Jan. 14, 1936. M. HOLPFER 2,027,731

LOCK CONSTRUCTION

Filed April 24, 1931

Fig. 1.

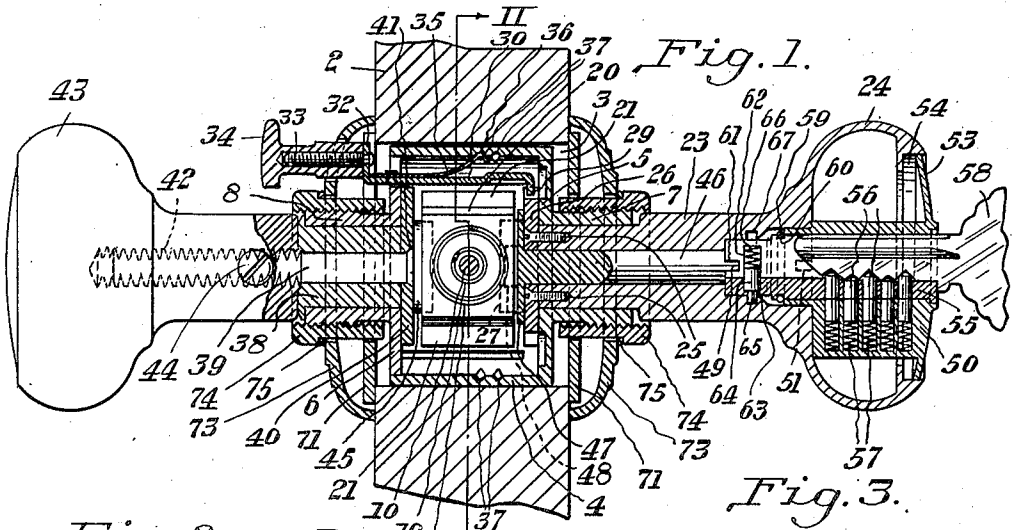


Fig. 3.

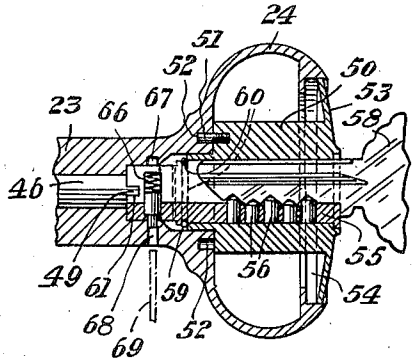


Fig. 2.

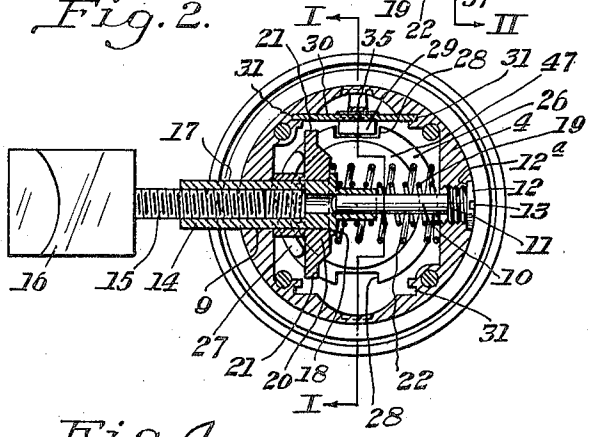


Fig. 4.

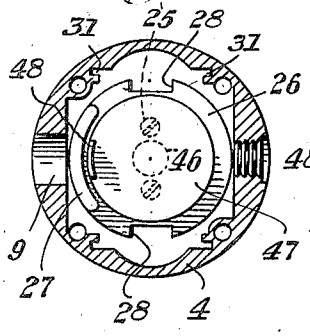


Fig. 5.

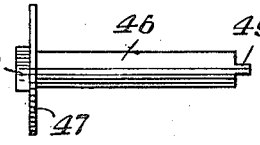
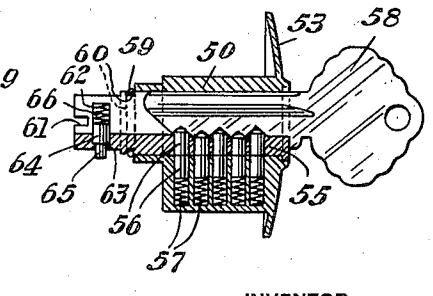


Fig. 6.



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UNITED STATES PATENT OFFICE

2,027,731

LOCK CONSTRUCTION

Marcus Holpfer, Pittsburgh, Pa., assignor, by mesne assignments, to The American Hardware Corporation, New Britain, Conn.

Application April 24, 1931, Serial No. 532,527

24 Claims. (Cl. 70—91)

This invention relates broadly to lock construction, and more particularly to a lock structure involving the use of a tumbler plug for locking and unlocking the same. It relates still more particularly to a lock structure of the pin tumbler type and to a device for connecting the lock cylinder with the casing or housing.

It is often desirable, as, for example, in residences, office buildings and the like, to provide a considerable number of tumbler locks which are of similar construction, some of which may be keyed alike and all of which may, if desired, be master keyed. It is desirable that the latch structure, together with the lock casing, be installed during the construction of the building so that after the building has been substantially completed the tumbler devices may be connected with the respective casings easily and quickly so that each casing may be provided with a tumbler structure keyed according to predetermined requirements.

It is also desirable that the tumbler structures of the various locks may be easily and quickly removed so that the combinations may be changed if desired or new tumbler structures substituted. To this end it has heretofore been customary to provide lock constructions adapted to be fitted with plate tumbler plugs and with devices readily accessible so that such plate tumbler plugs may be removed at will without disassembling the housing.

In plate tumbler plug constructions the plate tumblers are positively held against movement out of contact with the plug body so that the plugs with the plate tumblers assembled in them are readily susceptible of being handled without danger that the tumblers will fall out and become lost. This, however, is not true of pin tumbler plug constructions, and plugs provided with pin tumblers cannot be handled without danger that the tumblers will be lost. Therefore, it has heretofore been impracticable to attempt to apply pin tumbler plugs to otherwise completely installed lock constructions or to interchange the plugs without danger of losing the pin tumblers.

I provide a pin tumbler lock construction in which the cylinder and the plug may be assembled independently and then the unit comprising the cylinder and plug may be inserted into the lock casing without danger that the pin tumblers will fall out and become lost. The plugs and cylinders may be assembled at the factory, and the units comprising the plugs and cylinders may be readily handled similarly to the plate tumbler plugs per se. I provide means operable from the exterior of the casing by one having in his possession the proper key for enabling easy removal of the unit comprising the cylinder and plug without taking apart any portion of the housing or casing. I thus adapt pin tumbler lock constructions to uses for which such constructions have not been entirely suitable.

I provide lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing adapted to receive the cylinder, and means normally holding the cylinder in place in the casing, said means being adapted for movement to inoperative position to permit the cylinder to be removed from the casing upon movement of the plug out of locked position. I further provide an article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, and means connected with the article and adapted for movement, upon insertion of the cylinder into a lock casing, into position to hold the cylinder in place in the casing, such means being rotatable with respect to the casing upon operation of the lock.

I also provide lock structure, comprising a housing, lock actuating means having a spindle extending in a direction generally outwardly of the housing and adapted normally to remain in position in the housing, an interfitting plug and cylinder with which cooperate lock tumblers of the pin type and forming a unit adapted for connection with the housing, the plug being adapted to assume cooperative relationship with the spindle so as to rotate the same upon rotation of the plug, and means normally holding the unit in place with respect to the housing, said means being adapted for movement to inoperative position to permit the unit to be removed from the housing upon movement of the plug out of locked position. I still further provide lock structure, comprising a housing, a hollow knob spindle connected therewith, lock actuating means having a lock spindle a portion of which is adapted to lie within the hollow knob spindle, and an interfitting plug and cylinder with which cooperate lock tumblers of the pin type and forming a unit adapted for connection with the knob spindle, the plug being adapted to assume cooperative relationship with the lock spindle so as to rotate the same upon rotation of the plug.

Other objects and advantages of the invention will become apparent as the following description

of a present preferred embodiment thereof proceeds.

In the accompanying drawing I have shown a present preferred embodiment of the invention, in which

Figure 1 is a central vertical longitudinal sectional view through a lock construction, showing such construction applied to a door, the section being taken along the line I—I of Figure 2;

Figure 2 is a central vertical transverse sectional view of the lock construction shown in Figure 1, the section being taken along the line II—II of that figure;

Figure 3 is a central longitudinal sectional view of a portion of the lock construction shown in Figure 1, but showing the parts in a different operative position;

Figure 4 is a vertical sectional view of a portion of the lock construction shown in Figure 2;

Figure 5 is a plan view of the lock spindle having the bolt retracting cam at one end thereof; and

Figure 6 is a central longitudinal sectional view through the unit comprising the lock cylinder and plug, the parts being in the operative position shown in Figure 1.

The latch structure of the described embodiment of the invention is of the general type of the structures disclosed and claimed in the copending application of William E. Wread, Serial No 472,094, filed July 31, 1930, for the reissue of Patent No. 1,720,636, for Latch unit, and in the copending application of James P. McKinney, Jr., Serial No. 488,208, filed October 13, 1930, for Latch mechanism, which applications are owned by my assignee.

Referring more particularly to the drawing, there is shown in vertical cross-section in Figure 1 a door **2** provided with a transverse bore **3** and also preferably provided with a lateral bore (not shown) extending inwardly from the edge of the door and intersecting the transverse bore **3**, within which lateral bore the bolt is adapted to operate. Disposed within the bore **3** is a housing **4** of generally cylindrical construction having connected therewith at opposite axial extremities bearing plates **5** and **6** carrying cylindrical bearings **7** and **8**, respectively. One of the bearing plates may, if desired, be formed integrally with the housing **4**. The bearing plate **5** is shown as being so formed. The bearing plate **6** is connected with the housing in a suitable manner, as will presently appear.

The housing **4** is provided in its cylindrical surface with a generally radially extending substantially cylindrical hole **9**. Threadedly connected with the housing substantially directly opposite the hole **9** is a guide pin **10**. For attachment of the guide pin the housing has a threaded hole through which the body of the pin is adapted to pass and into which an enlarged threaded head **11** of the pin is adapted to be screwed, the pin also having a further enlarged head flange **12** provided with a slot **13** for the reception of a screwdriver. Thus the guide pin **10** is readily attachable and detachable with respect to the housing from the outside thereof, greatly facilitating assembly and disassembly of the latch unit. When the pin is screwed tightly into the housing its head flange **12** abuts against a shoulder **12a** provided on the housing to insure proper positioning of the pin, and the pin is held rigidly with its body projecting into the housing substantially directly opposite the hole **9**.

Slidably mounted with respect to the housing **4**, extending within the hole **9** and guided by the pin **10** is a bolt carrier **14**. The bolt carrier is preferably formed hollow, its inner extremity slidably receiving the pin **10**, whereby to positively position and guide the carrier within the housing substantially directly opposite the hole **9**, and its outer extremity being preferably threaded for the reception of a bolt **15** to the outer end of which is connected a head **16**. The effective length of the bolt may be adjusted by turning it with respect to the carrier **14**.

The bolt carrier **14** has a smooth substantially cylindrical outer surface **17** from which intermediate the extremities of the carrier projects outwardly an annular flange **18**. Biased between the back of the housing **4** and the flange **18** and surrounding the pin **10**, and hence normally tending to urge the bolt carrier outwardly through the opening **9**, is a coil spring **19** of relatively light construction, for a reason to be presently made clear. Slidably mounted upon the outer surface **17** of the bolt carrier **14** forwardly of the flange **18** and guided for reciprocation in a direction substantially parallel to the axis of the bolt carrier and relatively to the bolt carrier is a retracting member **20**. Preferably the bolt carrier and the retracting member **20** are splined together so that, although relative reciprocation between them is permitted, they cannot rotate relatively to one another. The splined connection between such members is omitted in the drawing for the sake of clearness.

The retracting member **20** has upwardly and downwardly extending crosshead portions **21**, for a purpose to be presently described. Biased between the retracting member **20** and the back of the housing is a coil spring **22** which substantially surrounds the coil spring **19** and also the guide pin **10**. The coil spring **22** is relatively heavy with respect to the coil spring **19** and imparts a substantially greater pressure to the retractor **20** than the spring **19** imparts to the bolt carrier **14**. The two springs are in effect nested one within the other and thus exert substantially coaxial compressive forces.

Journaled in the bearing **7** is a hollow knob spindle **23** terminating in a hollow knob **24** which also serves as a lock casing, as will be presently described. Connected with the inner extremity of the knob spindle **23** by screws **25** is a plate **26** serving to maintain the spindle in rotatable cooperative relationship with respect to the housing **4**. The plate **26** carries a retracting cam **27** adapted to lie behind the retracting member **20**, as shown in Figure 2, and effective upon rotation of the knob **24** for retracting the bolt.

The plate **26** has diametrically opposed notches **28** with one of which is adapted to cooperate the downturned extremity **29** of a locking member **30** slidably mounted in grooves **31** extending transversely of the housing **4** and having its extremity at the inner face of the door upturned, as at **32**, and provided with a threaded pin **33** to which is threaded an operating button **34**. The locking member **30** is adapted to be operated by the button **34** so as to move its extremity **29** into and out of the corresponding notch **28** in the plate **26**. When the extremity **29** lies within the notch **28**, as shown in Figure 1, the plate **26** is held against rotation, thereby preventing rotation of the knob spindle **23**, and consequently preventing retraction of the bolt by the cam **27**. The retracting member **30** carries a spring member **35** having a stop portion **36** adapted to enter one or the other of two notches **37** in the upper portion of

the casing so as to yieldably hold the locking member in either of its two positions.

Journaled in the bearing 8 is a sleeve 38 through which passes an inner knob spindle 39. Connected with the inner extremity of the sleeve 38 is a plate 40, the spindle 39 passing through such plate and being peened over at 41 to hold the spindle, the sleeve 38 and the plate 40 in assembled relationship. Threaded to the spindle 39 at 42 is an inner knob 43, which is maintained in place on the spindle by a set screw 44. The plate 40 carries a retracting cam 45 similar to the cam 27 and adapted to lie behind the retracting member 20 and to retract the bolt upon rotation of the inner knob 43 in the same manner as the bolt is adapted to be retracted by rotation of the outer knob 24.

Adapted to be inserted within the hollow knob spindle 23 from within the housing 4 is a lock spindle 46 (Figure 5) carrying at its inner extremity a plate 47 provided with a retracting cam 48. The retracting cam 48 (like the cams 27 and 45) is adapted to lie behind the retracting member 20 and, upon rotation of the lock spindle 46, to retract the bolt. The lock spindle 46 is freely rotatable within the shank of the knob spindle 23. It carries at its outer extremity an axially extending lug 49, for a purpose to be presently described.

Adapted to be fitted within the hollow knob 24 is a lock cylinder 50. The cylinder 50 carries at its inner extremity a pin 51 adapted upon insertion of the cylinder into the hollow knob to seat within one of a pair of oppositely disposed holes 52 to prevent the cylinder from rotating with respect to the knob. The cylinder also carries an outwardly extending flange 53 adapted to fit within a recess 54 in the knob 24 so as to close the end of the knob.

Adapted to be fitted within the bore of the lock cylinder 51 is a lock plug 55. The cylinder 50 and plug 55 are provided with tumbler bores of ordinary construction in which are disposed pin tumblers 56, those in the cylinder being backed by driving springs 57. When the proper key 58 is inserted into the plug 55 the tumblers are positioned with their shear planes in alignment, as shown in Figures 1 and 6, thereby permitting rotation of the plug within the cylinder, as indicated in Figure 3.

A spring ring 59, approximately half of which enters a slot 60 in the plug 55 and the other half of which overlies the inner extremity of the cylinder 50, maintains the plug and cylinder in assembled relationship while permitting relative rotation therebetween. This maintaining of the plug and cylinder in assembled relationship forms, in effect, a locking unit which may be inserted into and withdrawn from the hollow knob or casing 24 at will without danger that the pin tumblers 56 or their driving springs 57 will be lost.

The plug 55 extends inwardly beyond the inner extremity of the cylinder 50 and is provided at its inner extremity with a notch 61 adapted to receive the lug 49 at the extremity of the lock spindle 46. Thus, when the locking unit is in place within the hollow knob 24 and the notch 61 is engaged over the lug 49 rotation of the plug 55 causes rotation with it of the lock spindle 46 and consequently of the retracting cam 48, thereby retracting the bolt. Rotation of the plug is effected by insertion of the proper key 58 and then turning of such key in the usual manner. Inasmuch as the plate 47 carried by the lock spindle 46 lies within the plate 26 carried by the knob spindle 23, the cam 48 connected with the lock spindle 46 may be effective for retracting the bolt regardless of whether or not the downturned extremity 29 of the locking slide 30 is in engagement within the corresponding notch 28 in the plate 26. Thus when the locking slide is moved to locked position the bolt may be retracted from the outside only by using the key 58, as the knob 24 cannot be turned.

The plug 55 has at its inner end a transverse bore 62 having a reduced neck 63 in which operates a pin 64 having a reduced head 65 backed by a coil spring 66. The reduced head 65 of the pin 64 is adapted, upon insertion of the locking unit into the casing 24, to spring outwardly under the action of the spring 66 into an annular groove, recess or depression 67 in the knob spindle so as to maintain the locking unit in place within the casing but at the same time permit rotation thereof.

The knob spindle 23 is provided with a radially extending hole 68 communicating with the groove 67 but at such a position that when the plug and cylinder are held against relative rotation by the pin tumblers the pin 64 is not opposite the hole 68. However, when the key 58 is used and the plug 55 is rotated from the locked position, the pin 64 may be brought into alignment with the hole 68, whereupon a suitable wire or other device 69 may be inserted through the hole 68 to push the pin 64 inwardly against the compression of the spring 66 until the reduced head 65 of the pin clears the annular groove 67, whereupon the locking unit may be withdrawn from the casing 24.

The plate 6 is connected with the housing 4 by screws 70 (Figure 2). Oppositely disposed positioning plates 71 are provided at opposite sides of the door 2 and are connected by bolts 72 which also extend through the housing 4 and serve as guides to position the housing within the bore. This feature is described and claimed in the copending application of Harry E. Woernle, Serial No. 399,528, filed October 14, 1929, for Locks and latches, which application is owned by my assignee.

Suitable rosettes 73 are provided at the opposite faces of the door, trim nut 74 cooperating through suitable spring washers 75 to hold the respective rosettes against the door, such trim nuts 74 also enabling transverse adjustment of the housing 4 within the bore 3 while the housing is slidably positioned by the bolts 72.

The provision of the removable locking unit comprising the cylinder 50 and the plug 55 held in assembled relationship by the spring ring 59 enables easy replacement without any danger of losing the pin tumblers. Thus the pin tumbler construction is made suitable for uses which heretofore have been confined largely to plate tumbler locks or which have been fulfilled by pin tumbler constructions only at the risk of losing the tumblers and driving springs each time it is desired to change the combination or replace the plug. By reason of the fact that the lock spindle 46 is insertable from the inside of the housing, there is no danger that the same will fall out or become displaced upon removal of the locking unit, and the locking unit automatically assumes proper cooperative relationship with respect to the lock spindle upon being inserted into the casing. The respective holes 52 in the casing are so positioned that the locking unit is received so as to properly cooperate with the lock spindle 46

when the plug and cylinder are locked together by the pin tumblers and the cam 48 is in the position shown in Figure 4.

While I have shown and described a present preferred embodiment of the invention, it is to be distinctly understood that the same is not limited thereto, but may be otherwise variously embodied within the scope of the following claims.

I claim:

1. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing adapted to receive the cylinder, and means connected with and rotatable with the plug about a common axis and movable relatively thereto for normally holding the cylinder in place in the casing, said means being adapted for movement to inoperative position to permit the cylinder to be removed from the casing upon movement of the plug out of locked position.

2. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, and individually movable means connected with the article and adapted for movement, upon insertion of the cylinder into a lock casing, into position to hold the cylinder in place in the casing, such means being rotatable with respect to the casing upon operation of the plug.

3. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, and a spring actuated device connected with the article and adapted, upon insertion of the cylinder into a lock casing, to snap into position to hold the cylinder in place in the casing, such device being rotatable with respect to the casing upon operation of the plug.

4. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, and means connected with and rotatable with the plug and adapted for individual movement, upon insertion of the cylinder into a lock casing, into position to hold the cylinder in place in the casing.

5. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder and having a portion adapted to extend out of that end of the cylinder lying inwardly of the casing, lock tumblers cooperating with the cylinder and plug, and a spring actuated device connected with said portion of the plug and adapted, upon insertion of the cylinder into a lock casing, to snap into position to hold the cylinder in place in the casing.

6. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, a spring device for holding the cylinder and plug together, and means connected with the article and adapted for movement independently of rotation of the plug, upon insertion of the cylinder into a lock casing, into position to hold the cylinder in fixed axial position in the casing.

7. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing adapted to receive the cylinder, and means connected with the plug normally holding the cylinder in place in the casing, said means being adapted for movement to inoperative position to permit the cylinder to be removed from the casing only upon movement of the plug out of locked position, said movement of said means to inoperative position being independent of rotative movement of the plug.

8. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and means engaging the plug for maintaining the cylinder in place in the casing, said means being adapted to be rendered accessible from the exterior of the structure, when a key is in place within the plug, by means entirely separate and disconnected from said key.

9. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, means for holding the plug and cylinder together as a unit, a casing into which such unit is adapted to be inserted after assembly, and means adapted to simultaneously engage the plug and casing and movable relatively to the plug into and out of operative position for maintaining such unit in place in the casing.

10. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a spring device for holding the plug and cylinder together as a unit, a casing into which such unit is adapted to be inserted, and means connected with the unit for maintaining it in place in the casing, said means being adapted to be rendered accessible in a direction transversely of the axis of the lock structure from the exterior of the assembled structure upon rotation of the plug.

11. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing adapted to receive the cylinder, the casing having an arcuate depression, and rectilinearly movable means normally entering such depression and rotatable with the plug for holding the cylinder in place in the casing.

12. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing adapted to receive the cylinder, the casing having an arcuate recess, and means connected with the plug normally entering such recess for holding the cylinder in place in the casing, said means being movable along said arcuate recess to a position in which it may be moved relatively to the plug out of such recess to permit the cylinder to be removed from the casing upon movement of the plug out of locked position.

13. Lock structure, comprising an interfitting plug and cylinder with which cooperate lock tumblers of the pin type which are adapted to fall out upon removal of the plug from the cylinder, means for holding the plug and cylinder together as a unit to prevent the pin tumblers from falling out, a casing into which the unit may be inserted, and means normally holding the unit in place in the casing, said means, upon movement of the plug out of locked position, being movable to a position in which the same may manually be rendered inoperative so as to permit the cylinder to be removed from the casing.

14. Lock structure, comprising an interfitting plug and cylinder with which cooperate lock

tumblers of the pin type which are adapted to fall out upon removal of the plug from the cylinder, means for holding the plug and cylinder together as a unit to prevent the pin tumblers from falling out, a casing into which the unit may be inserted, the casing having an arcuate depression, and means connected with the plug but movable relatively thereto normally entering such depression and movable along such depression upon rotation of the plug for holding the unit in place in the casing, said means being adapted for movement out of such depression to permit the unit to be removed from the casing upon movement of the plug out of locked position.

15. Lock structure, comprising an interfitting plug and cylinder with which cooperate lock tumblers of the pin type which are adapted to fall out upon removal of the plug from the cylinder, means for holding the plug and cylinder together as a unit to prevent the pin tumblers from falling out, a casing for receiving such unit, the casing having an arcuate depression and having an opening extending to the exterior of the casing and communicating with such depression, and a locking device connected with the unit normally entering such depression for holding the unit in place in the casing, such device being adapted upon movement of the plug out of locked position to be aligned with said opening in the casing whereby the device may be moved out of the depression to permit the unit to be removed from the casing.

16. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and means carried within and adapted to project yieldably out of the plug for maintaining the cylinder in place in the casing.

17. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and means connected with the plug and movable therewith upon rotation thereof and also movable relatively to the plug for maintaining the cylinder in place in the casing.

18. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and yieldably mounted means carried by the plug for maintaining the cylinder in place in the casing.

19. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and means carried by the plug and adapted to be rendered inaccessible upon assembly of the cylinder and casing for maintaining the cylinder in place in the casing, said means being operative independently of rotation of the plug.

20. Lock structure, comprising an interfitting plug and cylinder with which cooperate lock tumblers of the pin type, means for holding the plug and cylinder together as a unit, a casing into which the unit may be inserted, and means normally holding the unit in place in the casing, said means while remaining operative being movable to a position in which the same may be rendered inoperative to permit the cylinder to be removed from the casing upon movement of the plug out of locked position.

21. Lock structure, comprising an interfitting plug and cylinder with which cooperate lock tumblers of the pin type, means for holding the plug and cylinder together as a unit, a casing into which the unit may be inserted, said casing having an opening extending to the exterior thereof, and means normally holding the unit in place in the casing, said means while remaining operative being movable to a position in alignment with said opening in the casing through which an instrument may be passed to move the same to inoperative position to permit the cylinder to be removed from the casing upon movement of the plug out of locked position.

22. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, a casing into which the cylinder and plug are adapted to be inserted, and means carried by the plug and movable therewith upon rotation thereof and also movable relatively to the plug for maintaining the cylinder in place in the casing.

23. An article of manufacture, comprising a lock cylinder adapted for insertion into a lock casing, a plug adapted for insertion into the cylinder, lock tumblers cooperating with the cylinder and plug, means for holding the cylinder and plug together, and means connected with the article and adapted for movement, upon insertion of the cylinder into a lock casing, into position to simultaneously engage the plug and casing to hold the cylinder within the casing, said last mentioned means being movable to inoperative position only when the plug is in predetermined position within the cylinder.

24. Lock structure, comprising a plug, a cylinder adapted to receive the plug, lock tumblers cooperating with the plug and cylinder, the plug having the usual keyway, means for holding the plug and cylinder together as a unit, a casing into which such unit is adapted to be inserted, and rectilinearly slidable means connected with the unit for maintaining it in place in the casing, said means being adapted to be rendered accessible from the exterior of the assembled structure, the casing having an opening separate and apart from said keyway through which such access may be had.

MARCUS HOLPFER.