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CYLINDER LOCK WITH STOP MEANS

Filed May 27, 1953

Fig.1.

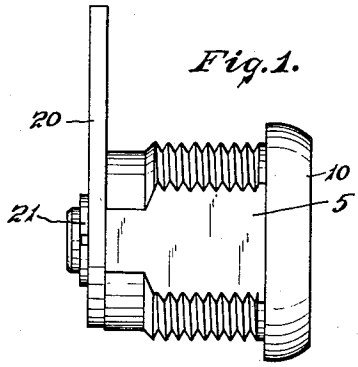


Fig.2.

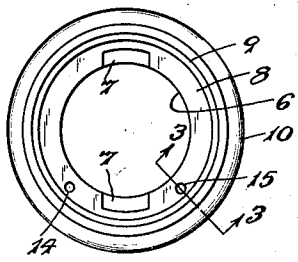


Fig.3.

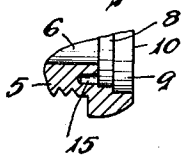


Fig.4.

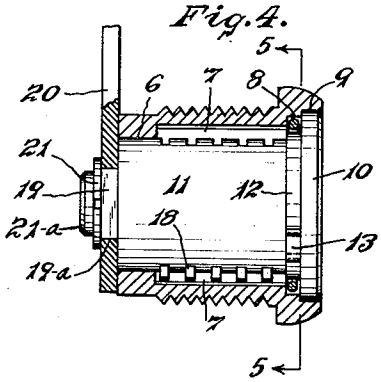


Fig.5.

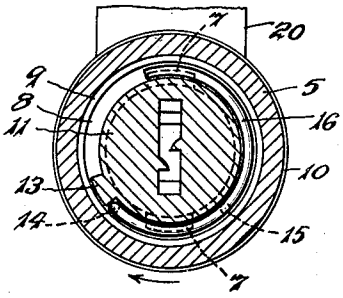


Fig.6.

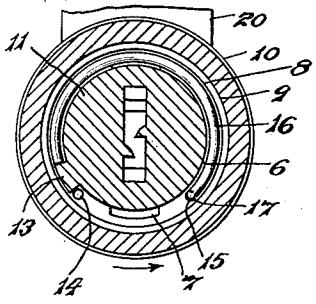


Fig.7.

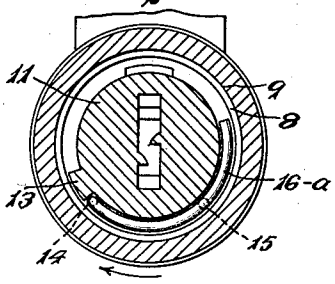


Fig.8.

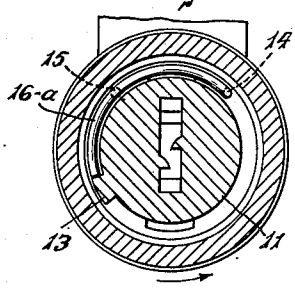


Fig.9.

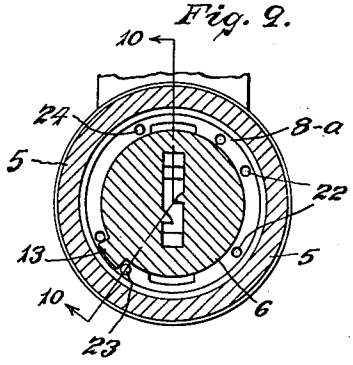


Fig.10.

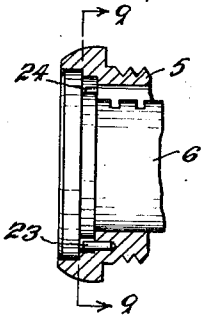
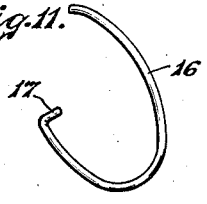


Fig.11.



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CYLINDER LOCK WITH STOP MEANS

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Application May 27, 1953, Serial No. 357,717

8 Claims. (Cl. 70—362)

This invention relates to a cylinder lock with stop means and more particularly to a lock of the cylinder type which generally includes a cylinder that contains a barrel, or key plug, that is rotatably mounted therein.

An object of the present invention is to produce a lock of the cylinder type having stop means for limiting the rotation of the barrel in different positions relatively to the cylinder.

A further object of this invention is the provision of such stop means which may be located within the lock to selectively stop the rotation of the barrel relatively to the cylinder in any predetermined position.

A still further object of this invention is the provision of such stop means which may be used without variations in construction to limit the rotation of the plug between any two of a predetermined number of positions.

Further objects and advantages of this invention will be more clearly understood from the following description and from the accompanying drawings in which:

Fig. 1 is a side view of a lock embodying the present invention.

Fig. 2 is a front view of the cylinder used in said lock.

Fig. 3 is a sectional side view of a portion of said cylinder on line 3—3 of Fig. 2.

Fig. 4 is a side view of said lock, partly in central vertical section.

Fig. 5 is a sectional end view on line 5—5 of Fig. 4, showing the stop means positioned for permitting right hand rotation of the barrel through a distance of ninety degrees.

Fig. 6 is a similar view showing the stop means positioned for permitting left hand rotation of the barrel through a distance of ninety degrees.

Fig. 7 is a similar view showing the stop means adapted for permitting right hand rotation of the barrel through a distance of one hundred and eighty degrees.

Fig. 8 is a similar view showing the stop means adapted to permit left hand rotation of the barrel through a distance of one hundred and eighty degrees.

Fig. 9 is a sectional end view on line 9—9 of Fig. 10 showing a modified form of my invention.

Fig. 10 is a sectional side view on line 10—10 of Fig. 9.

Fig. 11 is a perspective view of a stop member used in the present invention.

In the embodiment illustrated in Figs. 1 to 8 of the drawings, my improved lock includes a cylinder 5 having an axial bore 6, with opposed grooves 7—7 running longitudinally in the inner wall of the said bore and at opposite sides thereof. The said cylinder is provided at the front end thereof with an annular recess 8 which surrounds the bore and has an enlarged concentric portion 9 that is adapted to receive the head 10 of a barrel, or key plug, 11 which is rotatably contained within the said bore. The barrel has an annular shoulder 12, adjacent to the head 10, which is rotatable in the recess 8 and has a stop lug 13 that extends radially therefrom into the said recess 8.

In accordance with the present invention, there is provided, preferably in the bottom wall of the annular recess

8, a pair of holes 14—15 which are symmetrically located with respect to the vertical axis of the cylinder. A stop member 16 is provided within the recess 8 and is held in position by one of said holes for limiting the rotation of the barrel relatively to the cylinder between any selected two of a number of different positions; the said stop member 16 being preferably constructed of wire in the form of a ring having a portion thereof cut away and an end portion bent perpendicularly to the plane of the ring to provide a finger 17 which extends into a selected one of the holes 14 and 15 to thereby secure the stop member in stationary position relatively to the cylinder for the purpose to be hereinafter described.

It will be understood that the barrel 11 is provided with a series of conventional tumblers 18 which are normally projected from the barrel into one of the grooves 7—7 to thereby lock the barrel against rotation relatively to the cylinder; the said tumblers being key operated for retraction into the barrel to permit rotation of the barrel relatively to the cylinder.

The barrel 11 is preferably provided with an axially disposed square projection 19 to receive a locking bolt 20, having a square opening 19–*a* therethrough, in different positions relatively to the barrel. The said bolt may be detachably secured on the projection 19 by suitable means, such as a retaining ring 21 which is secured to a cylindrical extension 21–*a* on the projection 19.

In the construction illustrated in Figs. 1 to 8, the stop member 16 may be secured to the cylinder in different positions so as to permit either left hand or right hand rotation of the barrel relatively to the cylinder, for a distance of ninety degrees, by simply inserting the finger 17 into either of the holes 14 or 15.

When the finger 17 is inserted into the hole 14, as shown in Fig. 5, the stop lug 13 may move between the ends of the stop member, and right hand rotation of the barrel for a distance of ninety degrees is thereby permitted. When it is desired to permit left hand rotation of the barrel for a distance of ninety degrees, the said finger is inserted into the hole 15, as shown in Fig. 6.

When it is desired to permit right hand rotation of the barrel for a distance of one hundred and eighty degrees, the member 16 may be cut off, as shown in Fig. 7, and the finger 17 inserted in the hole 14. Left hand rotation of the barrel for a distance of one hundred and eighty degrees may then be obtained by simply turning the cylinder 5 upside down so that the stop member would be located at the top of said cylinder, as shown in Fig. 8, instead of at the bottom.

It will be understood from the above description that the stop means of this invention may be located in a number of different positions by simply inserting the finger 17 of the stop member 16 into the proper hole for the desired results and without requiring any special tools or operation. Therefore, a specified lock having the required direction and distance of rotation for the barrel may be provided by simply assembling the parts of the lock to obtain the desired results and a substantial economy in the production of the lock is thereby attained. Also, different distances of rotation may be obtained for the barrel by merely either cutting off a portion of the stop member 16 or providing stop members, such as 16–*a*, having different spacings between their free end portions so that different distances of rotation may be provided for the barrel.

In the modified form shown in Figs. 9 and 10, the cylinder may be provided with a series of holes in different predetermined positions around the bottom of the recess 8–*a* and a pair of pins 23 and 24 may be inserted into any two of said holes to provide the desired degree and distance of rotation for the barrel.

It will be also understood from the above that the bolt

20 may be located in different radial positions upon the projection 19 by simply placing it upon the said projection in the required position and then securing it in place by means of the retaining ring 21.

I claim:

1. A lock comprising a cylinder having a bore therein and an annular recess adjacent the end of said bore, a barrel rotatable in said bore and having a head portion fitting the said recess, the said recess having a plurality of holes in the bottom wall thereof, a ring shaped stop member having a finger inserted into one of said holes for positioning the member relatively to the cylinder and free end portions spaced from each other, a stop lug extending radially from the barrel below the head and projecting between the said free end portions of the stop member for limiting the rotation of the barrel relatively to the cylinder.

2. A lock comprising a cylinder having an axial bore extending therethrough, a barrel rotatably contained within said bore, the said sylinder having a first annular recess adjacent the end of the bore and communicating therewith and a second annular recess communicating with the first annular recess, the said barrel having an annular shoulder in register with said first recess and a head portion fitting within the second recess, the first recess having a plurality of holes in a wall thereof, a stop member contained within the first recess having a portion inserted into one of said holes and spaced end portions, and a projection on said shoulder movable between and engageable with said end portions for limiting the rotation of the barrel relatively to the cylinder.

3. A lock comprising a cylinder member having an axial bore and an annular recess therein communicating with said bore, a barrel member contained within said bore and rotatable therein relatively to the cylinder, an arcuate wire element contained within said recess, cooperating means on said wire element and one of said members for securing said element thereto, and a projection on the other of said members extending into said recess between the free ends of said wire element and cooperating therewith to limit rotation of said barrel to a pre-determined number of degrees.

4. A lock comprising a cylinder member having an axial bore and an annular recess therein communicating with said bore, a barrel member contained within said bore and rotatable therein relatively to said cylinder; one of said members having a hole therein communicating with said recess, an arcuate wire element contained within said recess and having a projecting finger inserted into said hole, and a projection on the other of said members extending into said recess between the free ends of said wire element and cooperating therewith to limit rotation of said barrel member to a pre-determined number of degrees.

5. A lock comprising a cylinder having an axial bore and an annular recess therein communicating with said bore; said annular recess having a hole in a wall thereof, a barrel contained within said bore rotatable therein relatively to said cylinder, an arcuate wire stop member contained within said recess and having a projecting finger inserted into the said hole for positioning the stop member relatively to the cylinder, and a projection on said barrel extending into said recess and engageable with the free ends of said stop member for limiting the rotation of the barrel relatively to the cylinder.

6. A lock as set forth in claim 5 wherein a plurality of holes are provided in the wall of the recess for locating the stop member in different positions relatively to the cylinder.

7. A lock including a cylinder having an axial bore and an annular recess therein communicating with said bore; said recess having a hole in a wall thereof, a barrel contained within said bore and rotatable therein relatively to the cylinder, an arcuate wire stop member contained within said recess and having a finger projecting from one end thereof and inserted in the hole in the wall of said recess for securing the stop member in position relatively to the cylinder, and a stop lug projecting from said barrel into said recess and engageable with the ends of said stop member for limiting the rotation of the barrel relatively to the cylinder.

8. A lock comprising a cylinder member having an axial bore and an annular recess adjacent an end of said bore, a barrel member rotatable in said bore and having a head portion fitting the said recess and spaced from the bottom thereof; one of said members having a hole therein communicating with said recess, an arcuate wire stop member contained within said recess and having a finger thereon extending into said hole; the other of said members having a stop lug extending into said recess between the free ends of said stop member and cooperating therewith to limit the rotation of the barrel relatively to the cylinder.

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