March 10, 1925. 1,529,071

A. E. LEACH

LOCK BARREL LOCKING MEANS

Filed June 22, 1923

FIG. 1.

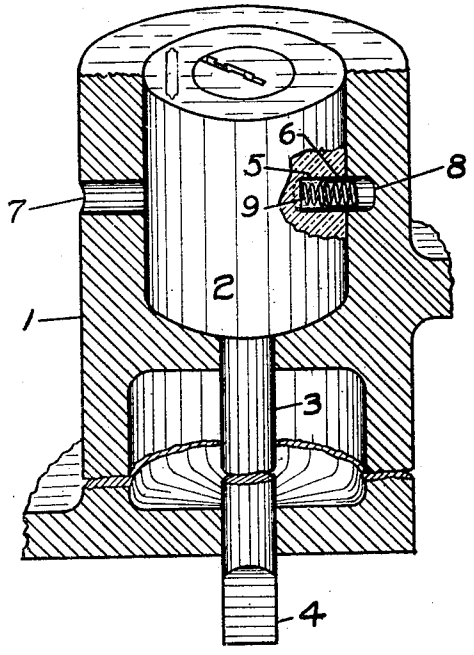


FIG. 2.



FIG. 3.



INVENTOR
ALBERT E. LEACH
BY
R. H. Pomeroy
ATTORNEY

Patented Mar. 10, 1925. 1,529,071

UNITED STATES PATENT OFFICE.

ALBERT E. LEACH, OF DETROIT, MICHIGAN, ASSIGNOR TO THE STUDEBAKER CORPORATION, OF SOUTH BEND, INDIANA, AND DETROIT, MICHIGAN, A CORPORATION OF NEW JERSEY.

LOCK-BARREL-LOCKING MEANS.

Application filed June 22, 1923. Serial No. 647,170.

To all whom it may concern:

Be it known that I, ALBERT E. LEACH, a citizen of the United States of America, and resident of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Lock-Barrel-Locking Means, of which the following is a specification.

This invention relates to means for locking lock barrels in position and has for its object the providing of such a means whereby the lock barrel may be inserted into its support at any convenient time, and which after being inserted cannot be removed without the expenditure of considerable time, and material damage to the parts involved.

Usually lock barrels are held in place by screws which necessarily must be exposed in some particular position and which are therefore readily removable from that position. This is a particular disadvantage in the case of automobile locks where the time element needed to force a lock has an important bearing on theft insurance rates.

I provide a means for locking the lock barrel in position whereby there is no way to remove the barrel after it is locked in place except by materially damaging the barrel or support, and such removal must necessarily take a relatively long period of time.

Another advantage of this locking means is that the lock barrel may be easily and quickly inserted in its support at any time, the state of assembly of the support making no difference whatever to the time for inserting the lock barrel therein. This is again particularly advantageous in the building of automobiles where it is desirable to insert the lock barrel as the last operation of assembly so as not to interfere in the assembly of the rest of the parts.

The method I use is to provide a spring pressed plunger in the lock barrel which may be depressed flush with or below the surface of the lock barrel. I also provide the support with an opening of substantially the same size as the plunger and which may be matched with the plunger opening in the lock barrel. In assembling the lock barrel to its support the plunger is depressed below the surface of the lock barrel and the latter is inserted in its support and moved around until the plunger opening matches with the opening in the support which allows the plunger to move into the support. The opening in the support is blind and of less depth than the length of the plunger so that the plunger remains partly in both the lock barrel and the support, locking the same securely together.

In order to more fully explain my invention I will refer to the accompanying drawings in which a suitable embodiment of my invention is shown.

Fig. 1 is a partially broken perspective view showing the lock barrel mounted in its support and showing the manner in which it is secured therein.

Fig. 2 is a view of the spring that tends to force the locking cup or plunger outwardly from the lock barrel.

Fig. 3 is a sectional side view of the locking cup or plunger used to lock the lock barrel in its support.

1 is a support for a lock barrel 2. The support 1 in this particular case is the transmission cover of an automobile. The support 1 is drilled out to form an opening of slightly larger diameter than the lock barrel 2 and of such a depth that when the lock barrel 2 is seated on the bottom of the opening its upper face is flush with the adjacent face of the support 1. The lock barrel 2 has a rod 3 terminating in a flattened portion 4 fastened to its revolvable part. When the key is inserted in the lock and turned, the flattened portion 4 turns and spreads balls or pins, as the case may be, into notches in the shifter rods of the transmission and therefore locks the same from movement. The lock barrel 2 is of the pin tumbler type and has an opening 5 of slightly larger diameter and greater depth than the cup 6 drilled in its side. An opening 7 is drilled thru one side of the support and on thru into the other side where it forms a blind hole 8 of less depth than the length of the cup 6, preferable about half, and in such a position that when the lock barrel 2 is properly inserted in its support 1 the opening 5 and blind hole 8 are axially aligned. In the operation of inserting the lock barrel 2 in the support 1, the spring 9 is inserted in the cup 6 and the cup 6 is then inserted in the opening 5 open end first. The cup 5 is then depressed against the pressure of the spring 9 below the surface of the lock bar-

rel 2 and the latter is inserted into its opening in the support 1. When the lock barrel 2 is seated on the bottom of the opening of the support 1 it is turned until the opening 5 matches with the blind hole 8 which allows the spring 9 to force the cup 6 into the blind hole 8, but in as much as the blind hole 8 is of less depth than the length of the cup 6 the latter remains partly in the lock barrel 2 and therefore locks the latter securely in the support 1. It is preferable that the blind hole 8 be in such a position that it is impossible to drill into it from that side, altho if the hole 7 is plugged so as to be concealed it is impossible to tell where the cup 6 is positioned.

It is evident that either the lock barrel or the support must now be damaged in order to force the cup 6 back into the lock barrel 2 in order to remove the same from the support 1.

Formal changes may be made in the specific embodiment of the invention described without departing from the spirit or substance of the broad invention, the scope of which is commensurate with the appended claims.

What I claim is:—

1. In a locking device, a cylindrical lock barrel and a support provided with an opening to receive said lock barrel; a blind hole in the side of said lock barrel; a plunger of less length than the depth of the blind hole slidable in said blind hole and tending to be forced outwardly therefrom by resilient means; and a blind hole within the opening of said support of less depth than the length of said plunger and of substantially the same diameter as the blind hole in said lock barrel; said blind holes being aligned when said lock barrel is properly inserted in said support, allowing said plunger to enter the said blind hole in the said support.

2. In a locking device, a cylindrical lock barrel, a support having an opening therein to receive said lock barrel, an opening in the side of said lock barrel, a cup-shaped plunger of less length than the depth of said opening in said lock barrel, a spring interposed between the closed end of said plunger and the inner face of said opening to force said plunger outwardly, and an opening extending into said support and of less depth than the length of said plunger to receive the outer end of said plunger when the openings in said lock barrel and support are in alignment, and thereby prevent removal of said lock barrel from said support.

Signed by me at Detroit, Michigan, U. S. A., this 15th day of June, 1923.

ALBERT E. LEACH.

Witnesses:
HODGSON S. PIERCE,
ALPHONSE F. SIERS.