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C. N. FAIRCHILD

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PUSH ROD LOCK

Filed Sept. 12, 1927

Fig. 1.

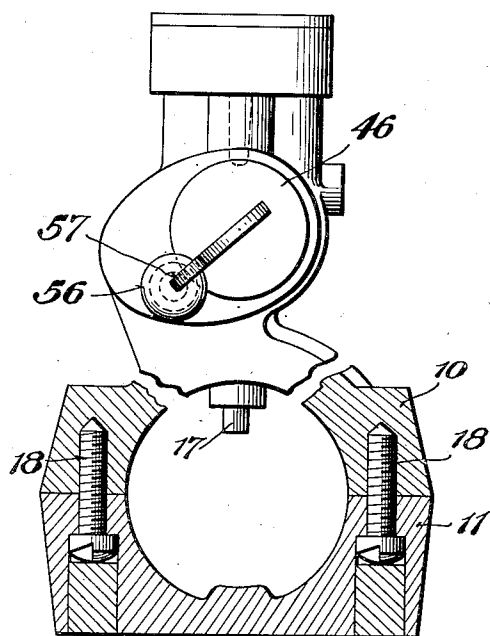


Fig. 2.

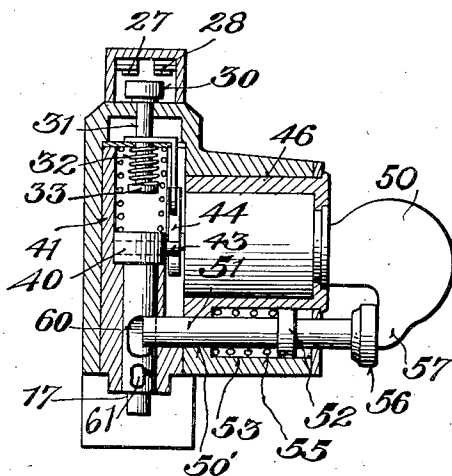
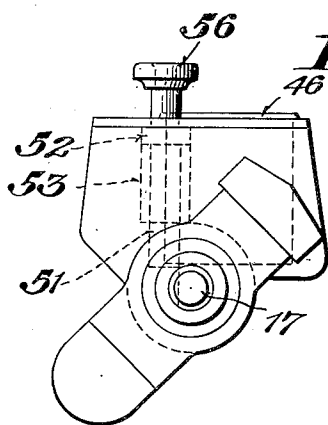


Fig. 3.

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PUSH-ROD LOCK

Application filed September 12, 1927. Serial No. 219,044.

This invention relates to locks and has for its object the provision of a simple and efficient means which will prevent accidental movement of the bolt to locking position.

A further object of the invention lies in the provision of means for intercepting the travel of the bolt of a steering post locking mechanism until such time as the key has been turned to the 360° position, that is, at locking position, and will at this time eject the key, permitting the locking bolt to move to steering post locking position.

In the drawings:—

Figure 1 is an elevation.

Figure 2 is a section taken thru the axis of the push rod and showing the locking bolt mechanism in elevation, and

Figure 3 is a bottom plan view of the device omitting the lock housing cap.

While it must be understood that the invention is very general in its application I have illustrated it in connection with a steering post locking bolt for clearness of description. The lock housing 10 has a housing cap 11 which is secured to it in permanent manner as by the one-way screws 18 so as to grasp firmly and immovably a steering post casing (not shown).

I prefer to include with my locking bolt 17 some means for making and breaking the ignition circuit and hence illustrate two contact pieces 27 and 28 which are bridged by a metal cup 30 carried by but insulated from the stem 31 which is urged downwardly into open ignition circuit position by a spring 32.

The locking bolt 17 is slidable within its bore but may not rotate since the lifting pin 43 projects thru a slot in the plug 41. The means for lifting the bolt 17, that is, for moving it into unlocked position, is the cam 44 which is fast to the revolving cylinder of a lock, the barrel of which is numbered 46 and is held in place in the housing in any desired manner.

To one side of the barrel 46 of the lock I provide a bore of two diameters, in the smaller of which 50', a plunger 51 slides, this plunger having an enlarged collar 52 freely sliding in the larger bore 53, a spring 55 normally urging the plunger into the

position shown in Figure 2 wherein the head 56 of the plunger interferes with the insertion of the key 50 by reason of lying in the path of a slight projection 57 at one side of the key. The plunger can, however, readily yield downward compressing the spring 55 but in so doing it intercepts the bolt 17 by sliding into the curved groove 60 in the plunger which is rather elongated so as to permit a certain amount of movement of the bolt upward from locking position before being arrested by the depressed plunger 51. When the key is inserted in the lock the plunger is pushed downward by the projection 57 but the key is able to make a certain amount of angular movement and the elongation of the groove 60 permits this to an extent sufficient to free the plunger head 56 from engagement with the projection 57 of the key and hence the spring 55 restores the plunger 51 to normal position before the locking bolt is arrested by the plunger.

Further movement of the key 50 raises the bolt 17 out of locking position and moves the head 40 of the locking bolt into engagement with the head 33 of the ignition controlling stem which rises upon contact with the locking bolt to complete the ignition circuit. Movements of the key from the running position in about 270° to locking position which is 360° is barred by the plunger head 56 which must be depressed before the key can complete its turning so as to lock the car. A most serious accident might occur if, while the automobile is in motion, the driver should accidentally cause the key to turn. He might even turn the key with his hand in a spirit of absentmindedness and lock the car against steering while it was in motion simultaneously shutting off the ignition. The plunger avoids such possibilities as the car cannot be locked save by two simultaneous totally different motions, one a direct press inward of the plunger and the other an angular movement of the key.

When the plunger is depressed to allow the key 50 to be turned to the 360° or locking position, the plunger 51 engages a second notch 61 in the locking bolt, the engagement this time being quite a bit more snug but

affording at all times and under any circumstances a ready reception of the plunger 51 in the notch 61 when the car is unlocked. The spring 55 is always strong enough to cause the plunger 51 to move outwardly to follow the key and I prefer to make it strong enough so that it will eject the key when the key is moved to 360° position as this will remove all temptation of the driver to leave the key in the lock after he has locked the car and shut off the engine.

What I claim is:

1. In combination, a bolt, key operated means for moving the bolt in one direction, and means normally positioned to prevent completion of the movement of the bolt but readily movable manually out of such position.
2. In combination, a bolt, key operated means for moving the bolt in one direction, and spring pressed plunger means normally positioned to prevent completion of the movement of the bolt but readily movable manually out of such position.
3. In combination, a bolt, key operated means for moving the bolt in one direction, and means normally positioned to prevent completion of the movement of the bolt but readily movable manually out of such position, said means when in normal position preventing completion of the travel of the key and when moved to permit completion of the key travel, limiting movement of the bolt, and freeing the bolt only when in normal position with the key removed.
4. In combination, a bolt, key operated means for moving the bolt in one direction, and means normally positioned to prevent completion of the movement of the key but readily movable manually out of such position.
5. The device of claim 4 in which the means intercepts the bolt when moved out of normal position.
6. The device of claim 4 in which the means ejects the key when the key is moved to locking position.
7. The device of claim 4 in which the means is a spring pressed plunger.
8. The device of claim 4 in which the means is a spring pressed plunger which intercepts the bolt.
9. In a steering post lock for automobiles, a locking bolt, a spring for driving said bolt to locking position, a key operated lock rotatable thru 360° to withdraw the bolt from locking engagement, said locking bolt having two transverse plunger receiving grooves therein, a spring pressed plunger movable into engagement with one of the grooves of the bolt when the bolt is in unlocked position and to move into engagement with the other groove when the bolt is in locked position, and a head on said plunger lying in the path of the key whereby the plunger must be

depressed before the key can be inserted in its lock and turned.

In testimony whereof I affix my signature.

CHARLES N. FAIRCHILD.

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