Sept. 16, 1924. 1,508,668

C. J. PRINZLER

LOCK

Filed June 26, 1922 4 Sheets-Sheet 1

Fig. 1.

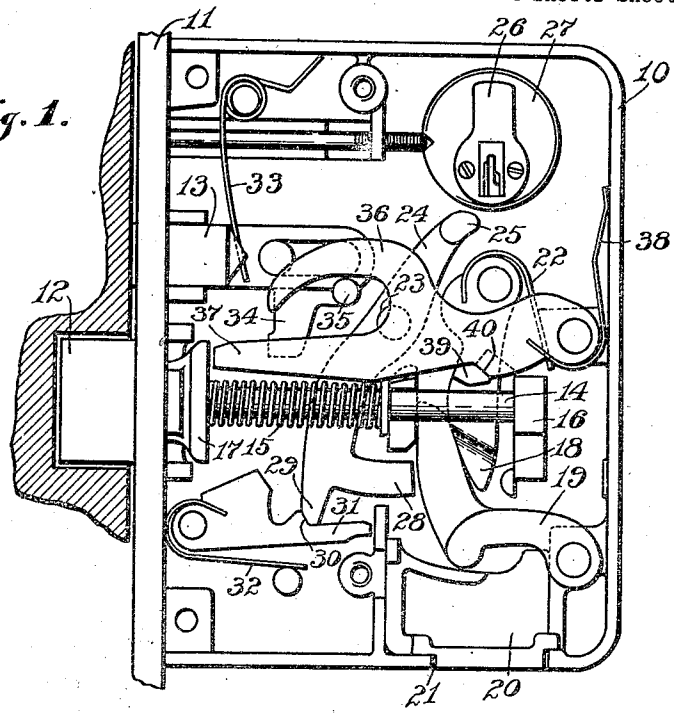
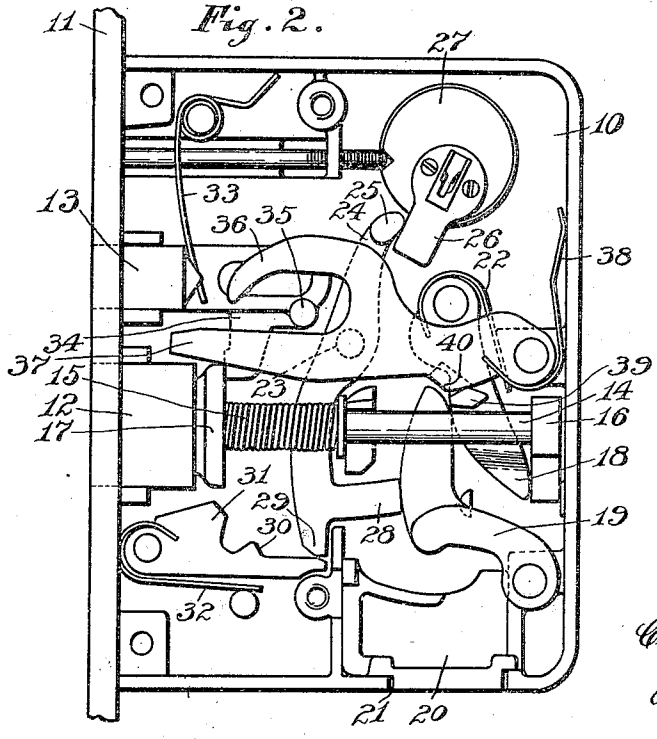



Fig. 2.




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Sept. 16, 1924. 1,508,668

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Filed June 26, 1922 4 Sheets-Sheet 2

Fig 3.

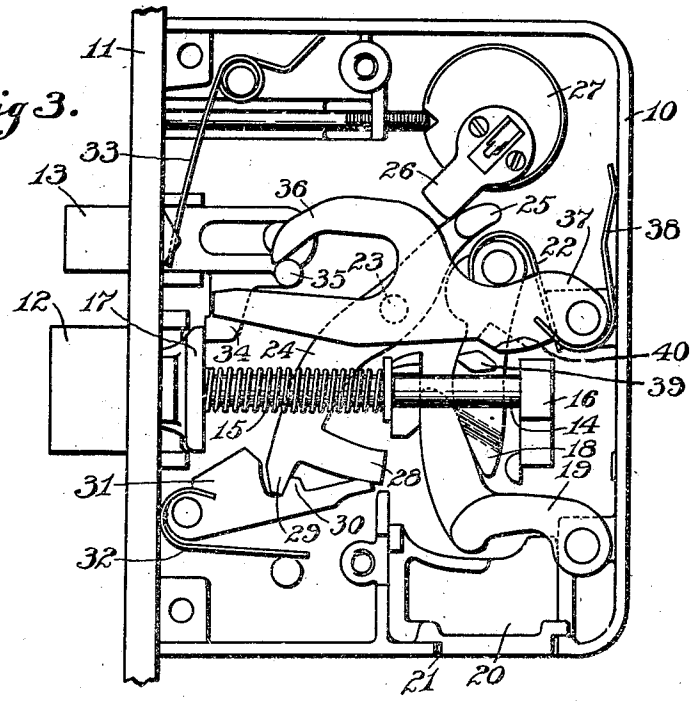
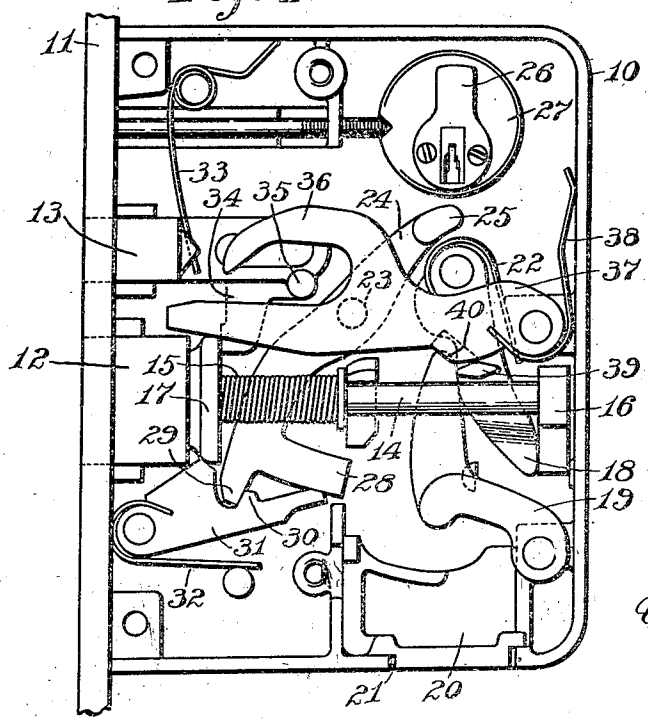



Fig. 4.




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Filed June 26, 1922 4 Sheets-Sheet 3

Fig. 5.

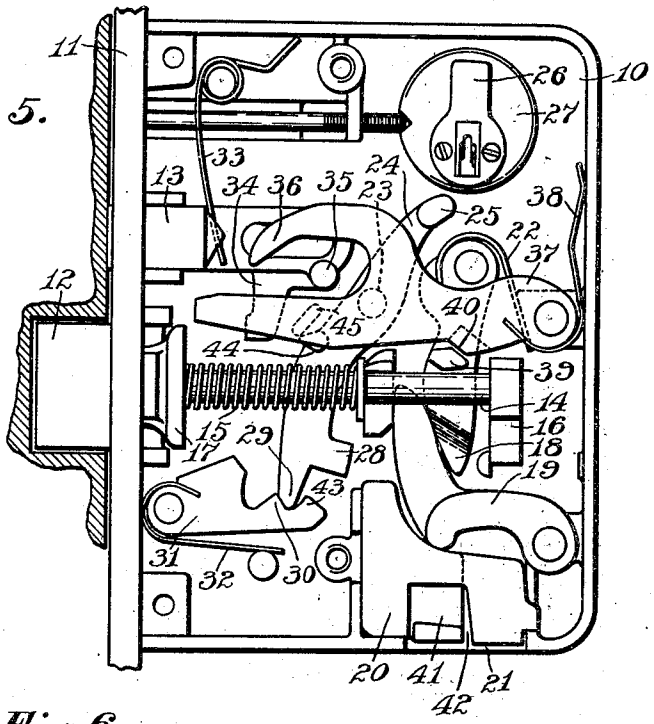
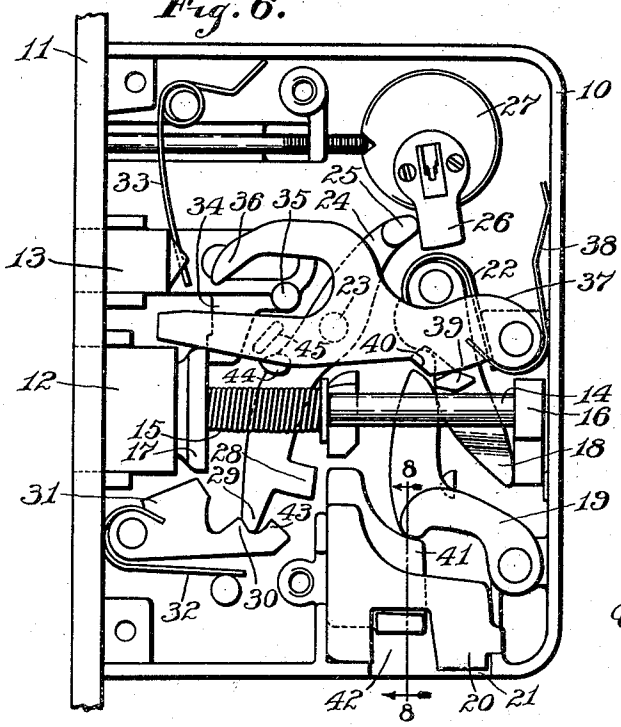



Fig. 6.




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Sept. 16, 1924. 1,508,668

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Filed June 26, 1922 4 Sheets-Sheet 4

Fig. 7.

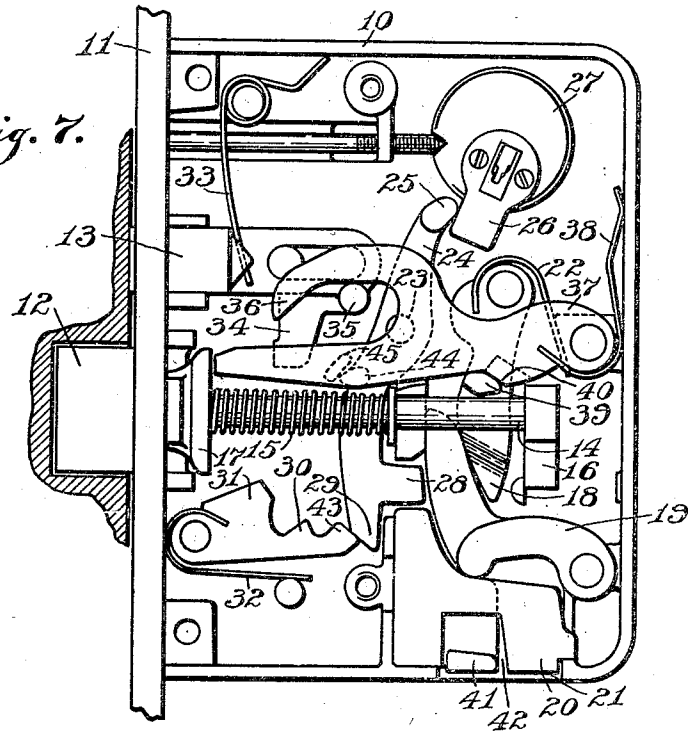
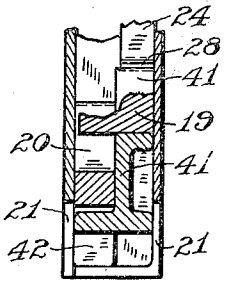



Fig. 8.




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Patented Sept. 16, 1924. 1,508,668

# UNITED STATES PATENT OFFICE.

CARL J. PRINZLER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO VONNEGUT HARDWARE COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

## LOCK.

Application filed June 26, 1922. Serial No. 570,846.

*To all whom it may concern:*

Be it known that I, CARL J. PRINZLER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Lock, of which the following is a specification.

The object of my invention is to provide a simple and efficient lock mechanism, preferably, though not necessarily, of the latch bolt type, of such character that its bolt may be locked in retracted position by key controlled mechanism which becomes active, in conjunction with the bolt after a preliminary setting by the key controlled means, by independent retraction of the bolt.

The accompanying drawings illustrate my invention: Fig. 1 is an elevation of an embodiment of my invention, the cover being removed and the parts being shown in full lines in the position they occupy when the lock is in normal association with a jamb; Fig. 2 is a similar view showing the position of the parts resulting from key retraction of the bolt; Fig. 3, a similar view showing the key setting of the means for locking the bolt in retracted position; Fig. 4, a similar view showing the positions of the parts when the bolt is locked in retracted position; Fig. 5 is a view similar to Fig. 1 showing a modification of my invention; Fig. 6 is a view similar to Fig. 5 showing a retraction of the bolt by means manipulated from the exterior of the door; Fig. 7 is a view similar to Fig. 5 showing the bolt locked against operation by said exterior means; and Fig. 8 is a detail section on line 8—8 of Fig. 6.

In Figs. 1 to 4 of the drawings, 10 indicates a suitable enclosing casing provided with the face plate 11, through which the latch 12 and auxiliary bolt 13 are projected. In the present instance, the bolt 12 is of the latch type and pivotally mounted in the face plate 11. Connected to bolt 12 is a shank 14 normally urged outwardly by a spring 15 and provided with an operating head 16 and locking shoulder 17.

Arranged adjacent head 16 is a lever 18 engaged by lever 19 which may be shifted in one direction by means of a sliding block 20 which is accessible through an opening 21 in the casing so that it may be manipulated by a suitably arranged finger piece or operating lever not shown. Levers 18 and 19 and block 20 are normally held in the position shown in Fig. 1 by means of spring 22 acting upon lever 18.

Pivoted at 23 in casing 10 is a key-controlled lever 24, the end 25 of which is projected into the path of movement of finger 26, forming part of the key controlled lock 27. Lever 24 at its end opposite end 25 is provided with a finger 28 which may be driven into engagement with lever 19 so as to actuate it to retract bolt 12. The last mentioned end of lever 24 is also provided with a cam finger 29 which co-operates with a cam ridge 30 on a spring catch 31 pivoted in the casing and normally urged in one direction by spring 32.

The auxiliary bolt 13 is normally urged outwardly by spring 33 and is provided with a tail 34 which is engaged in one direction by the locking shoulder 17. The auxiliary bolt carries a pin 35 which engages the cam finger 36 carried by the dead lock 37 which is yieldingly urged downwardly by spring 38, the arrangement being such that when the latch bolt and auxiliary bolt are simultaneously projected inwardly by engagement with the strike plate, the dead lock will ride upon shoulder 17 and, as the latch bolt is projected outwardly into the edge of the strike plate, the shoulder 17 is carried out beyond the dead lock so that the lock may drop down behind the shoulder. In order to retract the dead lock so as to permit retraction of the latch bolt, lever 18 is provided with a finger 39 which engages the cam shoulder 40 on the dead lock and is permitted a limited movement before coming into engagement with the head 16.

With the parts in the positions shown in Fig. 1, it will be noted that upward movement of block 20 will act upon lever 19 to swing lever 18 against head 16 and retract the latch bolt 12, the auxiliary bolt being retracted at the same time and the dead lock riding on the shoulder 17. Retraction of the latch 12 may also be obtained by key manipulation of lever 24 acting through finger 28 upon levers 18 and 19. In both of the above cases, the latch bolt is automatically projected by spring 15.

In order that the lock may be rendered inactive during a desired period, as for instance during the day time, the finger 26 will be turned in the opposite direction to the position indicated in Fig. 3 thus swing-

ing cam finger 29 over cam ridge 30 so that catch 31 may move up to the position shown in Fig. 3. This may be done at any time and the key removed. Upon the first inward actuation of the latch bolt 12, either by engagement with the strike of the door when the door is closed or by manual manipulation of the latch, shoulder 17 will ride over catch 31 until it can spring back behind the shoulder and thus retain the latch in retracted position. It will be noted that by reason of the relative positions of the various parts, the coaction between shoulder 17 and catch 31 is such that the latch bolt is crowded back by cam action which thus prevents improper partial projection of the latch bolt.

In order to restore the latch bolt to normal position, the key controlled finger 26 is turned in the opposite direction so as to shift cam finger 29 back to the position indicated in Fig. 1, thus withdrawing catch 31 from behind shoulder 17 and permitting spring 15 to project the latch bolt.

In the embodiment illustrated in Figs. 5, 6, 7 and 8 I have provided a mechanism wherein the latch bolt 12 may be retracted by a second operating finger piece or lever and the key operated mechanism is so arranged that this second member may be rendered inoperative. To this end the thickness of the sliding block 20 is reduced so that a second sliding block 41 may be accommodated in the space occupied by the sliding block shown in Figs. 1 to 4. The block 20 is provided with a slot 42 to accommodate the widened operating portion of the sliding block 41 so that in the opening 21 there are two operating members for operating the bolt 12. In addition to the cam shoulder 30 on the catch 31 I provide a second cam shoulder 43 also adapted to be engaged by the end 29 of the lever 24. The arm 28 is slightly shortened so that it will not engage the lever 19 but will, when retracted, lie in the path of the sliding block 41 and prevent this block from being raised. In normal operation of the latch the end 29 of the lever 24 lies between the two cam shoulders 30 and 43. In this position either one of the sliding blocks 20 or 42 may be elevated to operate the lever 18 to retract the bolt 12. If it is desired to lock the latch against operation by the sliding block 41 the finger piece 26 is rotated to the right, looking at Fig. 5, which will rock the lever 24 until its end passes the cam shoulder 43. This will project the arm 28 into the path of the sliding block 42 so that this block cannot be raised and the latch is therefore locked against operation by this sliding block. In event it is desired to render the latch 12 inactive during any desired period, the finger 26 is swung in an opposite direction by means of the key and the lever 24 rocked until its end 29 passes the cam shoulder 30 which will permit the latch 31 to rise in a position to engage in front of the shoulder 17 when the bolt is independently retracted either by the sliding blocks 20 and 41 or in any other manner.

The lever 24 is provided with a finger 44 arranged to engage a lug 45 on the dead lock 37, when said lever 24 is in an intermediate position, shown in Fig. 5 or in position to render active the latch 31, to prevent said dead lock from dropping behind shoulder 17.

I claim as my invention:

1. The combination with a latch normally projected into locking position, of key controlled means for locking said latch in retracted position, said means being set in operative position by the key and rendered active to lock the latch in its retracted position by the independent retraction of the latch.

2. The combination with a latch normally projected into locking position, of key controlled means for locking said latch in retracted position and key controlled mechanism for retracting said latch, said locking means being set in operative position by the key and rendered active to lock the latch in its retracted position by the independent retraction of the latch.

3. The combination with a latch normally projected into locking position, of key controlled means for locking said latch in its retracted position, key controlled mechanism for retracting the latch, and means independent of the key controlled retracting means for retracting the latch, said locking means being set in operative position by the key and rendered active to lock the latch in its retracted position by the independent retraction of the latch.

4. The combination with a latch normally projected into locking position, of a stop movable with said latch, a dog normally urged into the path of said stop to engage the same when the latch is retracted, and key controlled means for holding said dog out of the path of said stop and permitting the dog to move under its normal urge when operated to release the dog.

5. The combination with a latch normally projected into locking position, of a stop movable with said latch, a dog normally urged in the path of said stop, key controlled mechanism for retracting said latch, and means operated from said key controlled mechanism for holding the dog out of the path of said stop and permitting the dog to move under its normal urge when operated to release the dog.

6. The combination with a latch normally projected into locking position, of a key operated lever, key controlled mechanism for retracting the latch and means for holding

the latch in retracted position, said lever in one position permitting said holding means to occupy a position to hold the latch in retracted position, in a second position rendering said means ineffective and in a third position rendering said key controlled mechanism effective to retract the latch.

7. The combination with a latch normally projected into locking position, of means for holding said latch in its retracted position normally urged into holding position, a lever and key controlled means for oscillating said lever, said means when operated in one direction operating said lever to permit said holding means to move to holding position and when operated in a reverse direction operating said lever to move said holding means to inoperative position to permit the normal operation of the latch

8. The combination with a latch normally projected into locking position, of an operating arm for retracting said latch, key controlled means for engaging said arm for operating the same, means independent of said key controlled means for engaging said arm for operating the same and means set into locking position for holding said latch retracted and operated by the manipulation of the key, said holding means being rendered active by the independent retraction of said latch.

9. The combination with a latch normally projected into locking position, of means for holding said latch in its retracted position, key operated means for retracting said latch and for setting said locking means in operative position, said means being rendered active by the independent retraction of the latch, and means independent of said key operated means for retracting said latch.

10. The combination with a latch normally projected into locking position, of key controlled means for locking said latch in its retracted position, said means being set in operative position by the key and rendered active to lock the latch in its retracted position by the independent retraction of the latch and rendered inactive by the manipulation of the key.

11. The combination with a latch normally projected into locking position, of a dog normally urged into position to lock said latch in retracted position, a rocking lever, one end of said lever being arranged to engage and hold said dog out of operative position, means operated by said end of the lever for retracting the latch, and a key operated member engaging the opposite end of the lever to rock the same in one direction to retract the latch and in an opposite direction to permit the dog to move to locking position.

12. The combination with a latch normally projected into locking position, of a dog normally urged into position to lock said latch in retracted position, a rocking lever, one end of which is arranged to engage and hold said dog out of operative position, means operated by said end of the lever for retracting the latch, key operated means engaging the opposite end of said lever to rock the same in one direction to retract the latch and in an opposite direction to permit the dog to move to locking position, and means independent of said lever for retracting the latch.

13. The combination with a latch normally projected into operative position, of means for locking said latch in retracted position, a key operated member for setting said means in operative position, said means being rendered active to lock the latch in its retracted position by the independent retraction of the latch, a plurality of members for retracting said latch, and means whereby one of said members is locked against operation by said key operated member.

14. The combination with a latch normally projected into operative position, of a dog for locking said arm in retracted position, a key operated arm for holding said dog out of locking position, said dog being set in locking position by the manipulation of said arm and rendered active to lock the latch in its retracted position by the independent retraction of the latch, a plurality of operating members for the latch, and means on said arm for locking one of said members against operation.

15. The combination with a latch normally projected into locking position, a dog formed to co-act with the latch to hold it in retracted position, and key controlled means to position said dog in inactive position or in active position to restrain the latch in retracted position upon independent retraction of the latch.

16. The combination with a latch normally projected into locking position, of a dog normally urged to co-act with the latch to hold it in retracted position, and key controlled means to position said dog in inactive position or in active position to restrain the latch in retracted position upon independent retraction of the latch.

17. The combination with a latch normally projected into operative position, of a retracting shoulder connected to said latch, and a stop shoulder connected to said latch, a lever for engaging said retracting shoulder to retract the latch, a pair of independently operating members for engaging said lever to operate the same to retract the latch, a dog normally urged into active position to engage said stop to hold the latch in its retracted position, and a key operated lever having a finger for holding said dog in inactive position, and a second finger arranged to be projected in the path of one of said

operating members to prevent the same from operating to retract the latch.

18. The combination with a latch normally projected into latching position having a stop and a retracting shoulder, of a lever arranged to engage said shoulder for retracting the latch, a member engaging said lever to operate the same, a dog normally urged into active position for engaging said stop to hold the latch in retracted position, a key operated lever having a portion arranged to engage said dog to hold the same in inactive position and having a portion arranged to engage said first mentioned lever to operate the same to retract the latch.

In witness whereof, I CARL J. PRINZLER have hereunto set my hand at Indianapolis, Indiana, this 15th day of June, A. D. one thousand nine hundred and twenty two

CARL J. PRINZLER