July 26, 1966 D. W. GLASS 3,262,292

LOCK ASSEMBLY FOR SHOWCASES AND OTHER CLOSURES

Filed June 19, 1964

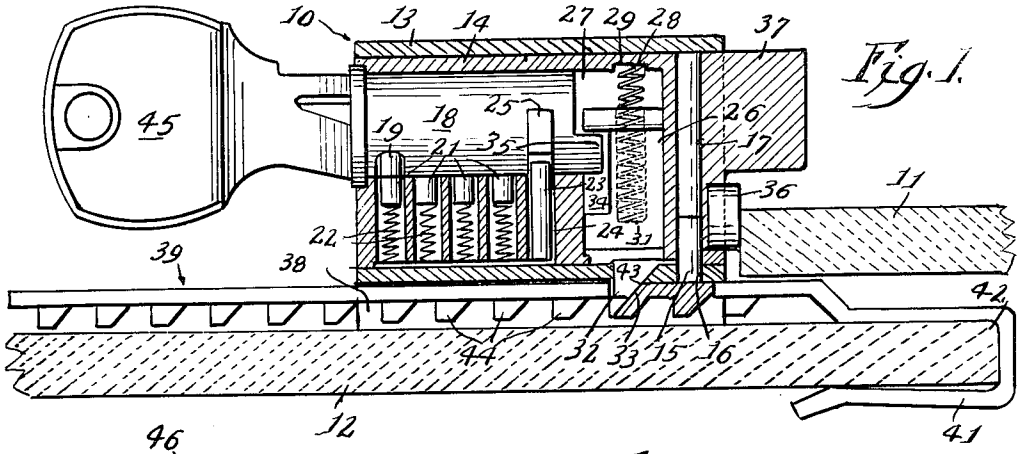


Fig. 1.

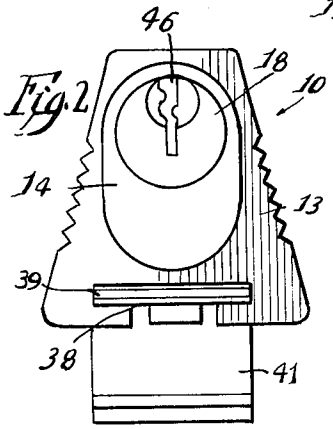


Fig. 2.

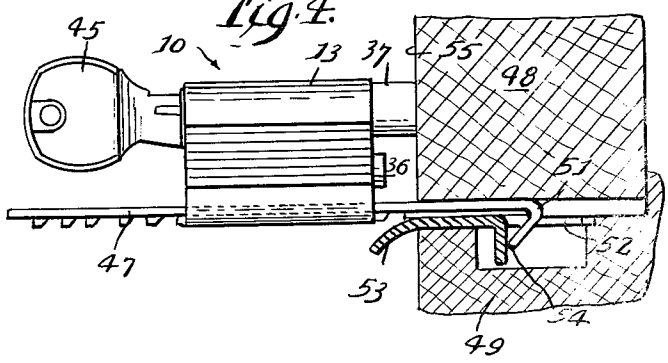


Fig. 4.

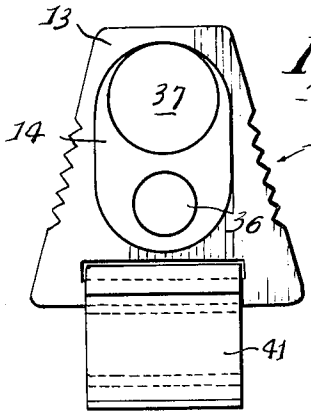


Fig. 3.

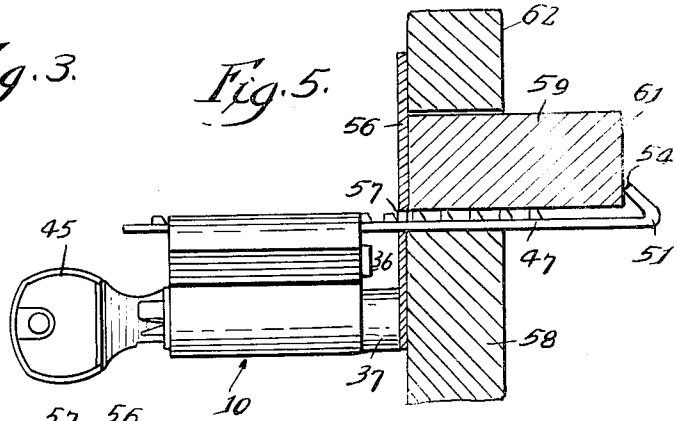


Fig. 5.

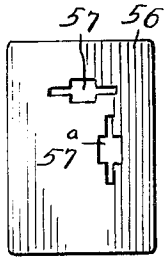


Fig. 6.

Inventor:
Dwight W. Glass
By Wilson & Leppert
Attorneys

United States Patent Office 3,262,292 Patented July 26, 1966

3,262,292

LOCK ASSEMBLY FOR SHOWCASES AND OTHER CLOSURES

Dwight W. Glass, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware

Filed June 19, 1964, Ser. No. 376,323
4 Claims. (Cl. 70—14)

The present invention relates to a novel locking device and more particularly to a portable or detachable locking device which can be conveniently used to lock showcases, doors, drawers and the like that are not ordinarily provided with locks or where the locks have become broken or defective.

Among the objects of the present invention is the provision of a locking device for showcases, drawers and the like having a pin tumbler lock operation for high security mounted in an extruded aluminum case or housing to provide for low manufacturing costs. A spring-biased bolt is mounted in the lock cylinder and urged through the side of the housing. The lock is fast and easy to operate with the bolt being actuated by the plug of the lock by turning a suitable key either to the right or left.

Another object of the present invention is the provision of a locking device having a lock cylinder which can be easily removed for re-keying or servicing of the lock. A retainer pin is driven into aligned holes in the casing and the lock cylinder to retain the cylinder therein. The cylinder can be removed by driving the retainer pin completely into the lock cylinder. The retainer pin hole in the cylinder is a through hole and the pin may be driven completely through the cylinder after the cylinder has been removed from the casing. The pin can then be reused, or it can be left in the cylinder and a new replacement pin can be driven into place when the cylinder has been reassembled into the case.

A further object of the present invention is the provision of an anti-manipulation latch type bolt in the cylinder cooperating with a locking bar. The locking bar is formed with a plurality of locking notches which shield the bolt when in engagement adding to the security of the lock. The locking bars are smooth and easy to handle and are inserted through a suitably designed longitudinally extending groove or slot in the case of the locking device. The locking bars are provided with a hooked end which engages the edge of a sliding door or panel or with a suitable abutment for other locking applications.

The present invention further comprehends the provision of a rubber bumper on the lock cylinder adapted to engage the edge of a sliding glass panel in a showcase, and the cylinder is provided with an extension overlapping the rubber bumper to prevent the springing of a glass panel over the lock body for gaining entrance to the showcase.

The present invention also comprehends the provision of an anxiliary locking plate which cooperates with the lock body and the locking bar to provide additional locking capabilities.

Further objects are to provide a constructuion of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawing:

FIGURE 1 is a horizontal cross sectional view of the lock assembly showing a locking bar adapted for the sliding glass panels of a showcase.

FIG. 2 is a front elevational view of the lock assembly shown in FIG. 1 with the glass panels omitted.

FIG. 3 is a rear elevational view of the lock assembly.

FIG. 4 is a top plan view of the lock assembly as applied to a door utilizing an alternate embodiment of locking bar.

FIG. 5 is a side elevational view of the lock assembly with the alternate embodiment of locking bar and an auxiliary locking plate utilized for locking two drawers in a cabinet.

FIG. 6 is a front elevational view of the auxiliary locking plate shown in FIG. 5.

Referring more particularly to the drawing wherein is disclosed an illustrative embodiment of the present invention, FIG. 1 discloses a lock assembly **10** operatively mounted on a showcase for a pair of sliding glass panels **11** and **12** for retaining the panels in locked relation. The lock assembly includes a housing or case **13** which is preferably formed out of extruded aluminum and has a generally trapezoidal shape as seen in FIGS. 2 and 3, although the specific configuration of the housing **13** is not meant to be limiting.

A lock cylinder **14** is securely yet detachably mounted in the housing or case **13** by means of a cylinder retaining pin **15**. The housing has an opening **16** at the bottom thereof and an aligned opening or hole **17** is formed in the cylinder **14** so that the pin **15** may be driven into the aligned openings to retain the case and cylinder together. The opening **17** extends through the cylinder **14** whereby the pin **15** may be driven completely into the cylinder opening to release the lock cylinder **14** from the housing **13**. Thus, the lock cylinder can be removed for cleaning or re-keying. The pin **15** may be retained in the cylinder **14** and a new replacement pin utilized to re-anchor the cylinder in the housing **13**, or the pin may be driven completely through the opening **17** while the cylinder **14** is removed from the housing and the pin reused.

The lock cylinder **14** contains a rotatable plug **18** having a plurality of pin tumblers **19** therein which are aligned with a plurality of drivers **21** yieldably biased toward the plug by tumbler springs **22**. A plug stop pin **23** extends through an opening **24** in the cylinder **14** with its inner end extending into an arcuate groove **25** in the surface of the plug **18** to retain the plug in the cylinder **14** and to limit the rotational travel of the plug.

A lock bolt **26** is mounted in a complementary opening **27** in the cylinder **14** and is yieldably urged outwardly by a spring **28** having one end seated in a recess **29** in the cylinder and the opposite end extending into a recess or opening **31** in the bolt. The locking end **32** of the bolt extends through an aligned opening in the housing or case **13** and has a camming surface **33** thereon. An elongated slot **34** is formed in the side of the bolt facing the plug and receives a projection **35** on the inner end of the plug for actuation of the bolt.

A resilient bumper **36** is mounted in the end of the lock cylinder and thereabove, an extension **37** of the cylinder **14** is formed to overlap the bumper **36** and prevent springing of the glass panel **11** over the lock case or housing **13** to open the showcase.

The housing or case **13** is formed with a longitudinally extending generally T-shaped groove or slot **38** therethrough opening in the bottom surface as seen in FIGS. 1 and 2 to accommodate a locking bar **39**. The bar includes a generally U-shaped end **41** which is adapted to engage and fit on the edge **42** of the glass panel **12**. The remainder of the bar **39** is formed with a plurality of longitudinally aligned locking notches **43** which are formed in the bar by stamping or other suitable operation and form a series of projections **44** below the bar.

To utilize the locking assembly upon the sliding glass panels **11** and **12** of a showcase, the locking bar **39** is positioned on the panel **12** with the U-shaped end **41**

encompassing the edge 42 of the panel 12. Then with the panels in their closed position, the lock assembly 10 is slid onto the locking bar 39 and therealong until the resilient bumper 36 contacts and abuts the edge of the panel 11. The locking end 32 of the lock bolt 26 is urged into engagement with a locking notch 43 as shown due to the spring 28. When the assembly 10 is slid onto the locking bar 39, the camming surface 33 of the lock bolt engages the surface of the locking bar and causes the bolt to retract into the case and cylinder 14; the elongated slot 34 allowing movement of the bolt relative to the projection 35 on the plug 18.

To release the lock assembly 10, a suitable key 45 is inserted into the keyway 46 in the plug 18 and the plug is rotated in either direction. Rotation of the plug causes generally vertical movement of the projection 35 which engages the upper end of the slot 34 and lifts the lock bolt 26 against the force of the spring 28 to retract the locking end 32 from the locking notch 43 in the locking bar 39 and allow relative movement of the housing or case 13 and the bar 39 to remove the case 13 therefrom and allow relative sliding movement between the panels 11 and 12.

FIG. 4 of the drawing shows the lock assembly utilizing an auxiliary locking bar 47 to lock the door 48 within its associated frame 49. The locking bar 47 is substantially identical to that shown in FIG. 1, except that it terminates in a generally V-shaped hook end 51. As shown, the hook end 51 is positioned to extend into the opening 52 of a strike plate 53 securely mounted on the door frame 49. The end 54 of the hook abuts the strike and the locking bar 47 extends outwardly from between the door and frame. The lock casing 13 is then slid onto the locking bar 47 until the projection or extension 37 of the lock cylinder 14 abuts the exterior surface 55 of the door 48. The locking bolt 26 then engages and cooperates with a locking notch 43 in the bar 47 to retain the door in closed position.

In FIG. 5 of the drawing, the lock assembly is shown with the auxiliary locking bar 47 and an auxiliary locking plate 56 for locking a drawer in a desk, cabinet or other enclosure. The locking plate 56 is generally rectangular and includes irregular openings 57, 57*a* at right angles (FIG. 6) which openings accommodate the locking bar 47 in any desired position. As shown in FIG. 5, the locking bar 47 is positioned between the top of the lower drawer 58 and the separating cross member 59 of the cabinet, with the end 54 of the hook end engaging the interior surface 61 of the member 59. The bar extends through the locking plate 56 and the plate extends upwardly to overlap the lower edge of an upper drawer 62. The lock assembly 10 is inserted onto the locking bar 47 so that the extension 37 abuts the locking plate 56. With the bolt 26 engaging a locking notch 43, both drawers are locked and cannot be removed from the enclosure without releasing the locking bolt 26 from the locking bar 47.

Having thus disclosed the invention, I claim:

1. A lock assembly comprising a hollow housing open at both ends and having a generally T-shaped longitudinally extending slot in the base thereof, a lock cylinder detachably mounted within said housing, said housing and said cylinder having aligned openings, a retainer pin positioned in said openings to retain the cylinder in the housing, a plug rotatably mounted in said cylinder having a transverse arcuate slot in the surface thereof, a plug stop pin mounted in the cylinder and extending into the arcuate slot to limit rotary movement of the plug, a projection on the inner end of the plug, a lock bolt mounted in the cylinder and yieldably biased into the T-shaped slot, said bolt having an elongated slot receiving the projection on the plug, a resilient bumper mounted on the end of the cylinder opposite the plug, an extension on the end of the cylinder adjacent and overlapping said bumper, and an elongated locking bar adapted to be received in the T-shaped slot and having a plurality of longitudinally aligned locking notches cooperating with the bolt, said bar having a hooked end cooperating with the article to be locked.

2. A lock assembly as set forth in claim 1, including an auxiliary locking plate having at least one irregular slot receiving the locking bar, said plate cooperating with said extension on the cylinder.

3. A lock assembly comprising a hollow housing open at both ends and having a generally T-shaped slot longitudinally extending therethrough in the base thereof, a lock cylinder mounted within the housing, said cylinder having an opening extending transversely therethrough and said housing having an opening in the base aligned with the opening in the cylinder, a retainer pin extending through the opening in the housing and partially through the opening in the cylinder, a plug mounted in the cylinder for limited rotary movement, actuating means on the inner end of the plug, a lock bolt mounted transversely in the cylinder and yieldably biased into the T-shaped slot, said bolt having lost-motion means cooperating with the actuating means on the plug, an extension on the end of the cylinder opposite the plug and laterally spaced from the T-shaped slot, and an elongated locking bar received in the T-shaped slot having a plurality of centrally positioned lateral locking notches longitudinally spaced thereon cooperating with the lock bolt.

4. A lock assembly comprising a hollow housing open at both ends and having a longitudinally extending slot therethrough in the base thereof, a lock cylinder detachably mounted within said housing, a plug mounted within said cylinder for limited rotary movement, a projection extending from the inner end of the plug, a lock bolt mounted for transverse movement in the cylinder and yieldably biased into said slot, said bolt having a locking end with a surface perpendicular to the slot, an inclined camming surface and an elongated slot in the side thereof receiving the projection on said plug, a resilient bumper mounted on the end of the cylinder opposite the plug, an extension on the end of the cylinder overlapping but spaced from said bumper, and an elongated locking bar received in said longitudinally extending slot and having a plurality of centrally positioned lateral locking notches conformably receiving the locking end of said bolt and longitudinally spaced and aligned on said locking bar.

References Cited by the Examiner

UNITED STATES PATENTS

928,820	7/1909	Tabor	70—14
1,864,883	6/1932	Anderson	70—14
1,965,889	7/1934	Fitz Gerald	70—364
2,050,695	8/1936	Fetyk	70—95
2,055,907	9/1936	Menchen	70—14
2,140,066	12/1938	White	70—14
2,585,643	2/1953	Feldmann	70—364
2,716,881	9/1955	Terrill	70—14
3,124,949	3/1964	Friedman	70—14

PATRICK A. CLIFFORD, *Primary Examiner.*

BOBBY R. GAY, *Examiner.*