W. S. WOODWARD.

SLIDING DOOR LOCK.

APPLICATION FILED APR. 6, 1914.

1,141,439. Patented June 1, 1915.

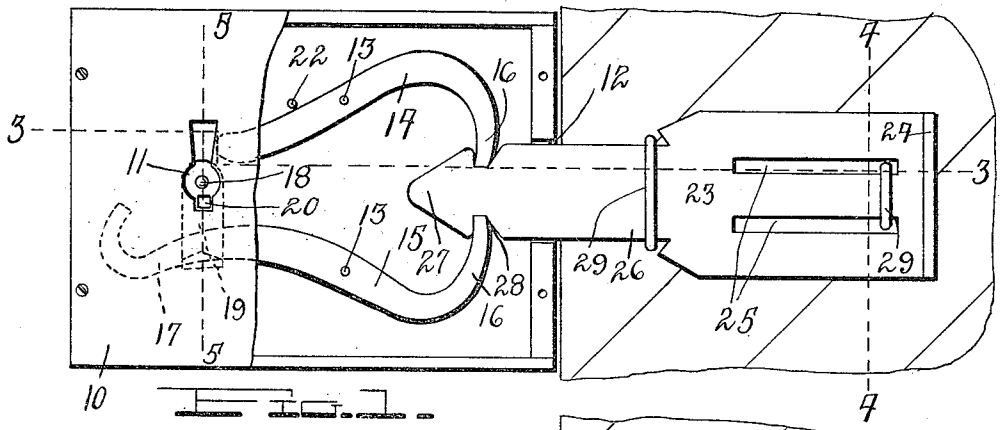


FIG. 1.

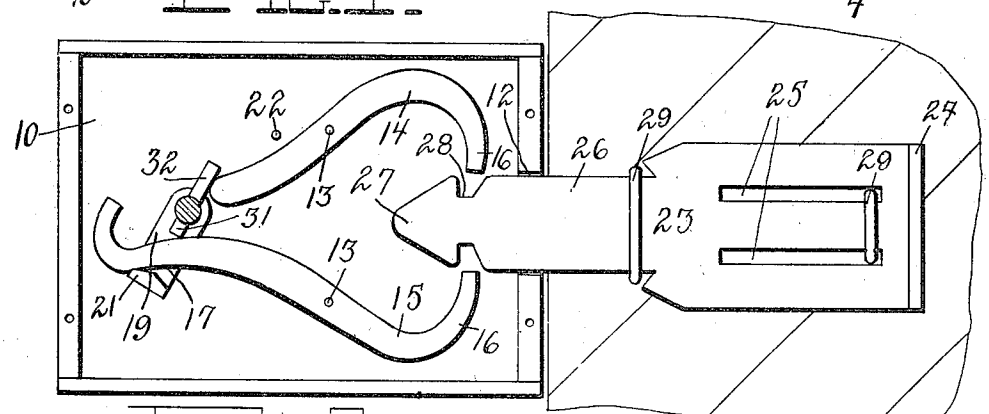


FIG. 2.

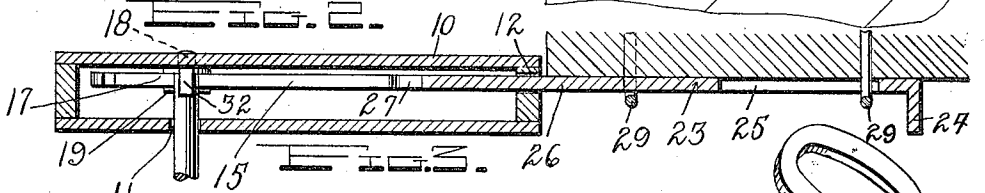


FIG. 3.

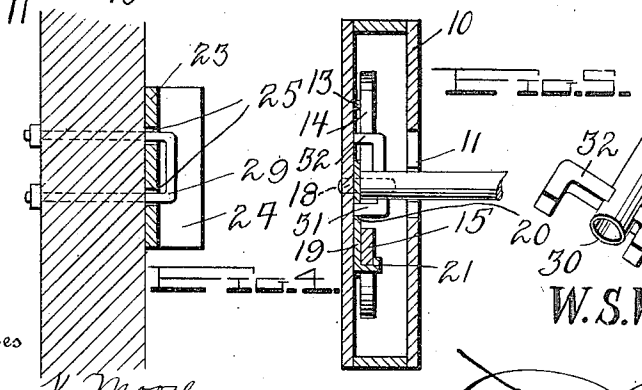


FIG. 4.

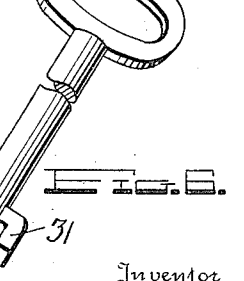


FIG. 5.

FIG. 6.

Witnesses

Arthur K. Moore

C. E. Chandlee.

Inventor

W. S. Woodward

By Chandlee & Chandlee

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM S. WOODWARD, OF BURT, MICHIGAN.

SLIDING-DOOR LOCK.

1,141,439. Specification of Letters Patent. Patented June 1, 1915.

Application filed April 6, 1914. Serial No. 830,009.

To all whom it may concern:

Be it known that I, WILLIAM S. WOODWARD, a citizen of the United States, residing at Burt, in the county of Saginaw, State of Michigan, have invented certain new and useful Improvements in Sliding-Door Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in sliding door locks and has reference to an article of this nature particularly adapted for use in connection with sliding doors for freight cars.

In carrying out the invention it is my purpose to provide a lock of this character which may be automatically locked when the door is in its closed position, and which cannot be unlocked without the use of the proper key.

A further object of my invention is the provision of a strong and durable lock of this character, that is efficient in operation, may be manufactured at a comparatively low cost, and is composed of a few simple parts that will not easily get out of order.

With these and other objects in view my invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claim.

In the accompanying drawing:—Figure 1 is a side elevation of the lock applied to a car with the front of the casing removed and the various parts shown in their locked position. Fig. 2 is a view similar to Fig. 1 but showing the parts in their unlocked position. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a sectional view on the line 4—4 of Fig. 1. Fig. 5 is a sectional view on the line 5—5 of Fig. 1. Fig. 6 is a perspective view of the key used in connection with my lock.

Referring now to the drawing in which like characters of reference designate similar parts, the numeral 10 designates a casing, having a key opening 11 and a slotted portion 12, said casing being mounted on the outside of a door frame and secured thereto by bolts or other suitable fastening means.

Arranged within the casing 10, and pivotally mounted on pins 13 carried thereby, are a pair of locking levers 14 and 15, the outer ends of which are provided with oppositely turned coöperating locking fingers 16. The inner end of the lever 15 is continued beyond that of the lever 14, and terminally provided with a cam surface 17, the purpose of which will presently appear.

Mounted in the casing 10 and disposed rearwardly of the lever 14, and above the inner extremities of the lever 15, is a pin 18, said pin being centered in the key opening 11. Pivotally mounted on this guide pin 18 is a supporting bracket 19, said bracket being formed with a squared key receiving opening 20 and provided at its lower end with an outwardly and upwardly directed portion 21, said portion being adapted to support the inner end of the lever 15 and engage the cam surface 17 thereof.

The casing 10 is also provided with a stop pin 22, said pin being disposed above the inner end of the lever 14 and adapted to limit the downward movement of the finger 13 thereof when same is in its inoperative position.

Insertible within the slotted portion 12 of the casing 10 is a locking bolt 23, said bolt being stamped from a single blank of metal and provided at one end with a right angular extension or handle portion 24 and longitudinal slots 25. The other end of the lock bolt 23 is slightly reduced as at 26 and terminally provided with a wedge-shaped head 27 and notches 28, said notches receiving the fingers 13 of the levers 14 and 15 when the device is in its locked position. This lock bolt 23 is slidably mounted on the car door, and held in position thereon by means of U-bolts 29, one of said U-bolts straddling the reduced portion 26 of the bolt and supporting the inner end thereof, and the legs of the other U-bolt passing through the slots 25 of the bolt and limiting the sliding movement thereof with respect to the door.

Illustrated in Fig. 6 of the drawing is the key used in connection with this lock, said key being provided with a socket 30 and projections 31 and 32, the former being squared and insertible within the squared opening 20 of the bracket 19 and the latter engageable with the inner end of the locking lever 14.

In operation the bolt 23 is slid to its operative position in the guide staples 29 by means of the handle 24, the reduced portion of the bolt passing through the slot 12 and into the casing 10. On entering the casing

the wedge-shaped head 27 engages and spreads the locking levers 14 and 15, the fingers 16 of the levers riding on the slanting faces of the head and dropping into the notches 28. The device is now in its locked position.

To unlock the door the key is inserted in the opening 11, the guide pin 18 projecting into the socket 30, and the squared projection 31 passing into the squared opening in the bracket 19. The key is then rotated on the pin 18, the bracket 19 swinging rearwardly thereon, the supporting end 20 of the bracket engaging the cam surface 17 of the lever 15, and the projection 32 of the key engaging the inner end of the lever 14. The fingers 16 of the levers are thus swung out of engagement with the notches 28 and the various parts placed in their unlocked position as is clearly shown in Fig. 2.

From the above description it will be seen that I have provided an extremely strong, durable and inexpensive device of the kind described which is composed of a few parts that will not easily get out of order.

What is claimed, is:—

In a lock, the combination of a bolt adapted for attachment to a relatively movable element and having opposed notches in its side edges, a keeper comprising a pair of members pivotally supported upon a relatively fixed element and having opposed fingers engageable in respective notches of the bolt when the latter is in locking position, a pivoted element supported from the relatively fixed element and engaging one of the members of the keeper to limit movement thereof in one direction, key operated means provided at one side with a projection insertible in an opening in said pivoted element whereby the latter will be swung to move the keeper member engaged thereby out of locking relation to the bolt, and a projection carried at the opposite side of said key operated means and engageable with the other member of the keeper during the swinging of said pivoted element to move the last named member out of locking relation to the bolt.

In testimony whereof, I affix my signature, in the presence of two witnesses.

WILLIAM S. WOODWARD.

Witnesses:
JAS. W. MORSE, Jr.,
J. C. MCINTOSH.

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