a stationary member, and a lock bar slidable in said channels for connecting the same, said lock bar having key operated locking means and one of said channel members having means cooperating with said locking means to lock the bar in locking position, said lock bar also having means enclosing the longitudinal edges of said channels.

6. A locking device of the character described comprising, in combination, two channel members arranged to be fixed in alignment with each other, one on a closure, and the other on a stationary member, said channel members having longitudinal flanges; and a lock bar slidable in said channel members and having longitudinal grooves receiving said flanges, said bar having a key operated rotatable bolt, and one of said channel members having a recess formed in its flanges for receiving said bolt to lock said bar in channel connecting position.

7. A locking device of the character described comprising, in combination, two channel members arranged to be fixed in alignment with each other, one on a closure, and the other on a stationary member, a portion of one of said channel members being formed with a bolt receiving recess, and a lock bar slidable in said channels for connecting said channels and carrying a key actuated bolt for engaging said recess to lock the bar in locking position, said lock bar also having means enclosing the longitudinal edges of said channels.

8. A locking device of the character described comprising, in combination, two channel members arranged to be fixed in alignment with each other, one on a closure, and the other on a stationary member, the adjacent ends of said channel members being flush with the opposing edges of said closure and said stationary member, respectively, said channel members having longitudinal inwardly turned flanges; and a lock bar slidable in said channels and having longitudinal grooves receiving said flanges, said bar having a key operated rotatable bolt, one of said channels having cut-outs formed in its flanges for receiving said bolt to lock said bar in channel connecting position.

9. A locking device of the character described, comprising, in combination, two channel members and a lock bar slidable in said channel members between a position in which it interengages both members, and another position in which it engages only one member, said bar and members having cooperating key operated locking means for locking the bar in either position.

HAROLD MACHINIST.