Dec. 16, 1924. 1,519,346

A. C. ANDERSEN

NIGHT LOCK

Filed Dec. 14, 1921

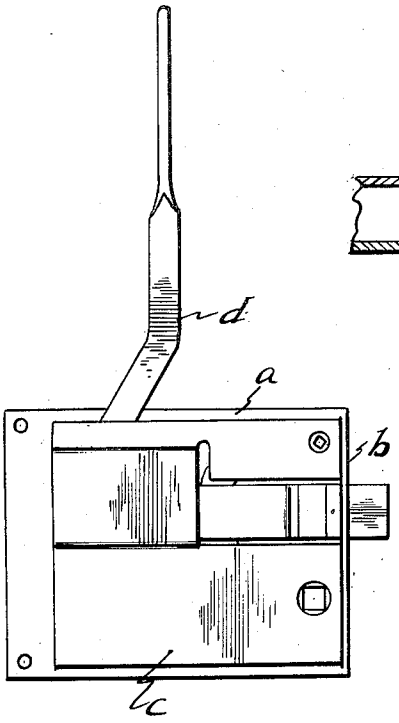


Fig. 1

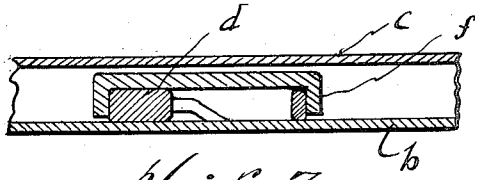


Fig. 3

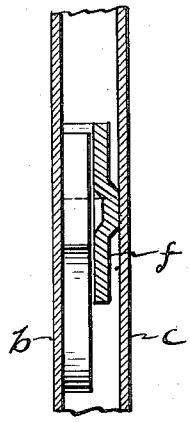


Fig. 4

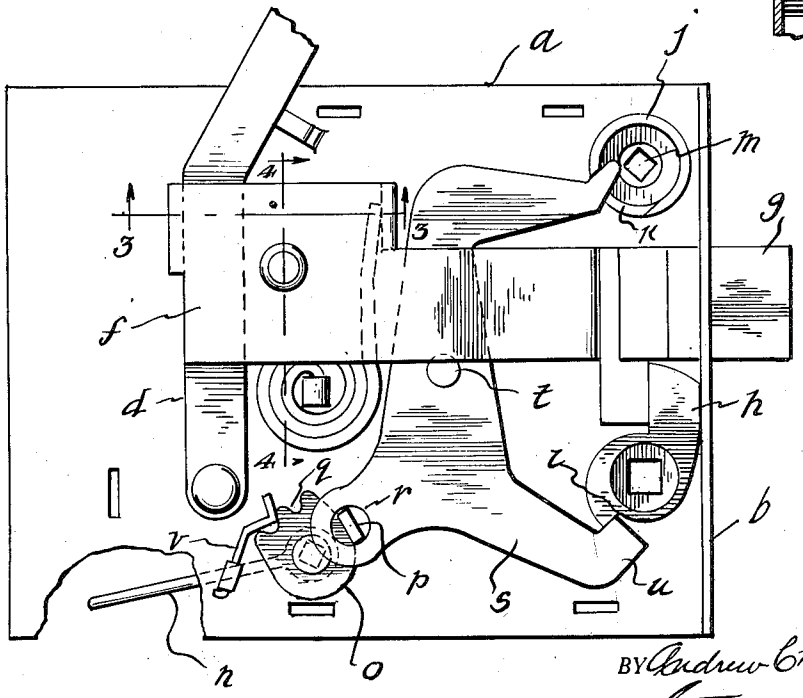


Fig. 2

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UNITED STATES PATENT OFFICE.

ANDREW CHRISTIAN ANDERSEN, OF DETROIT, MICHIGAN, ASSIGNOR TO TERNSTEDT MANUFACTURING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

NIGHT LOCK.

Application filed December 14, 1921. Serial No. 522,211.

To all whom it may concern:

Be it known that I, ANDREW CHRISTIAN ANDERSEN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Night Locks, of which the following is a specification.

This invention relates to night locks and especially a night lock for use on carriage door locks. Perhaps the term "night lock" seems a little misplaced in connection with carriage doors, but the mechanism so designated is in its general principle of operation precisely the same as the mechanism used for night locking house doors.

It is the object of the invention to provide a simple mechanism which will serve the double function of affording a lock for the outside retractor which may be actuated from the inside by a thumb turn and from the outside by a pin tumbler lock or other lock. This general combination is not broadly new but it is believed that the embodiment of the locking dog for both the thumb turn and the key barrel in a single member which is actuated by the key barrel and the thumb turn at widely spaced points is novel. Furthermore, the arrangements and functions of the specific parts are thought to be new.

In the drawings.—

Fig. 1 is a rear elevation of the lock.

Fig. 2 is a rear elevation of the lock with the back plate removed.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

a designates the front plate; *b* the face plate and *c* the back plate. *d* designates the swinging lever; *f* the body of the bolt, and *g* the bolt head. The construction of the bolt is in no way claimed in this application but is made the subject matter of a copending application, No. 522,210 for the reason that the bolt construction is of general application, no matter what the character of the night lock or whether a lever, rotary spindle or other actuating member is used to retract the bolt.

This sliding bolt is actuated from the outside of the door by the outside roll-back *h* which is provided at the opposite side of its hub with the abutment *i*. A hub *j* is located above the bolt and journaled in the face plate by being set therein. This hub *j* has a segmental slot *k* cut in its periphery for a purpose to be described. A squared opening *m* is located in the end of the hub and in which is arranged to engage the squared spindle of the pin tumbler lock cylinder (not shown). The lock will be accessible from the outside of the door.

On the inside of the door and on the outside of the face plate of the lock is a thumb turn lever *n* connected with the disk *o* which has a crank portion *p* and a toothed portion *q*. The turned-up lug or crank portion *p* fits into the perforation *r* in the heel of the locking dog or yoke plate *s* which is pivoted by the pin *t* at the center of the case. *v* designates a spring having an elbow adapted to engage in the gullets between the teeth of the disk so as to hold the locking dog yieldingly in any given position of adjustment. One end of the yoke plate or locking dog engages against the abutment *i* of the outside retractor when the parts are in the position shown in Fig. 2. This locking dog may be swung clockwise around its pivot either by turning the thumb turn *n* or by turning the key hub *j*. When the key hub is turned by the insertion of the key in the outside of the door, this key hub may be rotated counterclockwise to rotate the locking pawl clockwise. This will withdraw the arm *u* of the yoke plate from the path of the outside retractor and will also turn the thumb turn. The segmental slot *k*, which is of substantially 90 degrees, plays an important role here as it permits the key hub to be turned through a 90 degree return movement to its initial position to permit the pin tumbler lock key to be withdrawn from the lock. This is necessary because, as is well known, a pin tumbler lock key can only be withdrawn when the cylinder is in one position and the pin tumbler sections register. Furthermore, a pin tumbler lock cannot have its barrel turned by some other member that is coupled up with it for it requires a key to line up the ends of the pin tumbler sections with the barrel periphery to release the lock. Now with the slotted lock hub that is used as an actuator for the locking dog or yoke plate, the thumb turn can be turned counterclockwise to cause the crank *p* to rotate the locking dog clockwise, yet the slot *k* in the key lock hub affords enough lost motion for

the end of the yoke so that the barrel of the pin tumbler lock is in no way affected.

From the above description it will be apparent that the night lock mechanism is comparatively simple and practically all of the parts are stampings with the exception of the key lock hub which may be an automatic machine screw product. It makes no difference whether the locking dog is pivoted to the front plate or the back plate. I have preferred to show the locking dog or yoke in a bolt construction in which the locking dog or yoke is mounted on the front plate, but this is simply optional.

What I claim is:

1. In a lock, the combination of a case, a sliding bolt guided therein, an outside bolt retractor, a locking dog in the form of a plate engaging the retractor to dog the same, a locking member engaging with the plate at one point for actuating the same, and an inside turn member engaging the plate at a remote point and arranged to turn the dog positively into dogging position or into non-dogging position.

2. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a single pivoted locking dog in the form of a yoke-like plate provided with an arm adapted to stop the retractor, a key-operated member engaging the pivoted dog at one point and an inside control member engaging the locking dog at a remote point and arranged to turn the dog into dogging position and out of dogging position.

3. In a lock, the combination of a case, a bolt reciprocating in the case, an outside retractor, and a pivoted dog extending from one side of the bolt to the other for engaging the retractor to stop the same, a key-operated member provided with a lost motion connection with the dog and an inside control member at a point remote engaging with said dog.

4. A lock, having in combination, a case, a bolt slidable therein, an outside retractor, and a locking dog in the form of a yoke plate extending from one side of the bolt to the other provided with one arm adapted to dog the retractor, and a key-operated member engaging one of the arms of the yoke, and a thumb-actuated member engaging near the other arm of the yoke.

5. A lock, having in combination, a case, a bolt slidable therein, an outside retractor, and a locking dog in the form of a flat yoke plate provided with a heel, one arm of the yoke plate arranged to dog the retractor, a key-operated member engaging the other arm of the yoke plate, and an inside control member engaging the heel of the yoke plate.

6. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a locking dog in the form of a yoke, provided with an arm adapted to dog the retractor, a key-operated member arranged to engage the other arm of the yoke, and an inside control member arranged to operate upon an intermediate point of the yoke that dogs the retractor.

7. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a locking dog in the form of a yoke pivoted near its center, a key-operated member having a lost motion connection with one arm of the yoke while one arm of the yoke may engage the retractor to dog the same, and an inside control member engaging the yoke at a point remote from the key-operated member.

8. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a locking dog pivoted near its center and shaped in the form of a yoke provided with a heel, one of the arms of the yoke arranged to engage the retractor to dog the same, a key-operated member engaging the other arm of the yoke and provided with a lost motion connection, and an inside control member engaging the heel of the yoke.

9. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a locking dog in the form of a yoke pivoted near its center and provided with a heel, one arm of the yoke arranged to engage the retractor to dog the same, a key-operated slotted hub engaging the other arm of the pivoted yoke and having a lost motion connection due to said slot, and an inside control member engaging adjacent the arm of the yoke that dogs the retractor.

10. A lock, having in combination, a case, a bolt guided therein, an outside retractor, and a dog in the form of a yoke pivoted near its center and having a heel, one arm of the dog arranged to dog the retractor, a key-operated slotted hub engaging the other arm of the yoke and provided with a lost motion connection therewith due to the slot in the hub, and an inside control member engaging the heel of the dog and arranged to turn the dog into dogging position or out of dogging position.

11. A lock, having in combination, a case, a bolt guided therein, an outside retractor on one side of the bolt, a locking dog in the form of a relatively large plate extending from one side of the bolt to the other, and provided with a part on one side of the bolt for engaging and dogging the outside retractor, and provided with a second part on the other side of the bolt, with which a lock may be connected on a door having a lock, and an inside control member arranged to engage a third portion of the dog for operating the same from the inside of the door.

In testimony whereof I affix my signature.

ANDREW CHRISTIAN ANDERSEN.