May 12, 1931. I. S. KEELER 1,804,781

KNOB OR HANDLE LOCK

Filed June 29, 1928

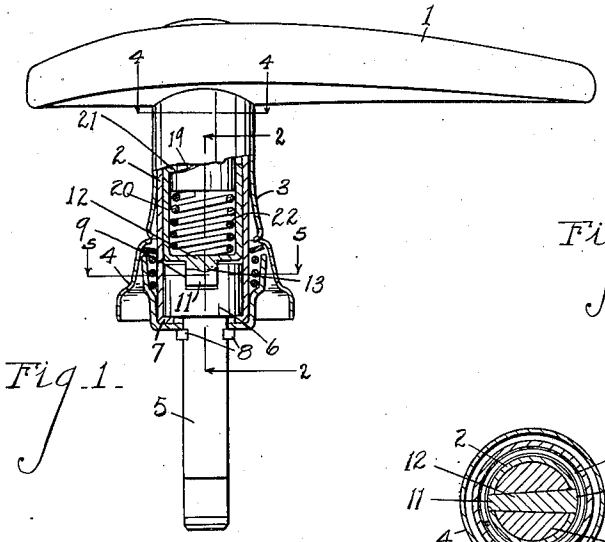


Fig. 1.

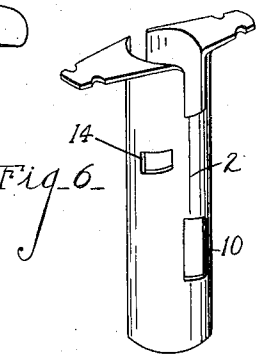


Fig. 6.

Fig. 5.

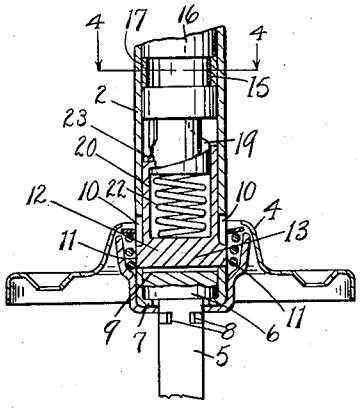


Fig. 2.

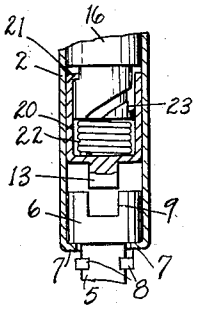


Fig. 3.

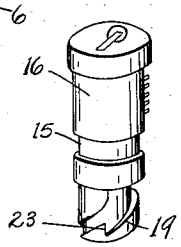


Fig. 7.

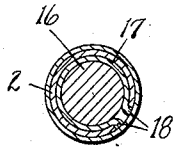


Fig. 4.

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UNITED STATES PATENT OFFICE

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KNOB OR HANDLE LOCK

Application filed June 29, 1928. Serial No. 289,117.

The main objects of this invention are:

First, to provide an improved lock of the knob or handle type which is well adapted for use on the doors of automobiles and the like.

Second, to provide a structure of the class described in which the handle or hand piece is entirely freed from the spindle when unlocked so that it is difficult to open the lock by breaking some part thereof.

Third, to provide a lock having these advantages which is very economical and simple in its parts and at the same time strong and secure.

Objects relating to details and economies of construction and operation of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a side view of parts of my improved lock, the parts being sectioned and broken away for convenience in illustration.

Fig. 2 is a detail section mainly in longitudinal section on a line corresponding to line 2—2 of Fig. 1, with the bolt in spindle engaging position.

Fig. 3 is a fragmentary section corresponding to that of Fig. 1 with the bolt retracted or in locking position.

Fig. 4 is a transverse section on line 4—4 of Figs. 1 and 2.

Fig. 5 is a transverse section on line 5—5 of Fig. 1.

Fig. 6 is a perspective view of the sleeve or barrel member of the hand piece.

Fig. 7 is a perspective view of the locking cylinder unit.

I have not, in the accompanying drawings, shown the latch as the relation of the spindle thereto will be readily understood.

In the embodiment illustrated, the hand piece 1 is elongated, such as is commonly used on automobile doors. The sleeve or cylinder 2 is secured to this hand piece as is also the sleeve housing 3. The sleeve housing is adapted to rest against the escutcheon member 4 which is secured to the door.

The spindle 5 is provided with a head 6 with which the sleeve 2 is rotatably associated, the head being of cylindrical cross section and retained within the sleeve by means of inturned flanges 7. The spindle or chill has lugs 8 struck out therefrom to retain it in assembled relation to the sleeve. The head 6 of the spindle has a transverse slot 9 therein.

The sleeve, in the embodiment illustrated, is formed of sheet metal and has opposed longitudinal slots 10 therein which are engaged by the lugs 11 on the bolt 12, the slots being of such length as to permit longitudinal movement of the bolt within the sleeve while rotating the bolt or securing the bolt to the sleeve to rotate therewith. The bolt has a tongue part 13 adapted to enter the slot 9 when brought into alignment therewith.

The sleeve also has a transverse slot 14 therein with which the annular groove 15 of the cylinder locking unit 16 aligns when the cylinder locking member is assembled within the sleeve. This cylinder locking unit is retained within the sleeve by means of the spring 17 which is arranged in the groove 15 and provided with out-turned lugs 18 at its ends engaging within the slot, so that while rotative movement of the locking unit is permitted, it is supported against longitudinal movement.

Where an L type of handle such as illustrated is provided, the slot 9 and the bolt are preferably tapered, as best shown in Fig. 5, so that the bolt will engage only when the hand piece is in one position relative to the spindle. When the bolt is of uniform width from end to end, it will drop into the slot in the spindle when it is brought into longitudinal alignment therewith so that the long end of the handle might be in the wrong position. With a T-shaped handle, it would of course be immaterial.

The locking unit is provided with a spiral cam 19 projecting into and rotatable within the chamber or recess 20 of the bolt, the bolt being provided with a lug 21 engaging this

cam so that upon rotative movement of the locking unit, the bolt is withdrawn from the spindle, thereby allowing free turning of the hand piece without affecting or moving the spindle.

A coiled spring 22 is arranged in the bolt chamber between the end of the locking member and the inner end of the chamber whereby it acts to urge the bolt to engaging position. When the locking member is turned to unlocking position and the hand piece rotated to a position to align the bolt with the recess in the spindle, the spring acts to engage the bolt with the spindle so that the spindle is rotated with the hand piece.

The cam 19 is preferably provided with a stop shoulder 23 at its lower end which limits the turning movement of the locking unit within the handle or sleeve to a one-half turn or rotation.

I have not attempted to illustrate the tumbler features of the locking unit as this may be of any suitable construction except that the locking unit is especially formed to provide the cam 19 and the groove 15.

When the lock is locked, the hand piece is freed for rotative movement independently of the spindle, so that the lock cannot be easily broken by engaging the hand piece with a piece of pipe or forcibly turning the hand piece as it freely rotates. The latch is, however, readily unlocked by releasing the bolt and rotating the hand piece as described should the bolt not happen to be in aligned position with the recess in the spindle.

The parts of my improved lock are very simple and economical; at the same time the structure is strong and durable and attractive in appearance.

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

1. The combination of a rotatably supported hand piece provided with a sleeve having longitudinal slots adjacent its inner end, a locking unit having a spiral cam at its inner end, a spindle provided with a transversely slotted head rotatable within the inner end of said sleeve, a bolt having a tongue-like part engageable with the slot of said head and provided with lugs engaging said longitudinal slots in said sleeve whereby the bolt is supported for longitudinal movement within the sleeve to be moved into and out of engagement with said spindle, said bolt being chambered to receive said cam on said locking unit and provided with a lug coacting therewith, and a coiled spring arranged within said bolt to actuate the same to spindle engaging position.

2. The combination with a hand piece provided with a sleeve, a locking unit rotatably mounted in said sleeve and having a spiral cam at its inner end, said cam being provided with a stop shoulder at its lower end, a spindle rotatably associated with the inner end of said sleeve, and a bolt mounted within said sleeve for longitudinal movement into and out of engagement with said spindle and provided with a lug coacting with said cam.

In witness whereof I have hereunto set my hand.

ISAAC S. KEELER.