March 31, 1942. T. A. SCANLAN 2,278,044

LOCK

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Fig. 1.

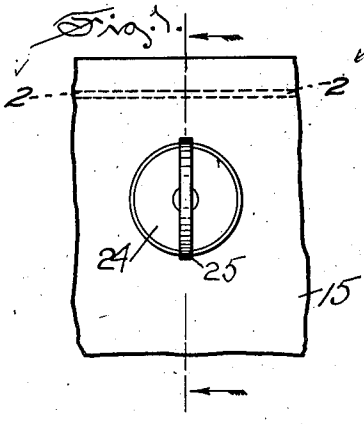


Fig. 2.

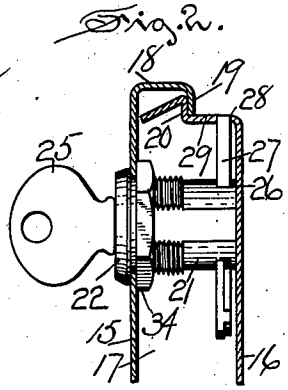


Fig. 3.

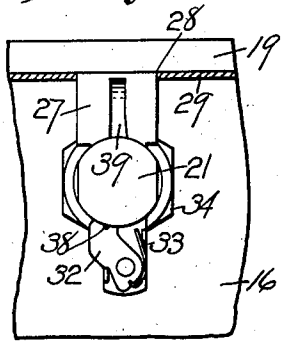


Fig. 4.

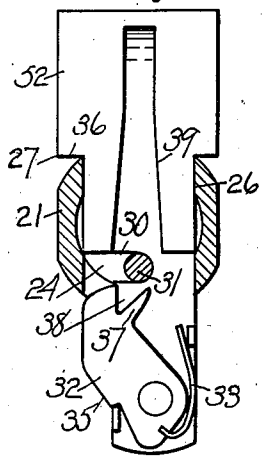


Fig. 5.

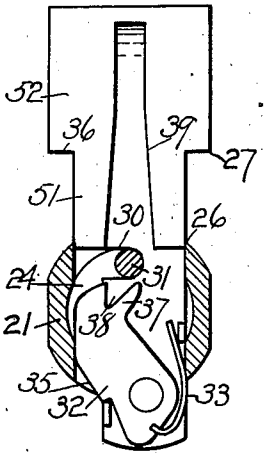


Fig. 6.

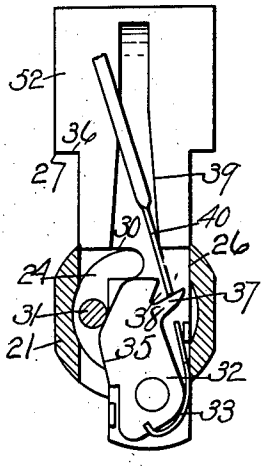


Fig. 7.

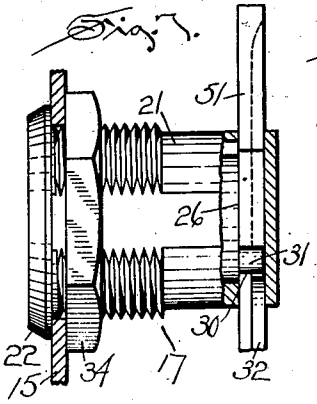


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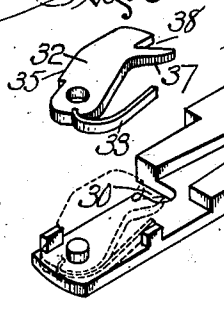
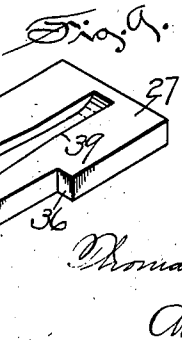


Fig. 9.



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Fig. 10.

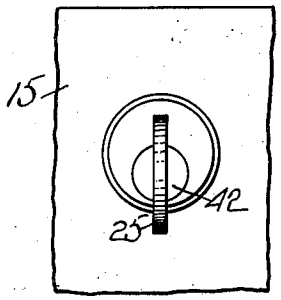


Fig. 11.

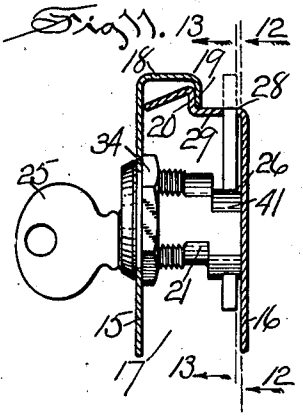


Fig. 12.

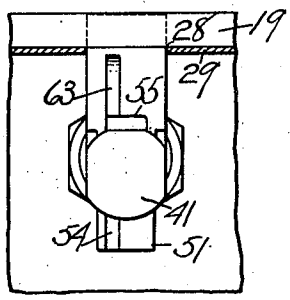


Fig. 13.

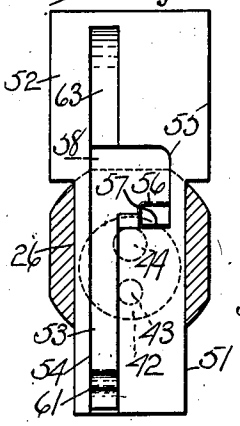


Fig. 14.

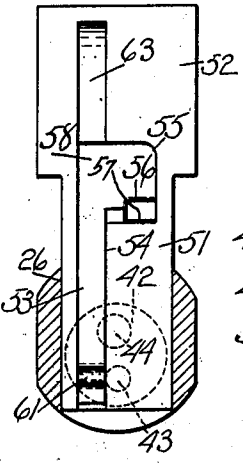


Fig. 15.

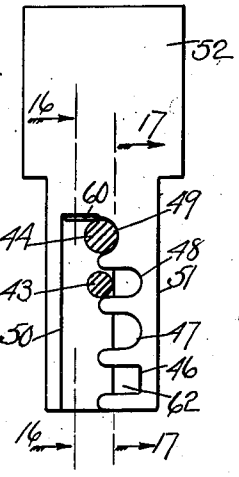


Fig. 16.

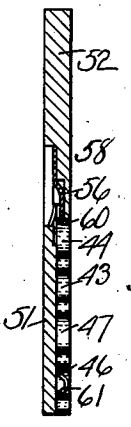


Fig. 17.

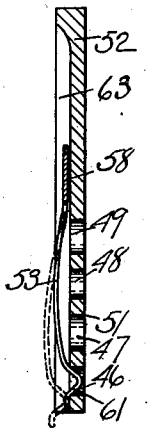


Fig. 18.

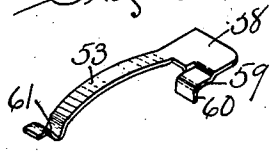


Fig. 19.

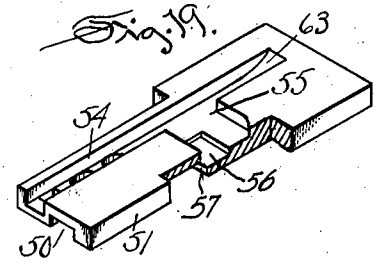
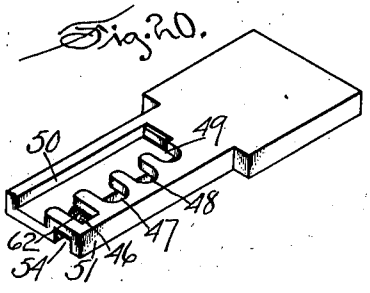


Fig. 20.



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Fig. 21.

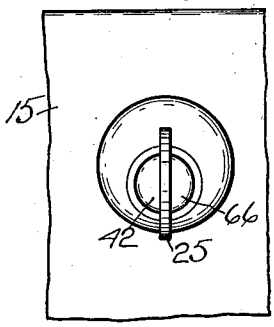


Fig. 22.

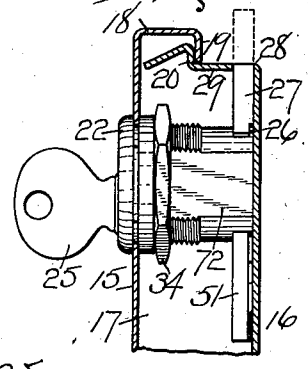


Fig. 23.

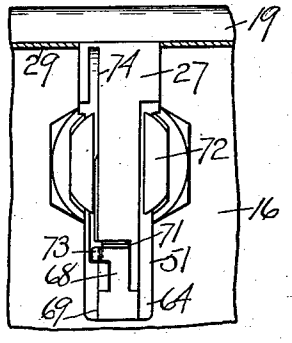


Fig. 24.

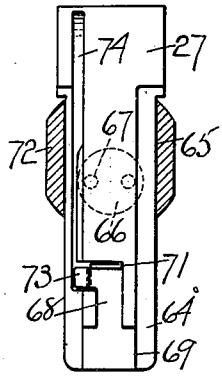


Fig. 25.

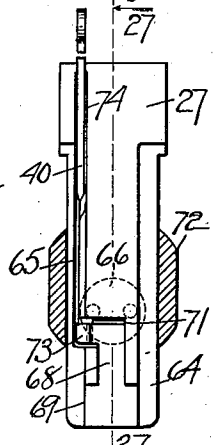


Fig. 26.

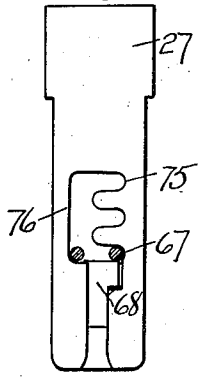


Fig. 27.

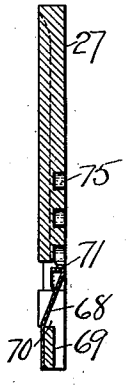


Fig. 28.

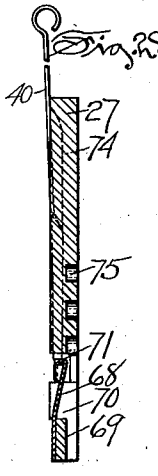


Fig. 30.

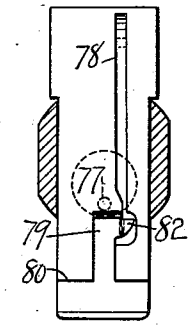


Fig. 31.

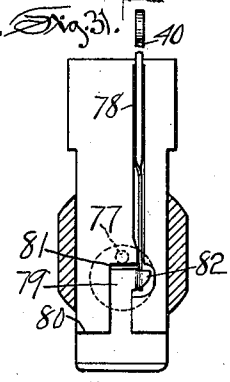


Fig. 32.

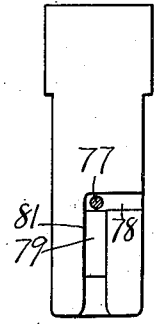


Fig. 33.

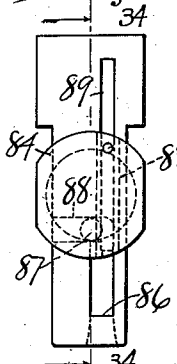


Fig. 34.

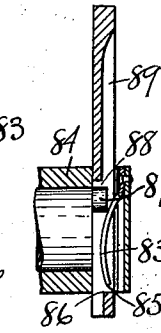


Fig. 29.

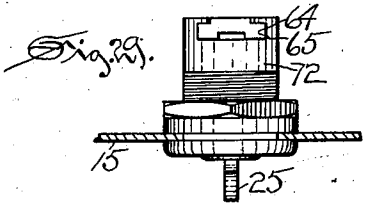


Fig. 35.



Fig. 36.



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Patented Mar. 31, 1942 2,278,044

UNITED STATES PATENT OFFICE

2,278,044

LOCK

Thomas A. Scanlan, Cleveland, Ohio, assignor to The American Hardware Corporation, New Britain, Conn., a corporation of Connecticut

Application May 11, 1939, Serial No. 273,025

26 Claims. (Cl. 70—134)

My invention relates generally to key operated locks which are employed for securing various members in closed positions and against unauthorized opening, and an object of my invention, among others, is the production of a lock of this type that is simple in construction and particularly efficient in operation. A further object of the invention is the production of a lock that may be readily assembled and secured in comparatively inaccessible places; and still another object of the invention is to provide a lock that is especially adapted for use in metal furniture and in which the lock may be installed without undue cutting away of the parts to which it is secured.

Forms of locks embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained are illustrated in the accompanying drawings, in which—

Figure 1 is a front view of a fragment of a metal drawer having my improved lock secured thereto.

Figure 2 is a view in section on a plane denoted by the dotted line 2—2 of Fig. 1.

Figure 3 is a rear view.

Figure 4 is a view on enlarged scale in cross section through the cylinder of my improved lock illustrating the manner of operating the lock bolt, the latter being in its unlocked position.

Figure 5 is a similar view but with the lock bolt in its locking position.

Figure 6 is another similar view and illustrating a manner for removing the locking bolt from the cylinder.

Figure 7 is a side view of the cylinder with the end broken away to show the connection between the plug and the lock bolt.

Figure 8 is an isometric perspective view of the detent.

Figure 9 is a similar view of the lock bolt, with the detent thereon being illustrated in dotted lines.

Figure 10 is a view similar to Fig. 1 but illustrating a modified form.

Figure 11 is a view similar to Fig. 2 but illustrating said modified form of the invention.

Figure 12 is a view in section on a plane denoted by the dotted line 12—12 of Fig. 11.

Figure 13 is a similar view on a plane denoted by the dotted line 13—13 of Fig. 11.

Figure 14 is a similar view but illustrating the lock bolt in its locking position.

Figure 15 is a view of the opposite side of the lock bolt from that shown in Fig. 14.

Figure 16 is a view in section on a plane denoted by the dotted line 16—16 of Fig. 15.

Figure 17 is a view in section on a plane denoted by the dotted line 17—17 of Fig. 15.

Figure 18 is an isometric perspective view of the spring detent.

Figure 19 is an isometric perspective view of the lock bolt with parts broken away to show construction.

Figure 20 is an isometric perspective view of the lock bolt showing the opposite side from that appearing in Fig. 19.

Figures 21 to 23 are views similar to Figs. 1 to 3 but illustrating a different form of the invention.

Figure 24 is a view in cross section through the cylinder showing the connection of the locking bolt thereto.

Figure 25 is a similar view illustrating the use of a tool for disconnecting the bolt from the cylinder.

Figure 26 is a view of the opposite side of the bolt from that shown in Fig. 24.

Figure 27 is a view in section on a plane denoted by the dotted line 27—27 of Fig. 25.

Figure 28 is a similar view illustrating the use of the disconnecting tool as shown in Fig. 25.

Figure 29 is a bottom view of the cylinder showing the locking bolt of Figs. 24 to 28 engaged therewith.

Figures 30 to 32 are views similar to Figs. 24 to 26 illustrating another form of the invention.

Figure 33 is a view illustrating a structure in which the locking element is carried by the cylinder.

Figure 34 is a view in section on a plane denoted by the dotted line 34—34 of Fig. 33.

Figures 35 and 36 are isometric perspective views of the detents employed in the devices of Figs. 24 and 30, respectively.

As hereinbefore mentioned this invention is particularly adapted for use in connection with metal furniture, and especially office furniture, and for this reason the invention is illustrated herein as applied to the drawer of a desk, a fragment of which is shown, the numeral 15 denoting the front plate of the drawer front and 16 the back plate thereof. These members are formed from thin sheet metal and they are spaced apart to provide for a certain desired thickness of the drawer front and thereby create a chamber 17. In a common form of construction one edge of the drawer front comprises interlocked elements on the front and back plates thereof, as herein shown at its top edge, the front plate 15

being bent backwardly and then downwardly to form an edge 18 and a lip 19, as shown in Fig. 2. The back plate 16 is bent backwardly at its upper edge and then upwardly to form a shoulder 20 against which the lip 19 is supported. This provides a stop for the drawer which by contact with the desk structure adjacent the opening for the drawer limits its inward movement.

In structures of this type it is common practice to secure the front and back plates of the drawer front permanently together so that access to the interior of the chamber in the drawer front after it is completed is prevented. It is therefore a purpose of the present invention to so construct the locking members which are contained in said chamber that the locking unit comprising a cylinder and a plug or barrel may be permanently secured in place with an arrangement whereby the locking bolt may be engaged with the locking unit and removed therefrom without disturbing or loosening any member of said locking unit.

The cylinder 21 of my improved lock is projected through an opening in the drawer front 15 with an escutcheon 22 on the cylinder supported against the front face of the drawer front and a nut on the rear face of said front secures the cylinder in place with its rear end preferably supported against the inner face of the back 16 of the drawer, as shown in Fig. 2.

A plug 24 is rotatably mounted in the cylinder and has a key slot for a key 25. The cylinder, plug, and key thus far described may be of any well known construction, the key having notches for positioning tumblers which may be of the leaf or pin type, in this instance of the leaf type, to permit rotation of the plug by the key and to lock the plug against rotation when the key is removed, the details of these parts not being shown, as they will be readily understood by those skilled in the art. An opening or recess 26 is formed at or through the end of the cylinder beyond the inner end of the plug and a locking bolt 27 is engaged within this opening or recess and through a hole 28 in the ledge 29 in the upper edge of the front of the drawer. This bolt has a notch 30 in one side to receive an actuating pin 31 projecting from the end of the plug 24 and located eccentrically on said plug so that when the plug is turned as by the operation of a key, the bolt will be thrown in one or the other direction.

In order to permit a ready assembly of the lock in place on the drawer and without necessitating the cutting of openings in the back 16, the bolt is so constructed and assembled in the cylinder that it may be removed and replaced without disturbing the fastening of the lock or cylinder, in this operation the bolt being removed and inserted through the hole 28. In order to retain the locking bolt in place in the cylinder a detent 32 is pivotally mounted on the bolt near its rear end, this detent being so shaped and mounted that its end in effect forms a portion of one side of the slot 30, as shown in Fig. 5. However, the detent may be depressed sufficiently to permit it to pass under the pin 31 when it is in the position shown in Fig. 6. A spring 33 operates upon the detent to hold it in a position to retain the locking bolt within the cylinder.

In the operation of assembling the device the cylinder 21 is secured in place by means of a nut 34 as shown in Fig. 2. The bolt is then inserted through the hole 28 in the upper edge of the drawer and into the opening through the cylinder, the detent having an inclined edge 35 which, coming in contact with the opening in the cylinder, will cause the detent to be depressed against the tension of the spring 33 and therefore permit the bolt to be inserted until shoulders 36 on the bolt come in contact with the edges of the openings through the cylinder. In this operation of inserting the bolt the actuating pin 31 should be turned by means of a key to the position shown in Fig. 6. When the bolt is fully inserted the detent will snap into its locking position as shown in Fig. 4.

In order to permit removal of the bolt a finger 37 is extended from one side of the detent forming a notch 38 and a groove 39 is cut into one face of the locking bolt to receive the end of a picking instrument 40 which when the bolt is projected outwardly to its full extent may be inserted through the groove and into the opening in the end of the cylinder and into engagement with the finger 37, as shown in Fig. 6. By this means the detent may be depressed to an extent to permit it to pass the actuating pin 31.

In Figures 10 to 20 I have illustrated my improved lock as embodied in a structure of the pin tumbler type, the locking bolt, however, being assembled in the same manner by insertion through a hole at the edge of a drawer and through an opening in the cylinder of the lock. The main difference in the two structures is the connection between the plug and the lock bolt. The same reference characters will therefore be applied as far as practicable to the illustrations of both forms of the lock. The cylinder is secured in place in the same manner as hereinbefore described but it has at its back end an offset 41 the center of which is in axial alignment with a plug 42 which is of common construction and which is provided with pin tumblers common to structures of this type which tumblers are positioned by means of notches in the key 25, whereby when so positioned the plug may be turned in a manner well known to those skilled in the art. Pins 43—44 project from the end of the plug for engagement in notches 46—47—48 and 49. The entrance notch 46 and the notch 48 are smaller than the notches 47 and 49, the smaller notches being adapted to receive the smaller pin 43 and the larger notches to receive the larger pin 44. The notch 46 is preferably made of angular shape for a purpose to be hereinafter described. The notches 46 to 49 are formed in one edge of a groove 50 extending lengthwise along one face of the bolt from the end of a shank 51 for about half the length of the bolt as a whole.

In assembling the bolt within the lock structure the shank of the bolt is inserted through the hole 28 in the ledge 29 of the drawer and is then inserted through the openings 26 in the cylinder. At this time the plug should be turned to such position that the smaller pin 43 will first enter the groove 50 and then by turning the plug by the aid of the key 25 the pin 43 will be rotated into the notch 46 and a continued turning movement will then locate the large pin in the notch 47 and then the small pin in the notch 48, and when the bolt has been fully retracted the large pin 44 will rest in the notch 49, in this position the pins 43 and 44 resting in the notches as shown in Fig. 15 of the drawings.

In order to prevent disengagement of the bolt from within the lock structure a detent is provided, this detent including a finger 53, for loca-

tion in a groove 54 in the opposite face of the bolt from the groove 50. A recess 55 opens out from one side of the groove 54, a depression 56 is formed within the recess, and a hole 57 opens through the bottom of the depression. A head 58 of the detent structure is shaped to enter the recess 55, a rest 59 is located on the bottom of the depression 56, and a retaining lip 60 extends through the hole 57. A detent 61 in the form of a bend at the end of the finger 53 is positioned to enter a hole 62 in the bottom of the notch 46 to be located in said notch so that movement of the pin 43 into said notch is prevented. From this it will be seen that rotation of the plug 42 to an extent to turn the pin 43 into the notch 46 will be stopped and the locking bolt cannot therefore be removed from the cylinder.

The head 58, rest 59, and retaining lip 60 are loosely engaged within the recess 55, depression 56 and hole 57 so that the detent as a whole may be slid lengthwise sufficiently to cause the detent 61 to be moved out of the hole 62 and into the groove 54, the curved shape of the detent and the spring of the finger 53 effecting this result when a little pressure is applied to the end of the head 58, as by means of an instrument thrust into an extension 63 of the groove 54, the releasing position of the detent being shown in Fig. 17 of the drawings and the locking position being shown in Fig. 16. Said detent is drawn backwardly into the position shown in Fig. 13 by engaging the hooked end of the instrument inserted into the extension 63 of the groove 54 with the shoulder in the base of the finger 53.

In that form of the device shown in Figs. 21 to 29 the arrangement for retaining the locking bolt within the cylinder is slightly different from that hereinbefore described. The bolt in this structure is of inverted T-shape in cross section including lips 64 fitting within the recess of the opening 65 in the cylinder, as shown in Fig. 29. A plug 66 carries two pins 67 as in the devices of Figs. 13 to 17, but the pins are preferably of the same size. A detent 68 is secured in a recess 69 on one side of the bolt and projects through a hole 70 therein to the opposite side of the bolt. Its end 71 is bent to form a stop which engages the pins 67 and thereby prevents removal of the bolt from its recess in the cylinder 72 and as shown in Figs. 26 and 27 of the drawings. The detent is provided with a lip 73 projecting from one side in line with a groove 74 through which the instrument 40 may be inserted to spring the detent out of position to engage the pins 67. When thus sprung out of such position the bolt may be withdrawn from its recess in the cylinder. The pins 67 constitute teeth to engage notches 75 in a recess 76 as in the device of Figs. 13 to 17.

The devices shown in Figs. 30 to 32 are quite similar to the devices just described with the exception that a single pin 77 is used, said pin working in a groove 78 which permits a half rotation of the plug only in the operation of the bolt. The detent 79 is substantially the same as that shown in Figs. 24 to 28, being secured in a recess 80 on one side of the bolt and projecting through a hole therein to the opposite side where it acts as a dog to prevent removal of the bolt, its end in fact constituting one side of the groove 78 opposite a hole 81 through the bolt. A lip 82 is located on the opposite side of the detent from the structure shown in Figs. 24 to 28.

In the devices shown in Figs. 33 and 34 a retainer 83 for the bolt is secured to the cylinder 84, its end 85 being located in the path of movement of a shoulder 86 on the bolt to prevent removal of the latter. A pin 87 operates in a groove 88 in the bolt as in the structure hereinbefore described. The tool 40 may be inserted through a groove 89 to engage the detent and remove its end from the path of the shoulder 86 whereupon the bolt may be removed as in the devices hereinbefore mentioned.

I claim:

1. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber through an edge of said wall, of a lock cylinder extending through another hole into said chamber and having an opening therein, a locking bolt insertable into the opening in said cylinder through said first mentioned hole to said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, and means supported and carried by said bolt and movable with it in its reciprocating movement for retaining it within said cylinder.

2. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber through an edge of said wall, of a lock cylinder extending through another hole into said chamber and having an opening therein, a locking bolt insertable into said opening in the cylinder through said first mentioned hole into said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, and means supported upon said locking bolt and movable with it in its reciprocating movement for retaining said bolt within said opening in said cylinder.

3. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber through an edge of said wall, of a lock cylinder extending through another hole into said chamber and having an opening therein, a key plug rotatably mounted in said cylinder, a locking bolt insertable into the opening in said cylinder through said first-mentioned hole into said chamber, an operative connection between said key plug and said bolt for operation of the latter, and means supported and carried by said bolt and movable with it in its reciprocating movement for retaining it within said opening.

4. The combination with the drawer of an article of metal furniture, said drawer having a front plate including front and rear walls creating a chamber therebetween closed at one edge with a hole opening through said edge into said chamber, of a lock cylinder secured to said front wall and extending crosswise of said chamber and having an opening therein, a locking bolt insertable into said cylinder opening through said hole into said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, a retaining member included in said connection, and means supported and carried by said bolt and movable with it in its reciprocating movement for retaining it within said opening in said cylinder, said retaining member being located directly in the path of movement of said retaining means carried by the bolt to unyieldingly dog and prevent backward movement of the bolt.

5. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber through an edge of said wall, of a locking cylinder extending through another hole into said chamber and having an opening

therein, a locking bolt insertable into said opening in the cylinder through said first mentioned hole into said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, a retaining member included in said connection and a spring actuated detent within said cylinder arranged to permit insertion of said bolt but to prevent its removal from said opening in said cylinder, said retaining member being located directly in the path of movement of said spring actuated detent carried by the bolt to unyieldingly dog and permit backward movement of the bolt.

6. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber in said wall, of a locking cylinder extending within said chamber and having an opening therein, a locking bolt insertable into said opening in the cylinder through said hole into said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, and a detent attached to said locking bolt and operable to permit insertion of said bolt into the opening in the cylinder and also operable to prevent removal of said bolt from the opening in the cylinder.

7. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber in said wall, of a lock cylinder extending within said chamber and having an opening therein, a locking bolt insertable into said opening in the cylinder through said hole into said chamber, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, means for retaining said bolt within said opening in said cylinder, and means to permit insertion of a tool to operate said retaining means to permit removal of said locking bolt from said opening through said hole.

8. A locking mechanism including a cylinder having an opening therein, a locking bolt insertable into said opening, key operated means within the cylinder, an operative connection between said key operated means and said bolt, said connection including a pin, and a detent mounted on the bolt and engageable with said pin to prevent removal of the bolt from the cylinder, said detent being movable to permit insertion of the bolt into its operative position.

9. A locking mechanism including a cylinder having an opening therein, a locking bolt insertable into said opening, key operated means within the cylinder, an operative connection between said key operated means and said bolt, said connection including a movably mounted pin and a detent movably mounted to permit insertion of the bolt into said opening and also to prevent removal of said bolt from said opening, and means on said detent for operation thereof to permit removal of the bolt from said opening.

10. A locking mechanism including a cylinder having an opening therein, key operated mechanism included within said cylinder, a locking bolt insertable into said opening, an operative connection between said key operated mechanism and said bolt, said connection including a movably mounted pin and an opening in said bolt to receive said pin, a detent movably mounted on said bolt to form a portion of one side of said opening therein in one position to prevent the removal of the bolt from said cylinder opening, said detent being yieldable to permit insertion of the bolt into said cylinder opening, and means on said detent for reception of a tool to move the detent into position to permit removal of said bolt.

11. A locking mechanism including a cylinder having an opening therein, key operated means within said cylinder, a locking bolt insertable into said opening and having an opening in one side and a lengthwise groove therein, a detent movably mounted on said bolt to form a portion of one side of said opening in said bolt, said detent being yieldable to permit insertion of the bolt into said cylinder opening but operable to prevent removal of said bolt when the detent is in its normal position, and means on said detent for engagement of a tool inserted through said groove to move the detent into position to permit removal of said bolt.

12. A locking mechanism including a cylinder having an opening therein, key operated mechanism within said cylinder, a locking bolt insertable into said opening and having a groove extending lengthwise therein with notches in one side of said groove, a pair of pins on said key operated mechanism engageable in said notches to operate the bolt, and a detent movably attached to the bolt for engagement with one of said pins to prevent rotation of said pin to effect removal of the bolt from said opening.

13. A locking mechanism including a cylinder having an opening therein, a locking bolt insertable into said opening and having a lengthwise groove with notches in one side thereof, a plug within said cylinder, a pair of pins on said plug to engage said notches to effect lengthwise movement of said bolt, and a spring detent attached to said bolt and movable to permit insertion of the bolt into said opening and also to prevent removal of the bolt from said opening.

14. A locking mechanism including a cylinder having an opening therein, a key plug rotatably mounted in said cylinder, a pair of pins projecting from the end of said plug, a locking bolt insertable into said opening and having a lengthwise groove therein and notches opening out of said groove, a detent attached to the locking bolt within said groove and yieldable to permit insertion of the bolt into said opening but movable to prevent removal of the locking bolt from said opening, and means for engagement with a tool for movement of said detent to permit removal of the bolt from said opening.

15. A locking mechanism including a cylinder having an opening therein, a key plug rotatably mounted in said cylinder, a pair of pins projecting from said plug, a locking bolt insertable into said opening and having a lengthwise groove with notches in one side of said groove for engagement with said pins to effect lengthwise movement of the bolt, and a spring detent engaged within one of said notches to prevent excessive rotation of said key plug, said detent being movable from within the notch to permit rotation of said plug to an extent to permit removal of said bolt from said opening.

16. A locking mechanism including a cylinder having an opening therein, a key plug rotatably mounted in said cylinder, a pair of pins projecting from the end of said plug, a locking bolt insertable into said opening and having a lengthwise groove with notches in one side of said groove for engagement of said pins to effect lengthwise movement of the bolt, and a detent engageable in one of said notches to prevent ex-

cessive rotation of said key plug, said detent being movable for disengagement from said notch to permit rotation of said key plug to an extent to permit removal of said locking bolt from said cylinder.

17. The combination with the chambered wall of a closure for an opening with a hole leading into the chamber in said wall, of a lock cylinder extending within said chamber and having an opening therein, a locking bolt insertable through said hole into the opening in said cylinder, key operable locking mechanism within said cylinder, an operative connection between said mechanism and locking bolt, and means attached to said cylinder and engageable with said locking bolt for retaining the latter within said opening in said cylinder.

18. In combination with a chambered member having a hole through one wall thereof, a lock cylinder extending through another wall into the chamber in said member and secured in said wall, a key operated locking member secured in said cylinder, a locking bolt extending through said hole for connection with said cylinder, interengaging means between said cylinder and locking bolt arranged to effect said connection by movement of said locking bolt independently of any movement of said cylinder or of said key operated member from their fixed positions, and an operative connection between said key operated member and said locking bolt.

19. In combination with a chambered member having a hole through one wall thereof, a lock cylinder extending through another wall into the chamber in said member and fixedly secured in said wall, a key operated locking member fixedly secured in said cylinder, a locking bolt extending through said hole for connection with said cylinder, interengaging connecting means between said cylinder and locking bolt arranged to effect said connection independently of any movement of said cylinder or key operated member from their fixed positions, and an operative connection between said key operated member and said locking bolt.

20. In combination with the chambered wall of a closure, said wall having a hole through one edge thereof, a lock cylinder extending into the chamber in said wall and secured in fixed position therein, a key operated locking member secured in said cylinder, a locking bolt extending through said hole for connection with said cylinder, interengaging connecting means between said cylinder and locking bolt arranged to effect said connection by movement of said bolt independently of any movement of said cylinder or key operated member from their fixed positions, and an operative connection between said key operated member and said locking bolt.

21. In combination with the chambered wall of a closure, said wall having a hole through one edge thereof, a lock cylinder extending into the chamber in said wall and secured in a fixed position therein, a key operated locking member secured in said cylinder, a locking bolt extending through said hole for connection with said cylinder, interengaging connecting means between said bolt and cylinder arranged to effect said connection while maintaining the fixed positions of said lock cylinder and key operated member therein, and an operative connection between said key operated member and said locking bolt.

22. In combination with a chambered member having a hole through one wall thereof, a locking unit secured in a fixed position in one wall of the chamber in said chambered member, said unit comprising a lock cylinder secured in said wall and a key operated member secured in a fixed position in said cylinder, a locking bolt extending through said hole into engaging position with said locking unit, interengaging connecting means between said bolt and locking unit arranged to effect said connection while maintaining the fixed position of said locking unit, and an operative connection between said key operated member and said locking bolt.

23. In combination with a chambered wall of a closure having a hole in one wall thereof, a lock cylinder extending into the chamber through another wall thereof and secured in a fixed position therein, a key operated locking member secured in a fixed position in said cylinder, a locking bolt extending through said hole into position for engagement with said cylinder, interengaging connecting means between said cylinder and locking bolt arranged for firm, unyielding, longitudinal movement of the locking bolt in a straight line in a fixed plane at right angles to the axis of the lock cylinder to effect interengagement of said locking bolt and cylinder, and an operative connection between said key operated means and said locking bolt.

24. In combination with a chambered member having a hole through one wall thereof, a lock cylinder extending through another wall into the chamber in said member and fixedly secured in said wall, a key operated member fixedly secured in said cylinder and having a crank pin extending from its end, a locking bolt extending through said hole into said chamber into engaging position with said cylinder, interengaging connecting means between said locking bolt and cylinder for effecting their engagement by movement of the locking bolt independently of any movement of the cylinder or of said key operated member from their fixed positions, and an operative connection between said locking bolt and key operated member including an angularly shaped slot in said locking bolt into which the pin from the end of the key operated member extends.

25. In combination with the chambered front of a drawer or the like having a hole through one wall thereof, a lock cylinder member extending through another wall into the chamber in said front and fixedly secured therein, a key operated member fixedly secured in said cylinder member, a locking bolt member extending through said hole for connection with said cylinder member, interengaging connecting means between said members arranged to effect said connection by movement of the locking bolt member independently of any movement of the cylinder or key operated members from their fixed positions, a detent included in said connection and mounted on one of said cylinder or locking bolt members for yielding engagement with and disengagement from the other member by force applied to said locking bolt member, and an operative connection between said locking bolt and key operated member.

26. In combination with the chambered front of a drawer or the like having a hole through one wall thereof, a lock cylinder member extending through another wall into the chamber in said front and fixedly secured in said wall, a key operated device fixedly secured in said cylinder member, a locking bolt member extending through said hole for connection with said cylinder member, interengaging connecting means be-

tween said members arranged to effect said connection by movement of the locking bolt member independently of any movement of the cylinder member or key operated device from their fixed positions, a detent included in said connection and yieldingly mounted on said locking bolt member for yielding engagement with and disengagement from said cylinder member by force applied to said locking bolt member, and an operative connection between said key operated device and said locking bolt member for operation of the latter.

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