Feb. 3. 1925. 1,524,862

R. L. HIGHT

LOCK

Filed Aug. 17, 1921

Fig. 1

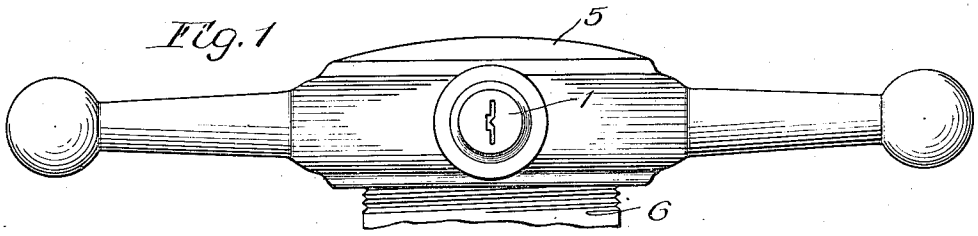


Fig. 2.

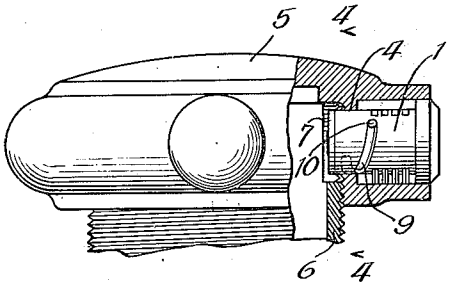


Fig. 3

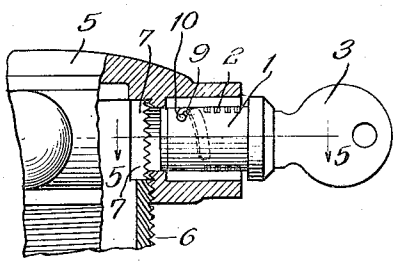


Fig. 4.

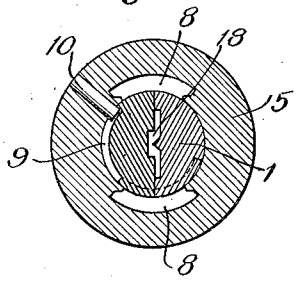


Fig. 5

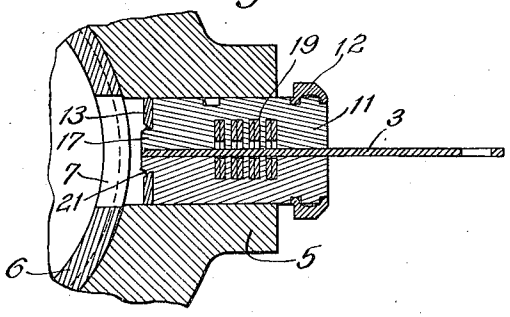


Fig. 8

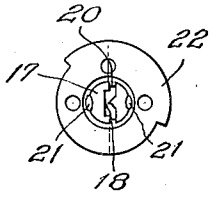


Fig. 6

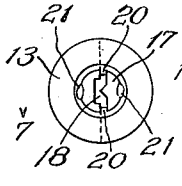
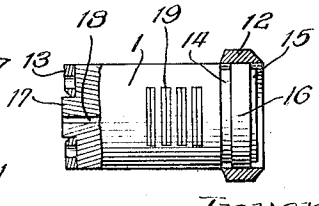


Fig. 7.



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By: Wm. Bell Atty.

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UNITED STATES PATENT OFFICE.

ROBERT L. HIGHT, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOHN JUNKUNG, OF CHICAGO, ILLINOIS.

LOCK.

Application filed August 17, 1921. Serial No. 492,892.

To all whom it may concern:

Be it known that I, ROBERT L. HIGHT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to locks of the tumbler type and it is my object to generally improve the construction and operation of these devices.

More specifically, one object of the invention is to improve the construction and the process of making the plug of the lock.

Another object of the invention is to provide a lock in which the plug moves longitudinally to perform the locking function.

With these and other objects in view, reference will be made to the specification and the drawings forming a part thereof in which—

Fig. 1 is an elevation showing my lock applied to a radiator cap.

Fig. 2 is a longitudinal section with the plug shown in elevation and in locked position.

Fig. 3 is a similar view showing a plug in unlocked position.

Fig. 4 is a cross section on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged detail section.

Fig. 6 is an end view of the plug.

Fig. 7 is an elevation partly in section illustrating a partly assembled barrel; and

Fig. 8 is an end view showing a modified form of back plate.

Referring to the drawing 1 indicates the lock plug in which are mounted the plungers 2 operated by the key 3 in the customary manner. The barrel is shown mounted in the cylindrical opening 4 in the radiator cap 5 but it is to be understood that this is merely illustrative. I may use the lock in any part of barrel or other mounting. The radiator cap is screwed on the radiator tube 6, which is provided with a slot 7 adapted to receive the inner end of the plug 1 when in locked position. The bore in which the barrel is mounted has a pair of oppositely disposed sector shaped slots 8 into which the plungers move to lock the plug in place.

In order to provide for the longitudinal movement of the barrel I cut on its outer surface a helical groove 9 and equip the radiator cap with the pin 10 having one end seated in the groove 9. It will be obvious from the drawing that the rotation of the plug in one direction will cause longitudinal movement to the right in Fig. 2 bringing the plug to the position shown in Fig. 3 and reverse rotation will move it from the position shown in Fig. 3 to that shown in Fig. 2 to lock the radiator cap to the tube 6. This proves a very convenient arrangement by which this radiator cap may be securely locked to the radiator tube and there are a variety of other places where this construction offers great advantages.

The plug 1 is made up of two semi-cylindrical pieces 11 secured together by a ring or head 12 at one end and a plate 13 at the other. By referring to Fig. 7 it will be seen that the semi-cylindrical pieces 11 are provided near one end with a groove 14 and the extreme end portion adjacent this groove is reduced as at 15 leaving a rib or ridge 16. The opposite ends of these members have semi-cylindrical projections 17. The flat sides of the semi-cylindrical pieces are grooved longitudinally as shown in Fig. 4 to provide passage 18 for the key 3, and transverse grooves 19 form passages for the tumblers 2. The ring 12 has its outer end bevelled approximately 45 degrees and its inner end inclined at a lesser angle to the vertical. In assembling, the two pieces 11 are placed with their flat sides together and a ring 12 slid over and centered with the rib 16. By a punch press or similar operation the bevelled ends are pressed into the position shown in Fig. 5, tightly gripping the bead or rib 16 and securing the two pieces in close and firm contact. The back plate is then emplaced on projections 17 with its internal keys 20 seated in the slots forming the passage 18 after which the ends of the projection 17 are riveted against the outer face of the back plate, thus securely fastening the other ends of the pieces 11 together. In practice I provide the outer face of the back plate with a slight countersink 21 to make room on the riveted ends of the projection 17. The manner of assembling the plungers into the plug and the plug into the bore of the radiator cap which serves as a barrel will be obvious without further description.

In Fig. 8 I have shown a modified form of back plate to be used in cases where the groove 9 and pin 10 are omitted. This back

plate is equipped with a sector shaped enlargement 22 which may be used as a stop to limit the rotation of the plug and for other purposes.

I am aware that changes in the form and proportion and arrangement of parts of my invention may be made without departing from the spirit or sacrificing the advantages thereof and I therefore reserve the right to make all such changes as fairly fall within the scope of the following claims:

I claim:

1. In a lock, a plug consisting of two semi-cylindrical members and having a rib adjacent one end, and a ring shrunk upon the rib and having portions thereof projecting over the edges of the rib to hold the semi-cylindrical members in alignment.

2. In a lock, a plug consisting of two longitudinal members, projections on the rear ends of said members, a ring shrunk on said members to secure them together at their front ends, and a back plate provided with an aperture to receive said projections, the projections being riveted to secure the plate to the plug.

3. In a lock, a plug consisting of two semi-cylindrical members assembled with their flat faces together and having a rib adjacent one end, a ring assembled upon said rib and having its edges pressed inward against the edges of said rib and means for securing the opposite ends of the semi-cylindrical members together.

4. In a lock, a plug consisting of two semi-cylindrical members assembled with their flat faces together and having a rib intermediate its ends, and a ring assembled upon said rib.

5. In a lock, a plug consisting of two semi-cylindrical members having their flat faces together and having at one end a reduced portion and slightly spaced therefrom a circumferential groove whereby a rib is formed between the groove and the reduced portion, and a ring surrounding said rib and having its ends pressed against the opposite sides of said rib.

6. In a lock, a plug consisting of two semi-cylindrical members assembled face to face, each having at one end thereof a projection, a disc assembled about said projections and having keys interposed between said projections, said projections being riveted against the outer face of said disc.

7. In a lock, a plug including two semi-cylindrical members assembled face to face, said members having a rib at one end interposed between two grooves and a ring seated on said rib with its ends crimped into said grooves.

8. In a lock, a plug consisting of two semi-cylindrical members assembled with their flat faces together and having a substantially cylindrical boss upon one of its ends, and means for securing the semi-cylindrical members together comprising an apertured plate surrounding the boss, the boss being riveted over to secure the plate to the plug.

ROBERT L. HIGHT.