Aug. 16, 1966 A. CHESLER 3,266,277

MORTISE CYLINDER DEAD-LOCK

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Fig. 1.

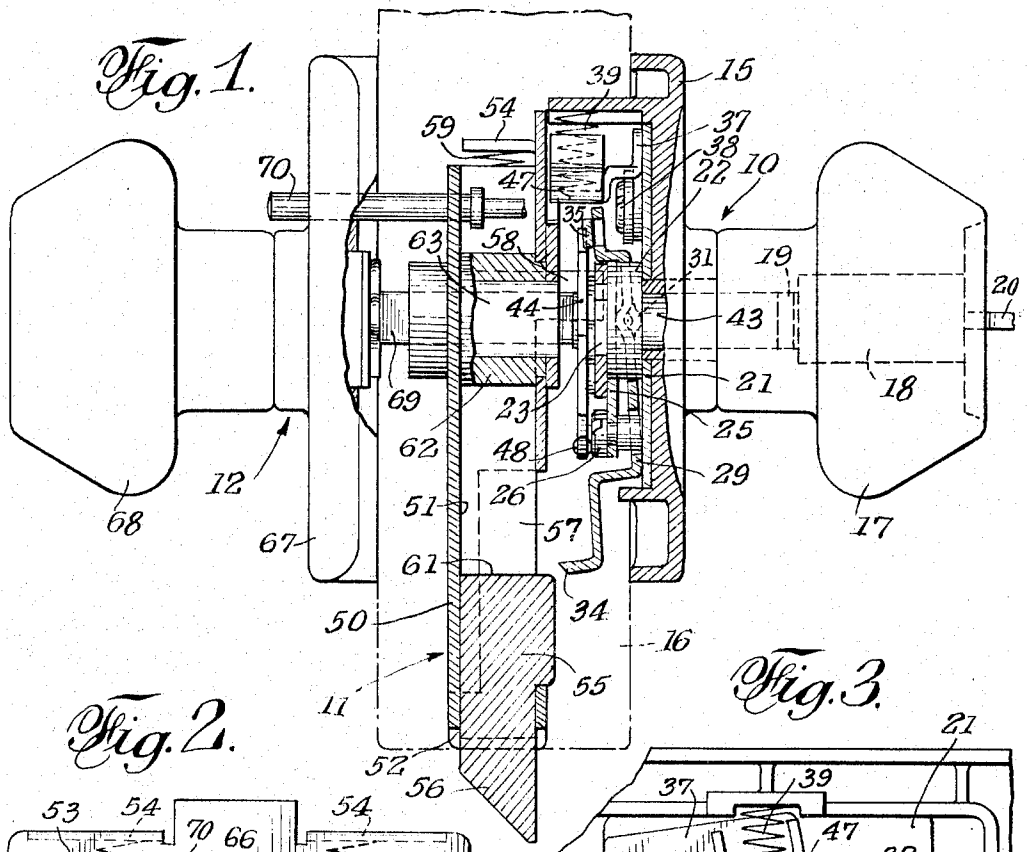


Fig. 2.

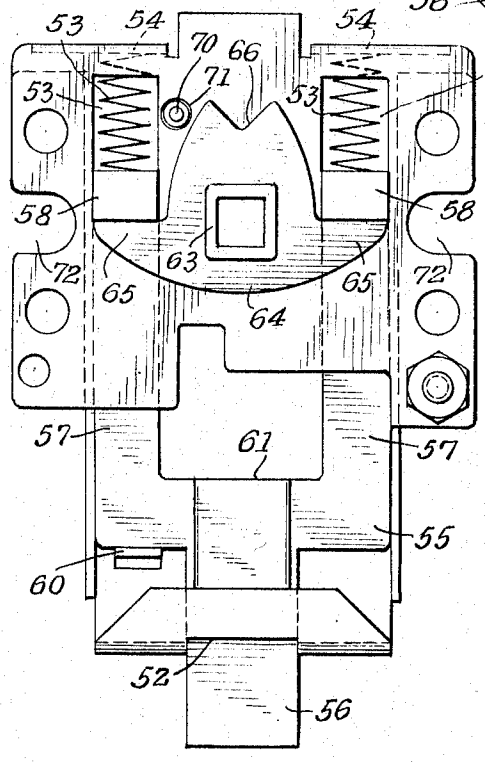
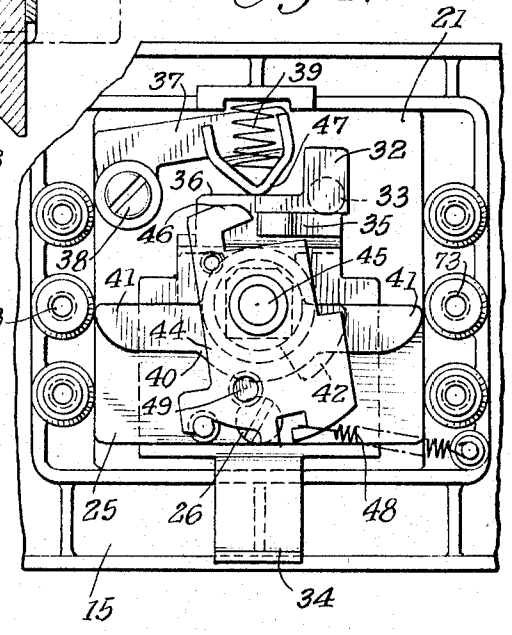


Fig. 3.



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Fig. 4.

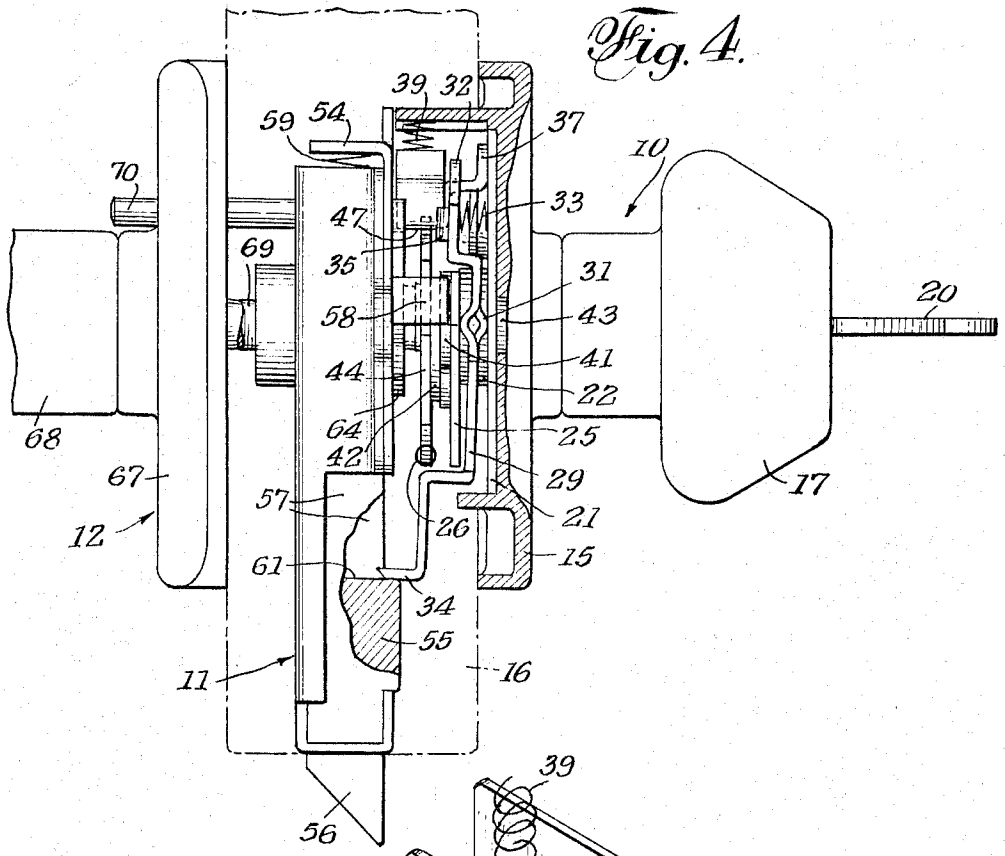
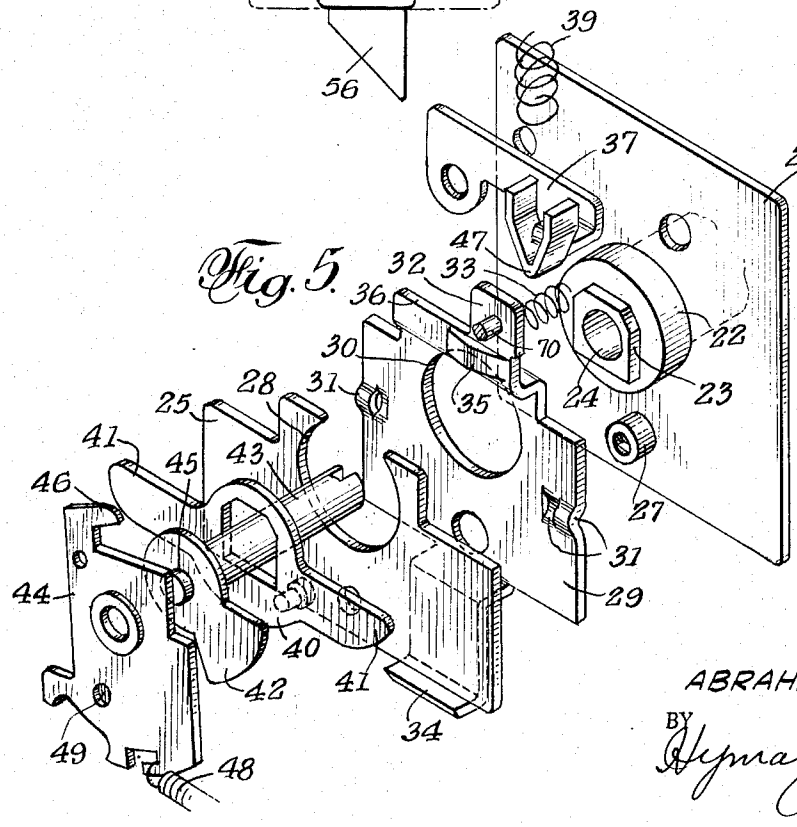


Fig. 5.



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MORTISE CYLINDER DEAD-LOCK

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9 Claims. (Cl. 70—150)

This invention relates to a mortise cylinder lock having means to dead-lock the same from both the inside and outside of the door that mounts the lock. The present structure has general utility as a lock for home, apartment and similar use but is especially devised for the doors of travelling homes and trailers.

An object of the present invention is to provide a dead-lock, as above characterized, that may be dead-locked and released from dead-lock from the outside by means controlled by a cylinder lock in the outside knob, and by the key therefor, and may be dead-locked by means actuated from the inside by a push button and released from dead-lock by means actuated by the inside knob of the lock.

Another object of the invention is to provide a mortise dead-lock, as characterized, that may be released from the inside from a dead-lock condition brought about by a key locking the mechanism from the outside, and released from the outside from a dead-lock condition brought about by a push button actuated from the inside.

My invention also has for its objects to provide lock means that is positive in operation, convenient in use, easily installed in a door or similar place of installation, and as easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The above objects are realized in a mortise cylinder dead-lock that may be dead-locked, from the inside, by a push pin or push button which, by moving a rocker plate to a position in which the same is engaged by a spring-biased trip lever and has a portion disposed in the path of retractive movement of a spring latch, dead-locks said latch; may be dead-locked from the outside by rotation of a key in a cylinder lock in the outside knob to rotate a lever that moves said rocker plate to the mentioned trip lever-engaging position and into the path of retractive movement of the spring latch, as before; may be released from dead-lock by a turn of the inside knob which, by means of an inside cam moves the trip lever to release the rocker plate so the same may return to a retracted position out of the path of retractive movement of the latch; and may be released by the key from the outside by actuation of means that similarly moves the trip lever to release the rocker plate as before.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description and which is based on the accompanying drawings. However, said drawings merely show and the following description merely describes, one embodiment of the present invention which is given by way of illustration or example only.

In the drawings, like reference characters designate similar parts in the several views.

FIG. 1 is a top plan view, partly in section, of a lock according to the present invention, the same being in released position.

FIG. 2 is an elevational view of the inside face of the latch assembly of said lock.

FIG. 3 is a similar view of the inside face of the outer escutcheon and parts assembled thereon.

FIG. 4 is a view, similar to FIG. 1, showing the lock in dead-locked position.

FIG. 5 is an exploded perspective view of the parts shown in the assembly of FIG. 3.

The lock that is illustrated comprises, generally, an

outside knob unit **10**, a latch unit **11** mounted on the inside of the unit **10**, and an inside knob unit **12**.

The unit **10** comprises an escutcheon **15** that is adapted to be mounted against the outside face of a door **16**, the same being provided with an outside knob **17** that, in a conventional manner, is fitted with a tumbler or cylinder lock **18**, that has a rotational plug **19** which is turned by a key **20**.

The inside face of the escutcheon **15** fixedly mounts a lower plate **21**. A hub **22** of the outside knob **17** extends through the lower plate, the same being provided with a key extension **23**. A bore **24** extends axially through said hub. An upper plate **25** is inwardly spaced from the lower plate and is affixed by a screw **26** to the latter plate, the screw entering a boss **27** on the plate **21**. Said hub **22** extends into an opening **28** in the upper plate **25**.

A rocker plate **29** is disposed in the space between plates **21** and **25**, a clearance hole **30** for the hub **22** being provided in said rocker plate which is adapted to be rocked on a vertical axis transverse to the axis of the knob **17**. Sheared and oppositely offset rocker bosses **31**, formed on opposite sides of the rocker plate **29**, engage the plates **21** and **25** so the rocker plate is adapted to rock on said vertical axis in a horizontal plane.

An extension tab **32** on the plate **29** is biased by a spring **33** to hold said plate **29** in a position in which a dead-locking extension **34** thereof is held retracted, as in FIG. 1 which shows the lock in released position. Said extension tab **32** and locking extension are provided on opposite sides of the mentioned vertical rocker axis. The inside face of rocker plate **29**, on the side of the axis that has the tab **32**, is provided with a wedge cam **35** that faces toward the inside portion of the lock. Alongside the tab **32**, said plate **29** has an edge **36**.

A trip lever **37** is mounted on the lower plate **21** on a pivot **38**, said lever being biased by a spring **39** in a direction to engage with and latch over the edge **36** of the rocker plate **29**, thereby holding the same in the position of FIG. 4 in which the extension **34** of said plate is projected to dead-lock position.

An inside hub cam **40** is fitted on the extension **23** and, being keyed thereto, is rotationally movable by the outside knob **17**. Said cam **40** is provided with lateral latch-retracting arms **41**.

A lever **42** is mounted on a stud **43** which extends into the bore **24** and is connected, in the usual way, to the plug **19** of the cylinder lock **18**. It will be clear that the lever **42** is rotationally movable by a key **20** that rotates said plug **19** while the knob **17** remains non-rotated.

A cam **44** is mounted on an extension **45** of the stud **43** and is rotationally movable on said extension. A cam lug **46** on cam **44** extends into camming engagement with a V-shaped latching end **47** of the lever **37**. A spring **48** normally biases said cam **44** to a position in which the lug **46** is retracted from said end **47**. An embossment or pin **49** on the cam **44** projects into the path of rotational movement of the lever **42**, thereby enabling said lever to rock the cam **44** in a clockwise direction, as seen in FIG. 3, against the bias of the spring **48**. The cam lug **46** is, thus, moved in a direction to raise the trip lever **37** and allow the spring **33** to rock the rocker plate **29** to the position of FIG. 1 wherein the lock is in released position.

The latch unit **11** is provided with a slide housing or body **50** that is affixed to the inner face of the escutcheon **15**, said body having a passage **51** that terminates in a lateral opening **52**. On the face of said body toward the outside of the lock there are provided open slots **53** and, beyond the ends of said slots are provided lugs **54**.

A latch 55 occupies the passage 51, the end 56 thereof that engages a keeper extending through the opening 52 of the slide body. Extensions 57 on the latch are guided in the slide body and terminate in forwardly extending projections 58. Springs 59 between said lugs 54 and the ends of latch extensions 57 bias the latch to projected position against a stop lug 60. Between the extensions 57, the latch is provided with a surface 61 that is located between the latch end 56 and a hub 62 that spans across the passage 51 and is located on an axis that is an inner extension of the axis of the knob 17, lock 18 and stud 43.

The hub 62 rotationally mounts a polygonal spindle tube 63 and on said tube is mounted an inside hub cam 64 which has lateral arms 65 similar to the arms 41 of the hub cam 40. Said cam is also provided with a V-shaped cam extension 66 that so interfits with the V-shaped end 47 of the trip lever 37 that rotation of tube 63 will cause the cam extension 66 to trip said lever, thereby releasing the rocker plate 29 to latch releasing position. The extension 34 of said rocker plate, when in the position of FIG. 4, overstands said surface 61 of the latch, thereby dead-locking the same.

The inside unit 12 comprises an escutcheon 67 that is adapted to be mounted against the inside face of the door 16, the same being provided with an inside knob 68 from which extends a polygonal spindle 69 that fits into the tube 63. Thus, on turning of knob 68 in either direction, the inside hub cam 64 is turned to cause retraction of the latch 55 and, if the trip lever 37 has latching engagement with edge 36 of the rocker plate 29, releases said plate to free the latch for such retraction.

A push button 70 extends through a hole 71 in the latch body 50 and is aligned with the tab 32 on the rocker plate 29, as indicated in FIG. 5.

Screws from the inside face of the inside escutcheon 67 extend through lateral slots 72 into threaded bosses 73 extending inward from the inner face of the outer escutcheon 15. Said screws fasten the outer and inner units 10 and 12 together on opposite sides of the door 16.

It will be seen from the foregoing that with the lock in the released position of FIG. 1, turning of either knob 17 or 68 in either direction will cause a corresponding turning movement of cams 40 or 64 and, therefore, retraction of the latch 55 against the bias of the springs 59.

By turning the key 20 in the lock 18 of the outside knob 17 to cause the lever 42 to rotate counter-clockwise (in FIGS. 3 and 5), said lever engages the wedge cam 35 and rocks the rocker plate 29 to the position of FIG. 4. This movement retracts the edge 36 of said plate and allows the spring 39 to press the trip lever to latch over said edge and hold the plate 29 and the dead-locking extension 34 thereof in retraction-preventing engagement with the surface 61 of the latch. The lock is now dead-locked and the outside knob 17 cannot be turned to open it. The same result may be achieved from the inside by pushing on the end of button 70.

This dead-locked position can be released from the outside only by a key 20 that, by being turned in a clockwise direction, rotates the lever 42 to pick up the embossment or pin 49, thereby rocking the cam 44 against the bias of the spring 48. Thus, the cam lug 46 of cam 44 engages the V-shaped end 47 of the trip lever and lifts it out of latching engagement with edge 36 of the rocker plate. This allows the latter to return to release position, as in FIG. 1. The same result may be achieved from the inside by turning the inside knob 68 so that the V-cam 66 will lift the trip lever and release the rocker plate.

It will be realized that the present lock construction is exemplary and represents the best mode of the invention, as now contemplated. Therefore, I do not wish to restrict myself to the particular lock that is disclosed, but desire to avail myself of all modifications that may fall within the scope of the appended claims.

Having thus described my invention, what I desire to obtain by Letters Patent is:

1. A mortise cylinder dead-lock having inner and outer knobs that control means for retracting a spring latch, said outer knob being provided with a key-operated cylinder lock, said dead-lock comprising:

(a) a rocker plate provided with a dead-locking extension and normally biased to a position in which the extension is retracted out of the path of retractive movement of the latch,

(b) means operated by the cylinder lock, when turned in one direction by a key, to move the rocker plate to a position in which the extension thereof is projected into the path of retractive movement of the latch to dead-lock the same,

(c) a trip lever biased to automatically latch the rocker plate in the latter position, and

(d) cam means engaged by the cylinder lock-operated means, when turned in the opposite direction by a key, to trip said trip lever and, thereby, release the rocker plate to its normal biased position.

2. A mortise cylinder dead-lock according to claim 1 in which the rocker plate is provided with a wedge cam on the face thereof away from the outer knob, and the cylinder lock-operated means comprising a stud extending from and rotated by the lock cylinder, and a lever on the end of said stud and engaging said cam on the rocker plate to move the same against its bias.

3. A mortise cylinder dead-lock according to claim 1 in which a latching end is provided on said trip lever, and the rocker plate is provided with an edge portion that is caught behind said latching end when the lever moves to latching position, and the cam means that is engaged by the cylinder lock operated means including a lug that, upon said turning of the key in the opposite direction, engages said latching end to move the same away from the edge portion of the rocker plate to release the latter.

4. A mortise cylinder dead-lock having inner and outer knobs that control means for retracting a spring latch, said outer knob being provided with a key-operated cylinder lock, said dead-lock comprising:

(a) a rocker plate provided with a dead-locking extension and normally biased to a position in which the extension is retracted out of the path of retractive movement of the latch,

(b) means operated by the cylinder lock, when turned in one direction by a key, to move the rocker plate to a position in which the extension thereof is projected into the path of retractive movement of the latch to dead-lock the same,

(c) a trip lever biased to automatically latch the rocker plate in the latter position,

(d) cam means engaged by the cylinder lock-operated means, when turned in the opposite direction by a key, to trip said trip lever and, thereby, release the rocker plate to its normal biased position,

(e) a push pin operable from the inner side of the lock to move the rocker plate to dead lock position, and

(f) cam means carried by the inner knob which, when the knob is turned in either direction, trips said trip lever to release the rocker plate to normal biased position.

5. A mortise cylinder dead-lock according to claim 4 in which the latter cam means are provided on the latch-retracting means of the inner knob.

6. In a lock having a spring latch and means controlled by the inner and outer knobs of the lock to retract said latch,

(a) a surface on the latch transverse to the path of movement thereof between projected and retracted positions,

(b) a rocker plate provided with a dead-locking extension,

(c) a spring normally biasing said plate to a position in which the extension is retracted from engagement with said latch surface,

(d) cylinder lock-operated means extending from the outer knob and, when turned in one direction by a key that operates said cylinder lock, moving said rocker plate against the bias of said spring to a position in which the dead-locking extension is projected in the path of retraction movement of the latch surface to prevent retraction of the latch,

(e) means to automatically latch the rocker plate in the latter position, and

(f) means moved by the lock-operated means, when turned by a key in the opposite direction, to trip the latter means to effect release of the rocker plate from latched condition.

7. In a lock according to claim 6, the automatic latching means comprising a spring-biased trip lever, and the last-mentioned means engaging and tripping said lever.

8. In a lock according to claim 6, a push pin operable from the inner side of the lock to move the rocker plate to dead-locking and latched position of its extension, and means controlled by the inner knob to trip the trip lever.

9. In a lock having a spring latch and provided with inner and outer knobs for retracting said latch, the outer

lock being provided with a key-operated cylinder lock having a rotating plug,

(a) a rocker member provided with a portion to dead-lock the latch,

(b) a spring normally biasing said member to latch-release position,

(c) means operated by rotation of the cylinder plug in one direction to move the rocker member to latch-locking position,

(d) a push button operable from the inner side of the lock to similarly move the rocker member,

(e) a lever to latch the rocker member in latch-locking position,

(f) means controlled by the plug-operated means to trip said lever, and

(g) means controlled by the inner knob to similarly release said trip lever.

References Cited by the Examiner

UNITED STATES PATENTS

2,373,237	4/1945	Endter	70—150
2,486,268	10/1949	Erkkila	292—153 X
3,144,266	8/1964	Schmid et al.	292—153 X

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