June 23, 1931. J. B. FLYNN 1,811,265

COACH LOCK

Filed Jan. 4, 1929

Fig. 2

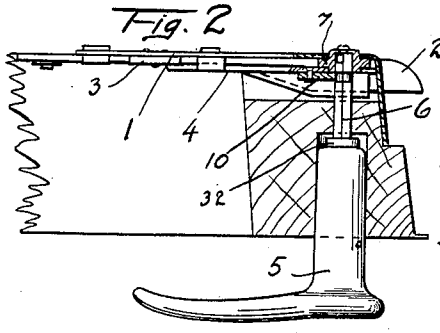


Fig. 3

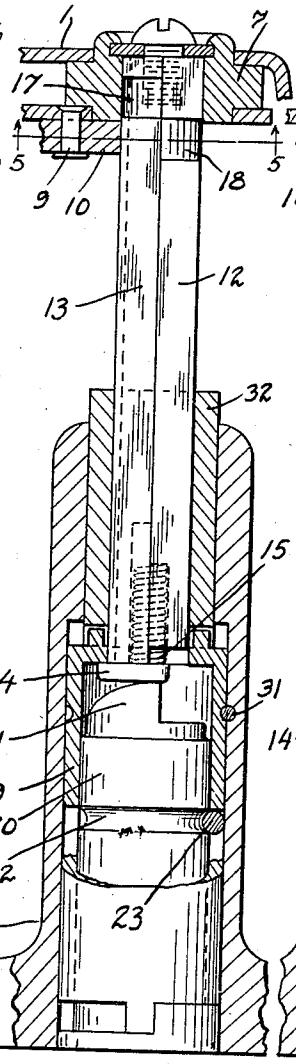
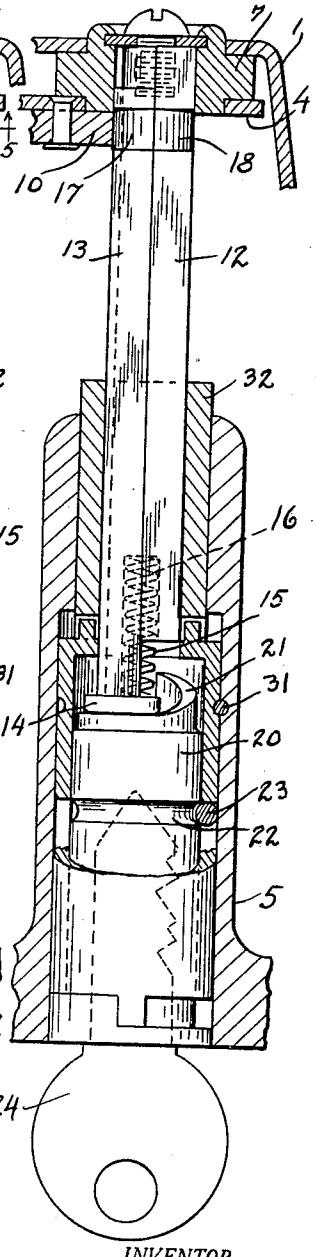


Fig. 4



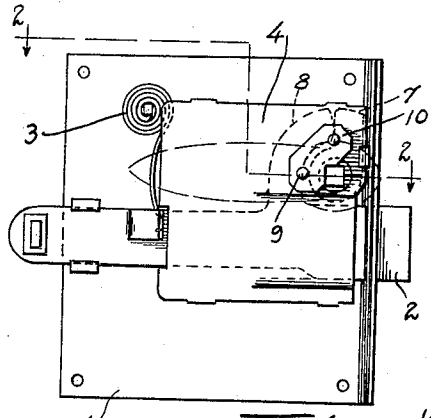


Fig. 1

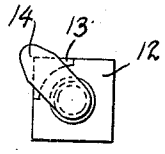
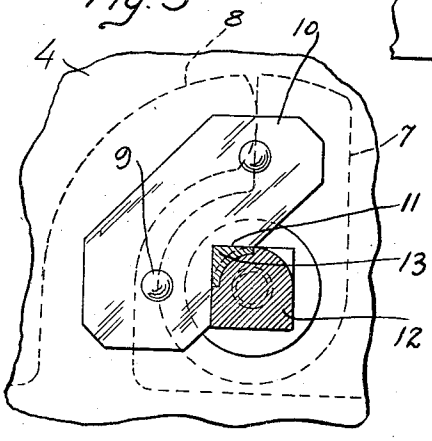


Fig. 6

Fig. 5



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Patented June 23, 1931

1,811,265

UNITED STATES PATENT OFFICE

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COACH LOCK

Application filed January 4, 1929. Serial No. 330,241.

This invention relates to a coach lock for automotive vehicles and the like.

It is the object of this invention to present a lock having a longitudinally operated handle shank, the operation of which serves to either lock or unlock the lock.

In the drawings:

Fig. 1 is an elevation of the lock.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is an elevation partly in section with parts broken away showing the relative position of the various parts in locked condition.

Fig. 4 is a view similar to Fig. 3, showing the relation of the parts when the lock is unlocked.

Fig. 5 is a section along the line 5—5 of Fig. 3.

Fig. 6 is an end view of the longitudinally operable spindle.

Referring more particularly to the drawings, the lock consists of a front plate 1, a bolt 2 which may be retracted against the action of the bolt spring 3 and of a cover 4. The bolt is adapted to be retracted by the turning of the handle 5 which is mounted upon the spindle 6 and thereby operatively connected with a roll-back 7 which slidably engages the roll-back abutment 8 thereby causing the bolt to be retracted. Mounted upon the cover by any suitable means such as the rivets 9 is the spindle abutment 10. The spindle abutment 10 has a right angled recess as at 11 the purpose of which is explained below.

The spindle consists of the part 12 which has a press fit in the bushing 32 and which serves as a guide for the longitudinally slidable part 13 which has a slip fit in the bushing 32 and is guided thereby. The part 13 of the spindle has a head 14 adapted to engage the spring 15 which is seated in the hole 16 in the end of the part 12. The hole 16 is bored into the end of the part 12 of the spindle 6. The shank part 13 is recessed as at 17 and the spindle part 12 is recessed as at 18. These recesses are of a width greater than the thickness of the spindle abutment 10. Fixed within the handle 5 is the sleeve 19 and rotatively mounted within the sleeve 19 is the cam cylinder 20 having a cam portion 21. The cam cylinder is circumferentially grooved as at 22. The pin 23 secures the cam cylinder 20 within the sleeve 19 and slidably engages the cam cylinder 20 in the groove 22 whereby the cam cylinder is permitted to rotate in the sleeve 19 but not to move longitudinally upon actuation of the key 24. The sleeve 19 is held in the handle by the pin 31.

The operation of the lock is nicely shown by the figures 3 and 4. As shown in Fig. 3, the cam cylinder 20 has been rotated by means of the key 24 which has caused the cam portion 21 to slidably engage the head 14 which in turn has moved the spindle part 13 longitudinally against the action of the spring 15 which is now contracted. In this position the lock is locked because of the fact that the recess 17 has been moved beyond the spindle abutment 10 thereby causing the square shoulder of the spindle part 13 to abut in the recess 11 of the spindle abutment 10 as shown in Fig. 5. Hence, the handle 12 cannot be turned when the recesses are in this position because at this time the square shoulder of the part 13 of the spindle fits within the right angled recess 11 and thereby prevents any rotation of the lock handle.

As shown in Fig. 4, the cam cylinder 20 has been rotated by means of the key 24. The head 14 has slid to the low part of the cam portion 21 and the expansion of the spring 16 has moved the slidable part 13 of the spindle so that the recess 17 now coincides both with the recess 18 and the spindle abutment 10. Owing to the coincidence of the recess 17 and 18, the spindle presents a circular instead of a squared shoulder within the right angled recess 11 of the spindle abutment 10, hence, in this condition the lock handle may be turned and the bolt retracted since the spin-

dle 6 will not be retarded by the abutment 10 because the recesses 17 and 18 are of sufficient depth to permit rotation of the spindle when they coincide with each other and with the spindle abutment as shown in Fig. 4.

It is evident that I have presented a lock having a handle with a plurality of parts, the relative longitudinal movement of which serves to lock and unlock the lock.

What I claim is:

1. In a lock, a handle spindle consisting of a plurality of recessed parts adapted for relative longitudinal movement, and means cooperating with said relatively movable recessed parts to lock and unlock said handle.

2. In a lock, a handle having a plurality of parts adapted for longitudinal relative movement, said parts having recessed portions, and means adapted to lock said handle when the recessed portions of said longitudinally movable parts are disaligned.

3. In a lock, a handle spindle having a plurality of relatively longitudinally movable parts, said parts having recessed portions, means cooperating with said longitudinally movable parts to lock said handle when the recessed portions are off-set one from the other.

4. In a lock, a handle spindle having a plurality of relatively longitudinally movable parts, a cylinder within said handle adapted for rotative movement having a cam head arranged to slidably engage a part of the shank and a circumferential groove, and a pin adapted to slidably engage said groove whereby the cylinder may be rotated to effect relative movement between the parts of said handle spindle.

5. In a door lock, a handle spindle having a plurality of square shouldered parts, said parts having recessed portions and adapted for relative longitudinal movement, and means adapted to engage the square shouldered portions of said relatively movable parts to lock said handle and adapted to unlock said handle when the recessed portions are adjacent to said means.

6. In a lock, a handle spindle having a plurality of parts adapted for relative longitudinal movement, each of said parts having a recessed portion and a square shouldered portion, and means having a right angled recess adapted to cooperate with the square shouldered portions to lock said handle spindle and adapted to cooperate with the recessed portions to unlock said handle spindle.

7. In a lock having a reciprocable bolt and a roll-back, a handle spindle consisting of a plurality of recessed parts which are relatively slidable to lock and unlock the said spindle, each of the said parts arranged to non-rotatably engage the said roll-back whereby the bolt may be reciprocated when the said spindle is turned.

8. In a lock, a handle spindle having a plurality of parts adapted for relative longitudinal movement, each of said parts having a recessed portion and a shouldered portion, and an abutment plate having a recess adapted to cooperate with the shouldered portions to lock the said handle spindle and adapted to cooperate with the recessed portions to unlock the said handle spindle.

In testimony whereof I have affixed my signature.

JOHN B. FLYNN.