F. C. MILLER.

DOOR LOCK FOR AUTOMOBILES, &c.

APPLICATION FILED MAR. 19, 1912.

1,067,048. Patented July 8, 1913.

Fig. 1.

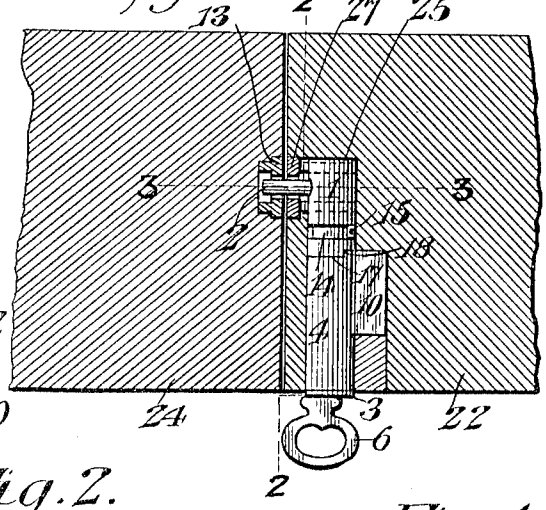


Fig. 7.

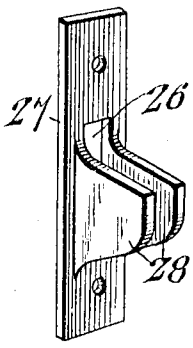


Fig. 8.

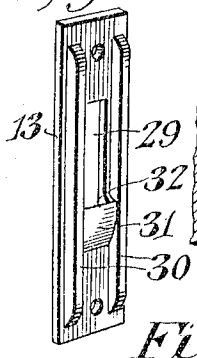


Fig. 2.

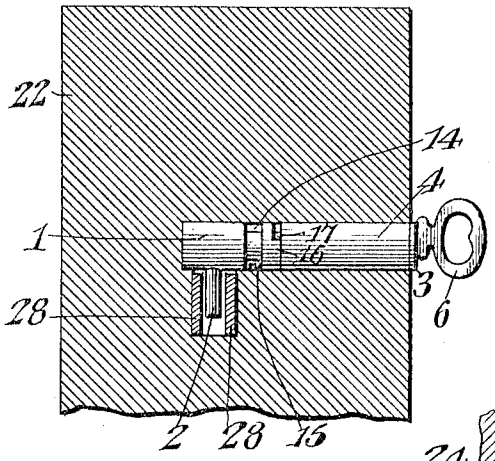


Fig. 4.

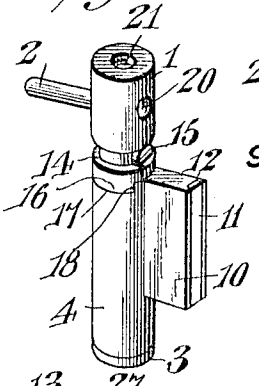


Fig. 5.

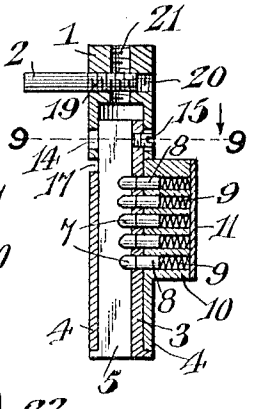


Fig. 6.

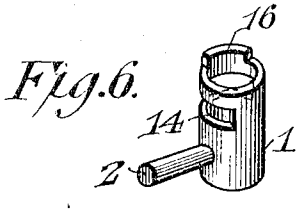


Fig. 3.

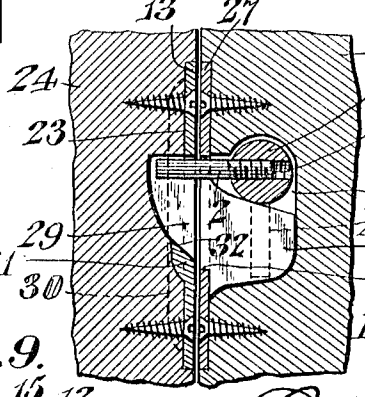
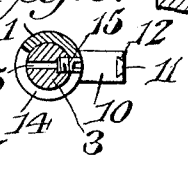


Fig. 9.



WITNESSES

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DOOR-LOCK FOR AUTOMOBILES, &c.

1,067,048. Specification of Letters Patent. **Patented July 8, 1913.**

Application filed March 19, 1912. Serial No. 684,869.

To all whom it may concern:

Be it known that I, FRANKLIN C. MILLER, a citizen of the United States, residing at Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Door-Lock for Automobiles, &c., of which the following is a specification.

The invention relates to improvements in door locks for automobiles and the like.

The object of the present invention is to improve the construction of door locks, and to provide a simple, efficient and comparatively inexpensive door lock, designed for use on automobiles and various other vehicles, and adapted to enable the owner of such a vehicle to leave the same with perfect safety, and of preventing a thief or unauthorized person from opening the door of the automobile and thereby gaining access to the interior, the lock being equipped with key controlled means, adapted to be released only by a key in possession of the owner.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a horizontal sectional view of a door lock, constructed in accordance with this invention, and shown applied to a portion of an automobile. Fig. 2 is a sectional view on the line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of the lock detached. Fig. 5 is a central longitudinal sectional view of the same. Fig. 6 is a detail perspective view of the rotatable bolt. Fig. 7 is a detail perspective view of the mortise face plate. Fig. 8 is a detail perspective view of the keeper. Fig. 9 is a detail sectional view on the line 9—9 of Fig. 5.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates a rotatable bolt consisting of a sleeve having a locking or engaging arm 2 and mounted on the inner end of a cylinder 3, projecting beyond a cylindrical casing 4 and provided with a key hole or slot 5 for the reception of a key 6 for operating co-acting tumbler pins 7 and 8. The tumbler pins are pressed by springs 9 housed in an off-set chamber 10 of the barrel or casing 4. The tumbler pins 7 and 8 and the actuating springs 9 are of the ordinary well known construction, and the off-set chamber 10 is provided at the back or outer portion with a removable plate or closure 11 slidably mounted in grooves 12 and adapted to afford convenient access to the said chamber in assembling the tumbler pins and the springs, but the off-set chamber may be constructed in any other suitable manner, as will be readily understood.

The inner end of the cylinder projects beyond the barrel or casing 4, and the said cylinder is adapted to make one complete rotation so that the key 6 can be inserted to operate the lock and removed after the latter is in locked position. The bolt 1, however, is intended to turn only through an arc of ninety degrees to be thrown into and out of engagement with a keeper 13, but it may be moved through an arc of a greater or less number of degrees to carry it to and from its engaging position. For this purpose the bolt has an arcuate slot 14, into which extends a stop 15 preferably consisting of a screw secured to the cylinder. The inner end of the tubular bolt or sleeve 1 is provided with an arcuate projection 16, formed by recessing or cutting away the end of the tubular bolt or sleeve, and operating in an arcuate recess 17 of the inner end of the barrel or casing, and adapted to engage the opposite end walls or shoulders 18 of the said recess, so that the sleeve or bolt can make only a partial rotation. The slot 14

and the projection or slot 15 constitute a lost motion connection between the rotary cylinder and the tubular bolt or sleeve. When the key 6 is inserted in the lock for releasing the cylinder from the locking action of the tumbler pins, the cylinder is adapted to be rotated and during its rotation the projection 15 is carried through the slot 14 until it comes in contact with one of the end walls thereof, and by engaging the same rotates the tubular bolt or sleeve and swings the engaging or locking arm or member 2 in one direction. A reverse movement of the key will carry the projection 15 through the slot 14 to the other end thereof, and will cause the said projection to rotate the tubular sleeve or bolt a partial revolution in the opposite direction from which it was previously rotated.

The arm or member 2, which is arranged at right angles to the cylinder and bolt, has a threaded inner portion 19, arranged in a threaded opening 20, extending transversely through the bolt to enable the locking arm to be applied to either side thereof, and the bolt is also preferably provided at its outer end with a longitudinal opening 21 interiorly threaded and intersecting the transverse opening 20 to enable a set screw to be employed where practical and desirable for engaging the said threaded portion of the arm or member 2.

In the accompanying drawing, the lock is shown applied to a door 22, and the keeper 13 is mounted in a recess 23 in the frame or casing 24, but the reversible arm or member 2 will enable the lock to be mounted on either the door or the frame. The lock is arranged in a recess or mortise 25, and the arm or member 2 is adapted to swing through a slot 26 of a mortise face plate 27, provided at opposite sides of the slot with parallel integral inwardly projecting guide flanges 28, forming a guide for the oscillatory locking arm or member and extending beneath the bolt and supporting the same, as clearly illustrated in Fig. 3 of the drawing. The keeper, which is provided with a longitudinal slot 29 to receive the locking arm or member 2, consists of a plate provided in the back with longitudinal ribs 30, which are connected with the bottom of the slot by a transverse enlargement 31. The ribs and the enlargement increase the width of the walls of the slot 29 at the sides and bottom thereof, and the bottom wall 32 of the slot is inclined, as shown, to provide a clearance for the locking arm or member 2. When the locking arm is swung to its engaging position and the key withdrawn, it is impossible to turn or throw the bolt. While the lock is particularly adapted for use on automobiles and various other vehicles, it may be employed on any door where a safe lock of this character is desired.

What is claimed is:—

1. A lock of the class described including a casing designed to be mounted on a door, a cylinder rotatable in the casing, key-released means for controlling the rotary movement of the cylinder, a bolt mounted for rotary movement on the end of the cylinder and extending therefrom in a direction longitudinally thereof, said bolt being provided with an engaging member fixed to and extending laterally from the bolt and arranged to project beyond the door, a lost motion device connecting the bolt and the cylinder to permit the latter to make a complete turn while the bolt is given a partial turn, and a fixed keeper arranged in the path of the said engaging member and adapted to be engaged by the same to secure the door in its closed position.

2. A lock of the class described including a casing, a rotatable cylinder mounted in the casing, key released means for controlling the rotary movement of the cylinder, and a bolt consisting of a rotary sleeve fitted on one end of the cylinder and projecting beyond the same and provided with a laterally projecting arm forming an engaging member, and a lost motion device connecting the bolt and the cylinder to permit the latter to make a complete turn while the bolt is given a partial turn.

3. A lock of the class described including a casing, a rotatable cylinder mounted in the casing, key released means for controlling the rotary movement of the cylinder, a bolt consisting of a sleeve rotatably mounted on the cylinder and having a projecting locking arm or member, a lost motion connection between the bolt and the cylinder to permit the latter to make a complete turn while the bolt is given a partial turn, a keeper arranged to be engaged by the arm, and a mortise face plate having a slot for the passage of the said arm and provided with inwardly projecting flanges forming a guide for the arm and a support for the bolt.

4. A lock of the class described comprising a casing, a cylinder rotatably mounted in the casing, key released means for controlling the rotary movement of the cylinder, a bolt consisting of a sleeve rotatably mounted on the cylinder and having a locking member and provided with an arcuate slot, and a projection carried by the cylinder and operating in the slot to permit the cylinder to have a limited movement independent of the bolt.

5. A lock of the class described including a casing provided at its inner end with a recess forming opposite shoulders, a cylin-

der rotatably mounted in the casing and projecting from the inner end thereof, key released means for controlling the turning of the cylinder, a bolt consisting of a sleeve mounted on the inner end of the cylinder and provided with an arcuate slot and having a terminal portion operating in the recess of the casing between the said shoulders, and a lost motion connection between the bolt and the cylinder to permit the latter to make a complete turn while the bolt is given a partial turn.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANKLIN C. MILLER.

Witnesses:
S. S. HORN,
RUSSELL D. WELCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."