March 22, 1966 F. J. RUSSELL ETAL 3,241,874

PLATE WITH TAB FOR RETAINING A UNIT
LOCK IN POSITION ON A DOOR
Filed Oct. 28, 1963

Fig. 1

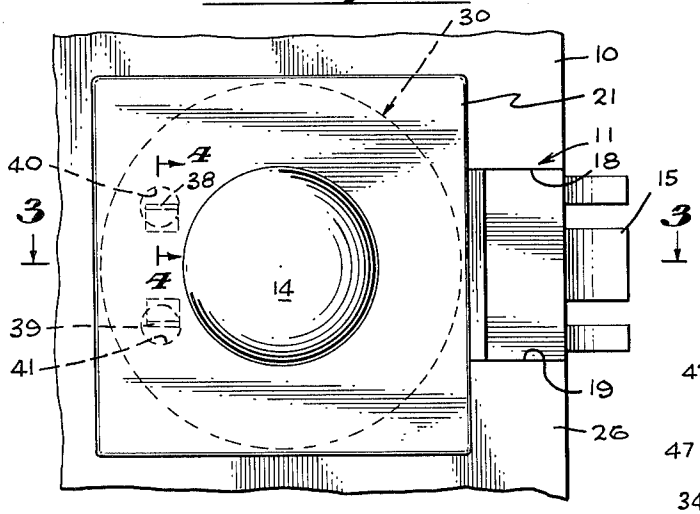


Fig. 2

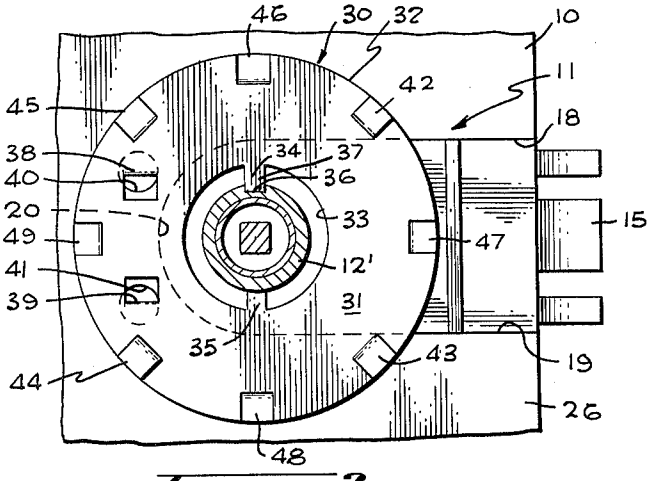


Fig. 3

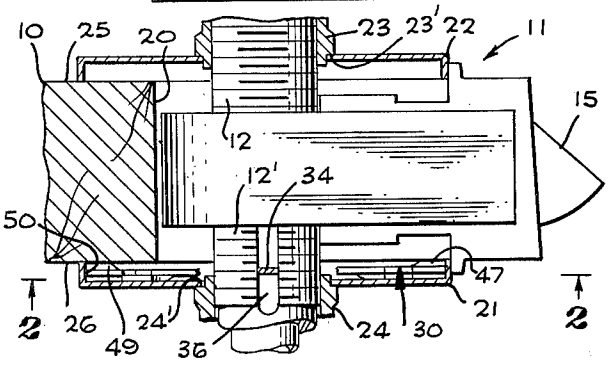


Fig. 6

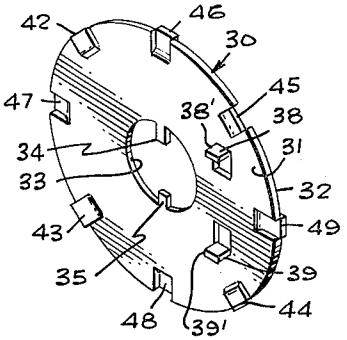


Fig. 4

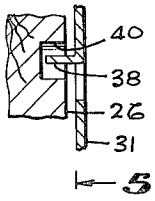
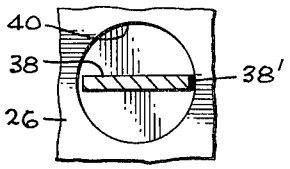


Fig. 5



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3,241,874

PLATE WITH TAB FOR RETAINING A UNIT LOCK IN POSITION ON A DOOR

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The invention relates to door locks of the kind which fit into a notch cutout in the edge and adjacent faces of a door. More particularly, the device of the invention relates to a special plate concealed under the escutcheon or rosette, which is placed there for the purpose of preventing the lock housing from being dislodged or loosened from the door in an edgewise direction.

The type of lock here under consideration is commonly identified as a unit type of lock, ordinarily installed on a heavy door. The housing of such a lock is inserted edgewise from one edge of the door; and unless some special precaution is taken to prevent the lock housing from becoming dislodged in an edgewise direction from the edge of the door, a dislodgement is apt to occur in the course of ordinary use.

It is therefore among the objects of the invention to provide a new and improved retaining plate which can be fitted with the lock assembly without need for making any major changes in the assembly and which itself will engage the door at a concealed location and, being mounted as part of the lock housing, will thereby anchor the lock housing securely in place.

Another object of the invention is to provide a new and improved simple expedient to hold a lock housing against edgewise removal and which fits on existing lock housing parts with virtually no change.

Another object of the invention is to provide a new and improved anchor for a lock housing which secures it against edgewise dislodgement and which additionally secures the lock against inadvertent disassembly from the door.

Still another object of the invention is to provide a new and improved retaining plate which results in an inexpensive simple expedient for preventing dislodgement of the lock housing and which lends itself readily to removal and replacement.

With these and other objects in view, the invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter set forth, pointed out in the appended claims and illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a side elevational view of a typical lockset which fits into a notch cutout in the edge of the door, showing a fragment of the door upon which the lockset is mounted.

FIGURE 2 is a front elevational view of the lockset installation taken on the line 2—2 of FIGURE 3 with the exterior escutcheon plate removed, showing operating parts of the installation.

FIGURE 3 is a transverse sectional view of the installatoin taken on the line 3—3 of FIGURE 1.

FIGURE 4 is a fragmentary vertical sectional view taken on the line 4—4 of FIGURE 1, with the exterior escutcheon plate removed.

FIGURE 5 is a fragmentary view taken on the line 5—5 FIGURE 4.

FIGURE 6 is a perspective view of the retaining plate taken separately.

In an embodiment of the invention chosen for the purpose of illustration, there is shown a fragment of door 10

having mounted thereon a lockset assembly embodying in part a lock housing indicated generally by the reference character 11 which mounts a threaded hub 12 on one side and a similar threaded hub 12' on the other side, within which is a rotating spindle (not shown) upon which a conventional knob is mounted. The knob is for the customary purpose of manipulating a latchbolt 15.

When the door 10 is prepared for reception of a lock housing 11 of this description, a recess is prepared of the type indicated by spaced upper and lower parallel walls 18 and 19 and a rounded inner wall 20. Ordinarily, in order to fasten the lock housing 11 within the recess, use is made of escutcheon plates 21 and 22 on respectively opposite sides of the door 10 which are pressed into position against the door.

To accomplish this, a collar 23 is rotatably secured to the escutcheon plate 22 in a manner permitting the collar to rotate with respect to the escutcheon plate, and a collar 24 is rotatably secured to the escutcheon plate 21. The collar 23 is threadedly engaged with the hub 12, and the collar 24 is threadedly engaged with the hub 12'. Mounted as described, the collars 23 and 24 can be screwed onto the respective hubs; and shoulders 23' and 24', when screwed into engagement with the respective escutcheon plates 22 and 21 into engagement with respective faces 25 and 26 of the door 10, thereby to clamp the lock housing 11 in position. The frictional engagement of the escutcheon plates 21 and 22 with the door 10 as just described is inadequate for securing the lock housing 11 in engagement with the door 10 within the recess defined by the spaced parallel walls 18 and 19 and the rounded inner wall 20.

To securely anchor the lock housing 11 against dislodgement by positive means independent of the frictional engagement of the escutcheon plate 21 and 22, there is provided a retaining plate identified generally by the reference character 30 and shown in perspective view in FIGURE 6. The retaining plate 30 consists of a disc 31, preferably of metal and having a circular perimeter 32. A central opening 33 is provided greater in diameter than the circumference of the hub 12' to permit the disc to slide freely into position over the hub 12'. Only one retaining plate 30 is needed, and although this can be attached to either side of the lock housing 11, the attachment in the selected embodiment is shown on the face side as viewed in FIGURE 2. A tongue 34 extends into the opening 33 from the upper side, and a somewhat similar tongue 35 extends into the opening 33 on the lower side. The hub 12' is provided with an axially extending slot 36 and receives an end 37 of the tongue 34 in engaged relationship. The tongue 35 on the opposite side acts with the tongue 34 to properly space the disc 31 with respect to the hub 12'.

Tabs 38 and 39 are punched from the disc 31 and bent inwardly as shown in FIGURES 2 and 6 so as to be projected toward the door 10. In the door 10 are provided holes 40 and 41 respectively to receive the tabs, the tab 38 fitting in the hole 40 and the tab 39 fitting in the hole 41. Although two tabs are shown, it will be understood that only one tab and its corresponding hole need be employed. On the same face of the disc 31 from which the tabs 38 and 39 extend is a series of offset portions 42, 43, 44 and 45 which are pressed from the metal of the disc itself. The offset portions are pressed outwardly a distance approximately equal to the thickness of the disc 31. In the same fashion, offset portions 46, 47, 48 and 49 are pressed outwardly on the opposite side.

When the retaining plate 30 is assembled to the lock housing 11 it is applied over the hub 12' before the escutcheon plate 21 is attached thereto.

When the lock housing 11 is installed in the door 10, the retaining plate 30 and its tabs 38 and 39 are moved

into the respective holes **40** and **41**, which may be drilled so as to provide a close fit with the edges **38'** and **39'** when the lock housing **11** is in proper location in the recess in the door **10**. The collars **23** and **24** then are turned to draw the escutcheon plates **21** and **22** toward faces **25** and **26** of the door **10**. The final turning or tightening of the collars **23** and **24** serves also to press the offset portions **42**, **43**, **44**, and **45** against the face **26** of the door **10** and simultaneously to press the inner face of the escutcheon plate **21** into engagement with adjacent faces of the offset portions **46**, **47**, **48** and **49**. It will be noted that the offset portions, being offset an amount equal to approximately the thickness of the disc **31**, produce a disc having an effective thickness three times the thickness of the metal. This can be varied at will to suit the space **50** beneath the escutcheon plate **21** so that the effective thickness of the retaining plate **30** fills the distance between the escutcheon plate **21** and the door **10**. Since the retaining plate **30** is interlocked with the hub **12'** by engagement of the tongue **34** with the slot **36**, and because of the engagement of tabs **38** and **39** respectively with the holes **40** and **41**, the hub **12'** and therefore the lock housing **11** is securely anchored in position within the recess defined by the spaced parallel walls **18** and **19** and the rounded inner wall **20**.

Contrarily, when the lock assembly is to be removed from the door **10**, the collars **23** and **24** are loosened sufficiently along the respective hubs **12** and **12'** until the escutcheon plate **21** is farther away from the face **26** of the door **10** than the projection of the tabs **38** and **39** of the retaining plate **30**. The tabs **38** and **39** thereupon are lifted out of the respective holes **40** and **41**, whereupon the lock housing **11** is freed and can be withdrawn edgewise from the door **10**.

It will be understood by the foregoing description that the retainer plate **30** can be a single piece of metal wherein the tabs and offset portions together with the tongues **34** and **35** can be formed as a stamping, thereby providing a filler as well as an anchoring device of extremely inexpensive and simple construction.

While the invention has herein been shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices.

Having described the invention, what is claimed as new in support of Letters Patent is:

1. In a door having a notch cutout in an edge thereof, said notch extending through the thickness of the door from one side to the other side, a lock housing in said cutout, and an escutcheon plate adapted to overlie portions of the door and the housing adjacent thereto, the combination of a retainer plate for anchoring said housing against removal in an edgewise direction from the door, said retainer plate having at least one tab extending therefrom into anchoring engagement with the door, and

means acting between said retainer plate and said housing in a direction normal to the plane of the door whereby to hold said retainer plate and said housing in engagement with the door.

2. In a door having a notch cutout in an edge thereof, a lock housing in said cutout, a hub extending laterally from said lock housing and having an axially extending slot therein, and an escutcheon plate adapted to fit over said hub and to overlie portions of the door and said housing adjacent thereto, the combination of a retainer plate for anchoring said housing against removal in an edgewise direction from the door, said retainer plate having at least one tab extending therefrom into anchoring engagement with the door, said retainer plate having an opening therein adapted to fit over said hub, and a tongue on said retainer plate extending into the opening and into said axially extending slot in said hub.

3. In a door having a notch cutout in an edge thereof, a lock housing in said cutout, hubs extending laterally from opposite sides of said lock housing, and escutcheon plates adapted to fit over said respective hubs and to overlie portions of the door and said housing adjacent thereto, the combination of a retaining plate for anchoring said lock housing against removal in an edgewise direction from the door, said plate having at least one tab extending therefrom into anchoring engagement with an adjacent side of said door, said retaining plate having an opening adapted to fit over the hub on the adjacent side of the door, a tongue on said plate extending into said opening, said last identified hub having an axially extending slot receiving said tongue, one face of said retainer plate being in engagement with the door and the face of said retainer plate being in engagement with the escutcheon when the escutcheon is clamped to the door.

4. In a door having a notch cutout in an edge thereof, said notch extending through the thickness of the door from one side to the other side, a lock housing in said cutout, and an escutcheon plate adapted to overlie portions of the door and the housing adjacent thereto, the combination of a retainer plate for anchoring said housing against removal in an edgewise direction from the door, said retainer plate having at least one tab extending therefrom into anchoring engagement with the door, offset portions of the retainer plate acting with said plate to fill a space between the interior of the escutcheon plate and the door, and means acting between said retainer plate and said housing in direction normal to the plane of the door whereby to hold said retainer plate and said housing in engagement with the door.

References Cited by the Examiner

UNITED STATES PATENTS

1,483,333	2/1924	Capece	70—452
2,751,243	6/1956	Biblin	292—357 X

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