July 8, 1924. 1,500,435

L. G. BOWLES

LOCK

Filed Oct. 18, 1923 2 Sheets-Sheet 1

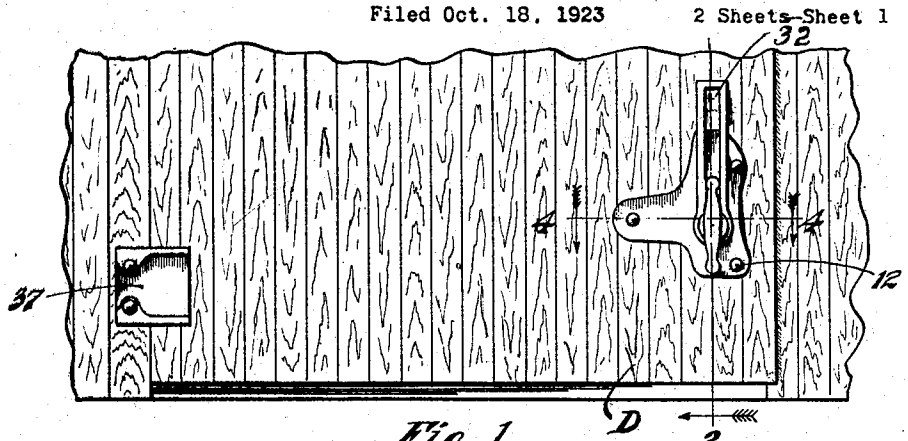


Fig. 1

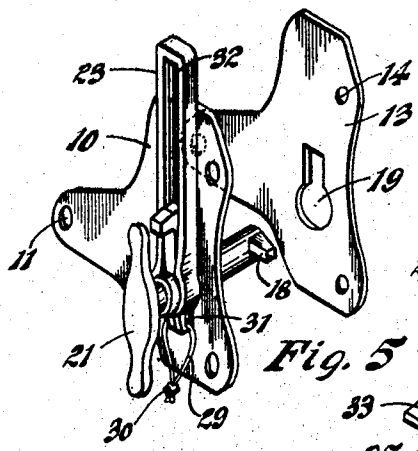


Fig. 5

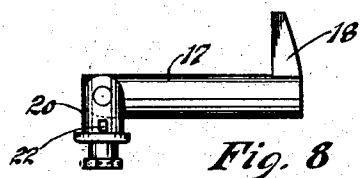


Fig. 8

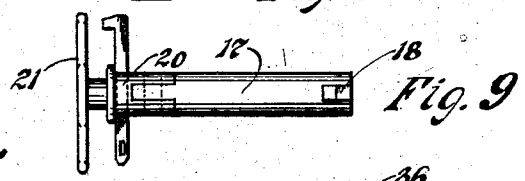


Fig. 9

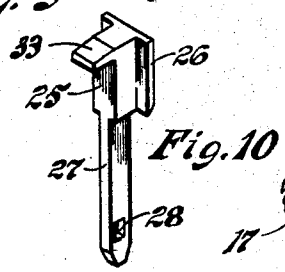


Fig. 10

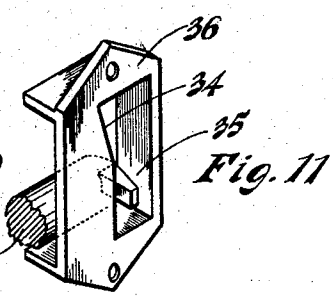


Fig. 11

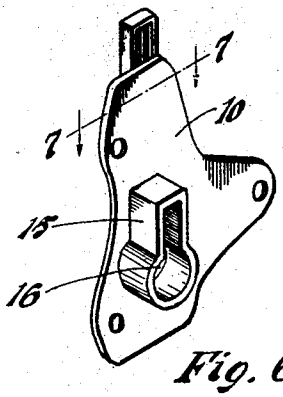


Fig. 6

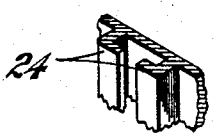


Fig. 7

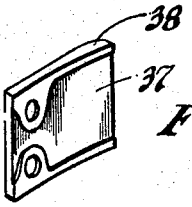


Fig. 12

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July 8, 1924. 1,500,435

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LOCK

Filed Oct. 18, 1923. 2 Sheets-Sheet 2

Fig. 2

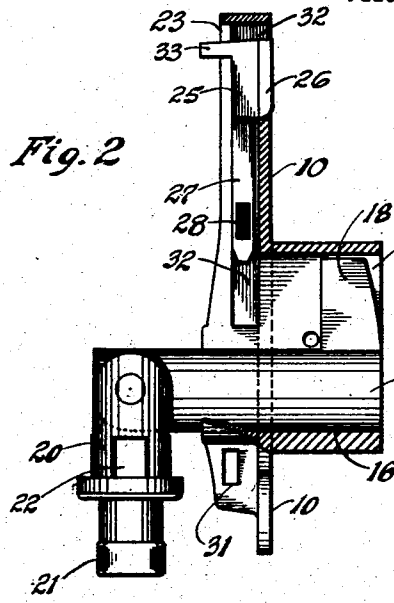


Fig. 4

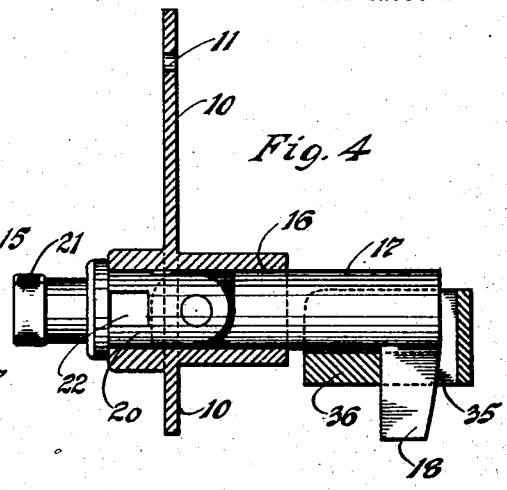
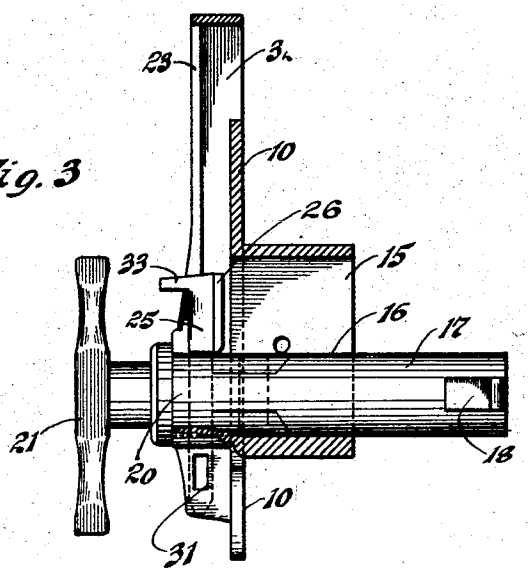


Fig. 3



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Patented July 8, 1924. 1,500,435

UNITED STATES PATENT OFFICE.

LEONARD G. BOWLES, OF COLUMBUS, GEORGIA, ASSIGNOR OF ONE-HALF TO B. S. MILLER, OF COLUMBUS, GEORGIA.

LOCK.

Application filed October 18, 1923. Serial No. 669,406.

To all whom it may concern:

Be it known that I, LEONARD G. BOWLES, a citizen of the United States, residing at Columbus, in the county of Muscogee and State of Georgia, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to locks, and has special reference to a lock for freight car doors.

It is well known to all those connected with the freight departments of railroads that the ordinary type of freight car door lock is not only inefficient in holding the door in locked position, but either fails to keep the door tight or so jambs the door that it is necessary to employ a pinch bar to open such door with consequent destruction of the door and increasing cost of upkeep.

The principal and most important objects of the present invention are to provide an improved general construction of freight car door lock which will not only constitute in itself a secured locking means adapted for the use of the ordinary seal, but which will also provide means for drawing the door tightly closed and for opening and closing the door when it is desired to move the same along the car.

With these and other objects in view, as will be hereinafter set forth, the invention consists in general of an improved freight car door lock constructed and arranged to constitute a secure and efficient lock which, when moved to locking position, will pull the door tightly into its closed position, and when released, is adapted for use as a handle to open and close the door.

In the accompanying drawings like characters of reference indicate like parts in the several views, and:

Fig. 1 is a side view of a portion of a freight car body showing the position of the lock thereon.

Fig. 2 is an enlarged detail section on the line 2—2 of Fig. 1 showing the lock in its open position, one position of the key being shown in dotted lines, and another in full lines.

Fig. 3 is a section similar to Fig. 2, but showing the parts in the closed position.

Fig. 4 is a section on the line 4—4 of Fig. 1.

Fig. 5 is a detail perspective view of those parts of the lock which are attached to the door proper.

Fig. 6 is a rear face view of the front door plate of the lock.

Fig. 7 is a detail section on the line 7—7 of Fig. 6.

Fig. 8 is a view of the locking shaft with the parts in the position assumed when the lock is unlocked.

Fig. 9 is a view similar to Fig. 8 but with the parts in the position assumed when the lock is locked, the view also showing the relationship of the key.

Fig. 10 is a detail view in perspective of a certain key employed herewith.

Fig. 11 is a detail perspective view of the keeper plate and the end of the locking arm or shaft.

Fig. 12 is a detail perspective view of the back edge plate.

In the embodiment of the invention shown in the accompanying drawings and which constitute one preferred form of the device, there is provided a front door plate 10 of general T-shape, the head of the T being arranged vertically on the door and the stem projecting laterally. This door plate is provided with suitable openings 11 for the reception of bolts 12 for securing the plate to the door. A similarly shaped back door plate 13 is also provided and this plate has openings 14 alined with the openings 11 so that the bolts 12 may pass through both plates. Extending from the back face of the front plate 10 is a key hole shaped housing 15 having a cylindrical lower part and rectangular upper part, as can be clearly seen from Fig. 6. This housing opens through the plate as at 16, and in the cylindrical lower part is fitted a locking shaft 17 having from its inner end a laterally extending arm 18, the proportions of the shaft and arm being such that, when the shaft is drawn to the front in the housing, the arm 18 and inner end of the shaft will be securely housed. This housing 15 passes through a keyhole shaped opening 19 in the back plate 13, and has its inner end flush with the face of that plate. Pivotally connected to the shaft 17 is a short section 20 carrying on its outer end an operating handle 21, and provided intermediate its ends with a diametrically disposed slot or opening 22. Extending vertically from the opening 16 in the plate 10 is a guide-way 23 having overhang-

ing lips 24 best seen in Fig. 7. Slidably mounted in this guide-way is a key having a head 25 provided on its back with a projecting lug 26 forming a pair of flanges which engage beneath the lips 24. The lower end of the key 25 is reduced as at 27 to slide through the opening 22, and is provided with an opening 28 to receive the sealing wire 29 so that a seal 30 may be used to hold the ends of this wire together, the wire passing through suitable openings 31 formed in the lower end of the guide-way 23. The upper end of the guide-way 23 projects beyond the top of the plate 10 so that a recess 32 is formed between the guide-way and the face of the door D, the purpose of this recess being to permit seating of the lugs or flanges 26 therein when the key is lifted whereby the key is held in its lifted position but may be dropped by simply grasping the operating finger 33 on the key and drawing the same forward.

It will now be seen that the shaft 17 and its joint 20 may be protracted and retracted with respect to the housing so that the locking arm 18 may project inwardly of the housing and be turned to engage a cam surface 34 on the edge of a slot 35 formed in a keeper 36 secured to the door jamb. Thus by shoving the shaft in with the handle and rotating the handle 90 degrees, the door is pulled tightly home, it being assumed that it is in closed position at this time. Then the key 27 may be dropped and the parts will be locked so that the shaft 17 may neither be rotated nor moved longitudinally. For the purpose of guiding the other edge of the door in position, a suitable guide plate 37 having a curved under surface 38 may be employed.

It will also be seen that when the shaft 17 is retracted in the housing 15, the handle 21 may be dropped down, as shown in Fig. 8, and thus be out of the way. Furthermore, this position of the handle will prevent accidental protraction of the shaft 17 from its housing.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that minor changes may be made in the form and construction of the invention without in any way departing from the material spirit thereof. It is not, therefore, desired to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:

1. In a car door lock, a plate adapted for attachment to a car door and forming a base, a shaft extending slidably and rotatably through said plate, a locking arm on the inner end of the shaft, an operating handle on the outer end of the shaft, said inner and outer ends being hingedly connected to permit the handle to fold down on said plate upon retraction of the shaft, and a key slidably mounted on said plate, said shaft having a slot extending through its inner end for engagement by said key whereby to prevent movement of the shaft when protracted and in locked position.

2. In a car door lock, a plate adapted for attachment to a car door and forming a base, a shaft extending slidably and rotatably through said plate, a locking arm on the inner end of the shaft, an operating handle on the outer end of the shaft, said inner and outer ends being hingedly connected to permit the handle to fold down on said plate upon retraction of the shaft, a key slidably mounted on said plate, said shaft having a slot extending through its inner end for engagement by said key whereby to prevent movement of the shaft when protracted and in locked position, and a lug on the back of said key, said plate having a recess therein into which said lug drops upon movement of the key to release the shaft.

3. In a car door lock, a plate adapted for attachment to a car door and forming a base, a shaft extending slidably and rotatably through said plate, a locking arm on the inner end of the shaft, said plate having a key-hole housing extending from the back side to receive the inner end of the shaft and the arm upon retraction of the shaft, an operating handle on the outer end of the shaft, said inner and outer ends being hingedly connected to permit the handle to fold down on said plate upon retraction of the shaft, and means releasably engaging the shaft to prevent retraction and rotation of the shaft when protracted and in locked position.

4. In a car door lock, a plate adapted for attachment to a car door and forming a base, a shaft extending slidably and rotatably through said plate, a locking arm on the inner end of the shaft, said plate having a key-hole housing extending from the back side to receive the inner end of the shaft and the arm upon retraction of the shaft, an operating handle on the outer end of the shaft, said inner and outer ends being hingedly connected to permit the handle to fold down on said plate upon retraction of the shaft, means releasably engaging the shaft to prevent retraction and rotation of the shaft when protracted and in locked position, and a lug on the back of said key, said plate having a recess therein into which said lug drops upon movement of the key to release the shaft.

In testimony whereof I hereunto affix my signature.

LEONARD G. BOWLES.