Jan. 15, 1929. 1,699,370

E. R. MENZEL

LOCK

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Fig. 1.

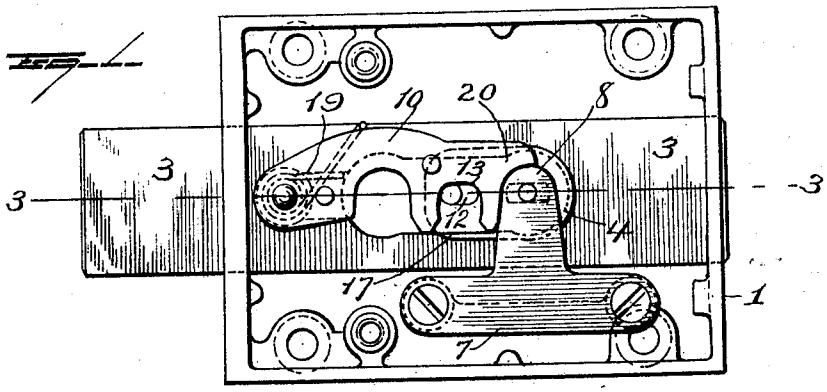


Fig. 2.

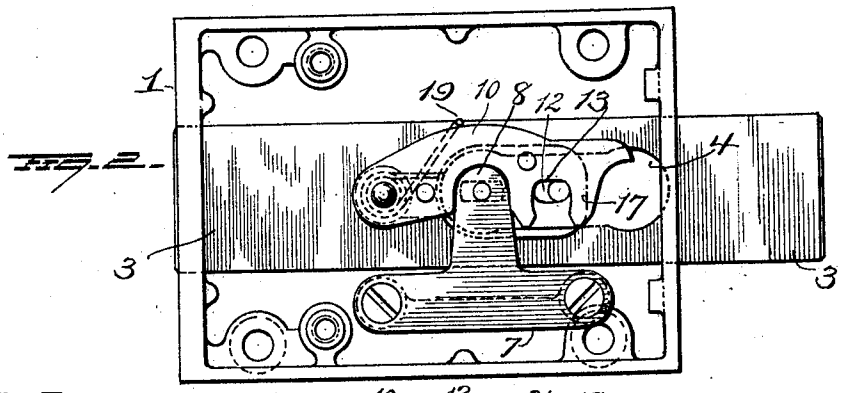


Fig. 3.

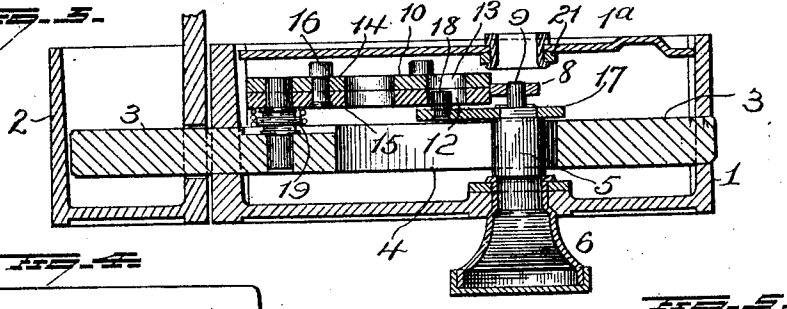


Fig. 4.

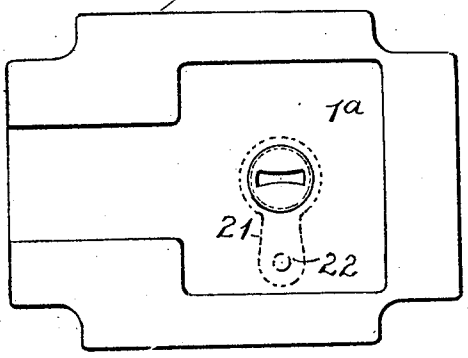


Fig. 5.

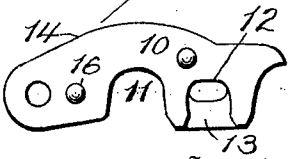
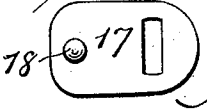


Fig. 6.



Inventor

E. R. Menzel

By Seymour & Bright

Attorneys

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E. R. MENZEL

LOCK

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Fig. 1.

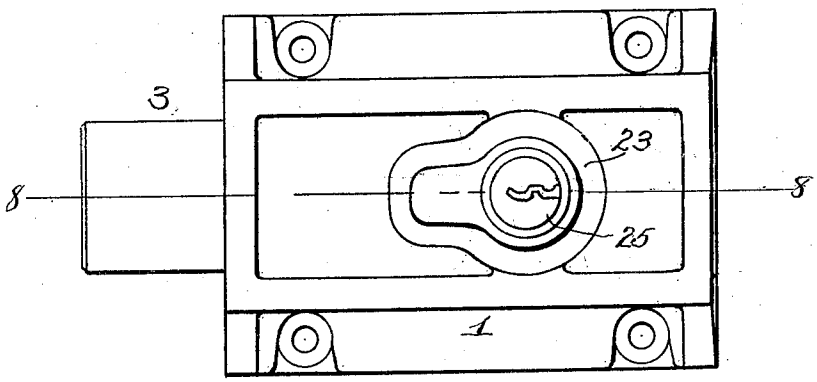


Fig. 2.

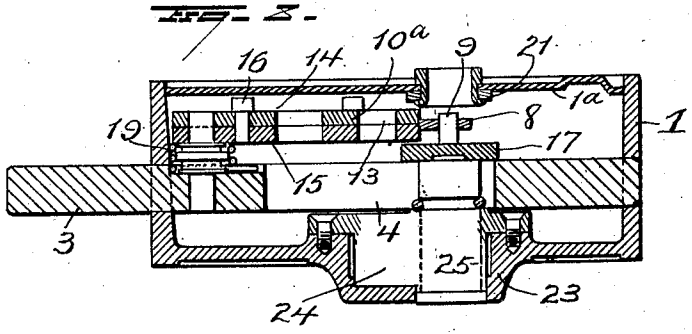
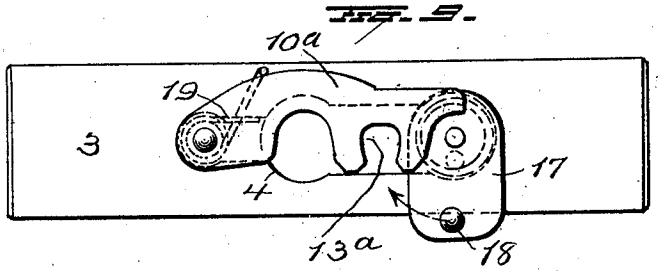


Fig. 3.



Inventor

E. R. Menzel

By Seymour & Wright

Attorneys

Patented Jan. 15, 1929. 1,699,370

UNITED STATES PATENT OFFICE.

EDMUND R. MENZEL, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE AND TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

LOCK.

Application filed November 13, 1925. Serial No. 68,736.

This invention relates to an improvement in locks and more particularly to those of the rim type, in which the bolt is deadlocked at the ends of its throw,—one object of the invention being to provide simple and efficient means for operating and deadlocking the long-throw bolt of a rim lock.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings,—

Figure 1 is a face view of a rim lock with the back plate removed, showing an embodiment of my invention.

Figure 2 is a similar view showing the bolt at the opposite end of its throw to that shown in Figure 1.

Figure 3 is a sectional view, on line 3—3 of Figure 1.

Figure 4 is a view of the back plate and the rollback carried thereby.

Figure 5 is a view of the locking tumbler.

Figure 6 is a view showing the rollback lever which cooperates with the locking tumbler.

Figure 7 is a view in elevation of a rim lock provided with inside key operated means.

Figure 8 is a sectional view on the line 8—8 of Figure 7, and,

Figure 9 is a view showing the bolt, tumbler and rollback lever employed in the construction shown in Figure 8.

A rim lock casing is shown at 1 and a keeper at 2 for a bolt 3 which is mounted to move longtiudinally through the casing and enter the keeper. This bolt is provided with an elongated slot 4 through which the shank portion 5 of a knob 6 passes. A plate or bracket 7 is secured within the casing 1 at one side of the bolt 3 and is provided with an arm 8 projecting partially across the bolt. This arm is made with a hole which receives a small pin 9 projecting from the knob stem.

Pivotally mounted upon the bolt 3 near one end of the slot 4 therein, is a locking tumbler 10 having a recess 11 for the accommodation of the bracket arm 8 when the bolt 3 is at one end of its throw. The locking tumbler is also provided near its free end with a closed slot 12 and an open slot 13. The locking tumbler 10 will preferably be made of two plates 14 and 15 rigidly secured together as indicated at 16,—the open slot 13 being formed in the plate 14 and the closed slot 12 being formed in the plate 15. Mounted to rotate with the stem of the knob is a rollback arm or lever 17 and this lever is provided with a pin 18 which enters the closed slot 12 of the locking tumbler. A spring 19 operates normally to press the locking tumbler in a direction toward the bracket arm 8 and when the parts are in the position shown in Figure 2 the recess 11 of the tumbler receives the bracket arm 8 and the pivotal mounting of the tumbler on the bolt is on a dead center with the axis of the knob spindle, so that the bolt 3 will be held deadlocked. When the knob is turned in one direction, due to the cooperation of the pin 18 on the rollback lever 17 with the slotted portion 12 of the tumbler, the tumbler will be turned on its pivotal mounting and made to ride past the bracket arm 8 (at the same time causing movement of the bolt 3 in one direction) and become disposed at one side of said bracket arm as shown in Figure 1, the locking tumbler being provided with an end portion 20 to engage said bracket arm whereby the bolt 3 will be deadlocked. It will be observed that in each position of the bolt 3, the pivot of the tumbler, the axis of the knob stem or spindle and the pin 18 on the rollback lever 17 will be in alignment.

The cover or back plate 1^a of the casing carries a rollback cam 21 to be operated by means of an outside key controlled lock (such as a cylinder lock for example) and a pin 22 on the rollback cam 21 enters the open slot 13 of the tumbler. It will be readily understood that when the rollback cam is operated by means of the key controlled lock, the bolt 3 will be moved from one end to the other of its throw and from one deadlocked position to another in the manner substantially as hereinbefore explained.

Instead of providing a knob as an inside operating means, as shown in Figure 3, inside key controlled means may be employed as in the construction shown in Figures 7, 8 and 9. The open slot 13 in the tumbler 10 permits the pin 22 of the rollback cam 21 to move entirely out of engagement with the tumbler and to a position which will allow the key of the cylinder lock to be withdrawn. As two key controlled devices are employed in the construction shown in Figures 7–9, the locking tumbler 10^a is so slotted as to permit both rollback pins to move entirely out of engagement with said tumbler 10^a. The tumbler

10ª may be constructed of two members the same as the tumbler 10 and each of these members be provided with an open slot 13ª instead of one member being provided with an open slot and the other with a closed slot.

In the construction shown in Figures 7 and 8, the casing 1 may be formed with an enlargement 23 to receive a cylinder lock 24 and the plug 25 of this lock is suitably connected with the rollback lever 17 for operating the same.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:

1. In a lock, the combination with a casing and a sliding bolt having a longitudinal slot, of a fixed member within the casing at the side of the bolt, a tumbler pivoted to the bolt and adapted to engage the fixed member in either of two positions of the bolt, said tumbler having a closed slot, a manually operable means including a shank passing through the slot in the bolt, a rollback member operatively connected with said shank, and a pin carried by said rollback member and entering the closed slot of the tumbler.

2. In a lock, the combination with a casing and a sliding bolt, of a fixed member within the casing, a spring pressed tumbler pivoted to the bolt and adapted to engage said fixed member in either of two positions of the bolt, said tumbler having a closed slot and also having an open slot, a knob spindle, a rollback arm carried thereby and provided with a pin entering the closed slot of the tumbler, a key controlled lock, a rollback cooperable with the movable member thereof, and a pin carried by said rollback and entering the open slot of the tumbler.

In testimony whereof, I have signed this specification.

EDMUND R. MENZEL.