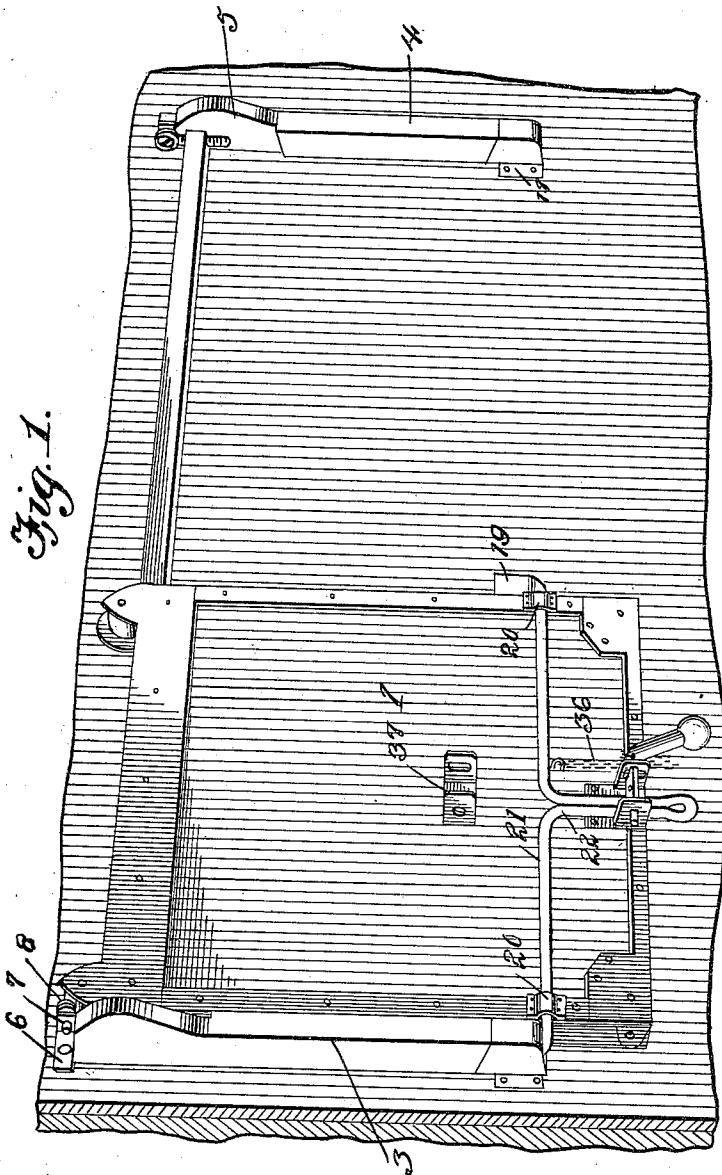


W. F. HACKNEY.
SLIDING DOOR FASTENER.
APPLICATION FILED NOV. 23, 1909.

997,805.

Patented July 11, 1911.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS-SHEET 2.

Fig. 2.

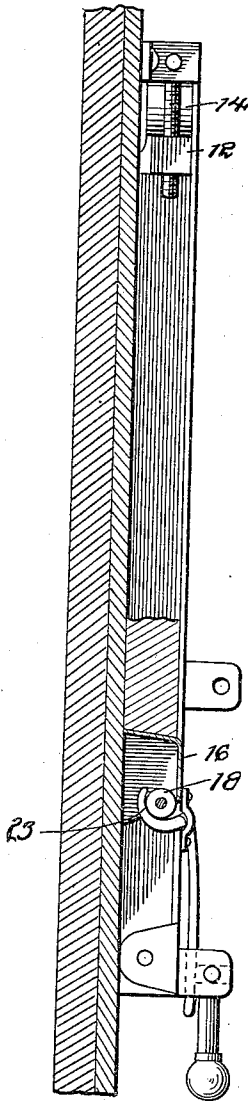


Fig. 3.

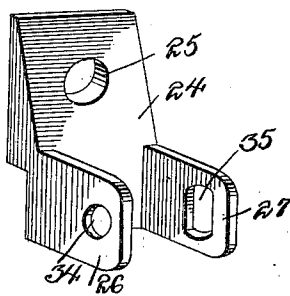
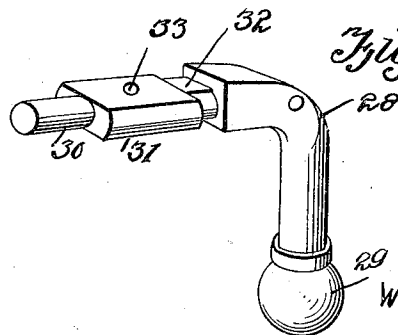


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM F. HACKNEY, OF WASHINGTON, KANSAS, ASSIGNOR OF ONE-HALF TO EDGAR BENNETT, OF WASHINGTON, KANSAS.

SLIDING-DOOR FASTENER.

997,805.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed November 23, 1909. Serial No. 529,647.

To all whom it may concern:

Be it known that I, WILLIAM F. HACKNEY, a citizen of the United States, residing at Washington, in the county of Washington and State of Kansas, have invented new and useful Improvements in Sliding-Door Fasteners, of which the following is a specification.

The invention relates to an improvement in sliding door fasteners, being more particularly directed to locking and supporting mechanisms whereby the door may be secured in open or closed position and conveniently moved longitudinally or swung outwardly from the door opening.

The main object of the present invention is the provision of locking mechanism in the use of which the door is clamped tightly in position and conveniently fastened against unauthorized unlocking, the supporting mechanism being adjustable relative to the car proper to provide for correcting door sagging, being at the same time adapted to permit the lateral swinging of the lower end of the door to secure various advantageous results.

The invention in its preferred details of construction will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a perspective of the improved door and mechanism therefor. Fig. 2 is a vertical section taken through one of the uprights, the upper portion of the upright being broken away to show the upper edge of the door. Fig. 3 is a perspective view of the keeper bracket. Fig. 4 is a perspective view of the locking lever.

Referring particularly to the accompanying drawings the improved door 1 will, aside from the details hereinafter noted, be constructed in any preferred or usual manner, being designed to close the usual opening in the side 2 of the car. Slightly beyond the opposing positions of the door, when opened and closed, there is secured to the car side what I term uprights 3 and 4, the former being arranged adjacent one edge of the door opening and the latter remote from the

opposing edge or side opening, said uprights forming the limit of movement of the door in both directions. The upper ends of the uprights are reduced in thickness, providing comparatively narrow extensions 5, and above the upper ends of each upright there is secured to the car an angle bracket 6 in the forward projection 7 of which there is threaded a pivot pin 8. On each of the pins is mounted a track supporting bolt 9 formed at the upper end with an eye 10 to permit the passage of the pivot pin and below said eye to provide a threaded shank 11 designed for engagement with a threaded opening in the track bar 12. The track bar is preferably in the form of a rectangular strip, and of such length that the ends thereof fit movably between the proximate surfaces of the reduced portions of the uprights, as clearly shown in Fig. 5 of the drawings.

The door proper is provided on its upper edge with a bracket plate 13 extending the full width of the door and projecting above the upper edge thereof. Mounted on the plate above the upper edge of the door are upper and lower guide rollers 14 and 15, preferably arranged in vertical spaced pairs to receive the track 12 between them. The rollers are preferably flanged on their inner ends, the plate serving as the forward guide for the track, and as the upper rollers support the weight of the door, they are preferably of greater diameter than the lower rollers.

At the lower end of each upright 3 and 4 is a keeper housing 16, preferably a hollow metallic body having laterally projecting flanges 17 whereby it may be secured in place. Within the housing is mounted a keeper roller 18 preferably of the full width of the housing. Immediately adjacent the edge of the door opening opposing the upright 3 is arranged an auxiliary or additional keeper housing 19 similar to those previously described. Mounted in brackets 20 secured to the forward surface and adjacent the side edges of the door is a locking lever or rod 21. This rod is preferably constructed of a single length of material cen-

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trally bent to provide a depending handle portion 22, the ends of the rod being projected beyond the bracket and curved to form locking hooks 23 conforming to the curvature of the keeper rolls 18. The handle and hooks are so disposed with relation to each other that when the handle is arranged in contact with the surface of the door below the main length of the rod the hooks will be in position to engage beneath the keeper rollers.

Secured upon the forward surface of the door below the locking rod and in line with the handle portion thereof is what I term a keeper bracket 24 comprising a plate-like section formed with an opening 25 whereby the bracket may be secured in place and provided below the opening with forwardly projecting spaced parallel flanges 26 and 27. Said keeper bracket is secured in such position that when the handle 22 has been operated to move the rod to locking position said handle will rest between the flanges 26 and 27 of the bracket.

In Fig. 7 I have illustrated a locking lever comprising an L-shaped member 28 having one arm thereof terminally provided with a weight 29. The opposing arm is terminally formed to provide a pivot pintle 30 and beyond said pintle with a rectangular portion 31, being reduced beyond the rectangular portion to provide a secondary pintle 32. The rectangular portion 31 is centrally formed with a seal receiving opening 33, all as clearly shown in Fig. 7. The flange 26 of the keeper bracket is formed with an opening 34 corresponding in diameter to the diameter of the pintle 30 while the flange 27 is formed with a rectangular opening 35 corresponding in dimensions to the rectangular portion 31 of the locking lever. It will be noted that the rectangular portion 31 of the locking lever is of greater width than thickness, and that this width is at right angles to the arms of the lever carrying the weight. Furthermore, the opening 35 in the flange 27 of the keeper bracket has its major dimension extending vertically or parallel to the proximate surface of the car door, whereby it will be seen that it is impossible to introduce the locking lever through the opening 35 except by holding the weighted arm thereof in a position at right angles to the surface of the door. The locking lever is preferably connected through the medium of a chain 36 with a staple secured in the door whereby the lever is in a position convenient for use at all times. Immediately above the main keeper bracket there is secured to the door a second keeper bracket 37 corresponding to the main bracket and designed to receive the handle when the locking rod is in unlocked position, said second

keeper bracket being formed similarly to the first mentioned keeper bracket for the reception of the locking lever.

In use, when it is desired to lock the door in closed position, the door is moved to close the door opening and the locking rod operated to cause the hooks 23 thereof to engage the keeper rollers in the casing 16 of the upright 3 and in the casing 19. With the rod in locking position the handle 22 rests between the flange of the main keeper bracket and the locking lever is then inserted to secure the handle in such position. As previously described the insertion of the locking lever is only possible when the weighted arm thereof is arranged at right angles to the surface of the door, in which position the dimensions of the rectangular portion 31 of said lever are so arranged as to permit the passage of said portion through the opening 35. When the lever has been moved so as to dispose the rectangular portion 31 between the flanges 26 and 27 the pintles 30 and 32 rest in the openings 34 and 35, so that upon release of the weighted end of the lever the latter will drop to arrange the rectangular portion 31 across the opening 35 to permit withdrawal of the lever. A seal of any approved type is secured in the opening 33 preventing any unauthorized unlocking of the door. The door may be locked in open position by an identical operation, the hooks of the operating rod cooperating with the keeper casing of the upright 4 and the casing 19.

By the connection of the track it is obvious that the lower end of the door may be swung laterally from the car body with perfect freedom, the track following such movement by reason of its mounting on the pivot pins 8. Furthermore in the event of an improper fitting of a sagging of the door it may be readily corrected by adjusting the track on the bolts 9. The lateral swinging of the door and its convenient sliding in any position relative to the car body is a decided advantage in that it permits such manipulation of the door in the opening thereof as to avoid binding obstructions within the car, cleats or loose boards on the upper surface of the car, it will also permit the door to be swung up in a position to provide a roof cover for loading material into the car for hauling or the like during inclement weather.

The door surface as well as the locking mechanism may be readily applied to other than car structures, being adapted for example for storage compartments of any character.

Having thus described the invention, what I claim as new, is:—

In a car door fastener, the combination of

a locking rod rotatably mounted in keepers attached to the door, of an operating handle formed at the center and continuous with said locking rod, of keeper brackets mounted 5 above and below said locking rod to admit the retention of said operating handle, a locking lever provided with a rectangular portion which exerts a cam action on said handle, and a weighted arm integral with said locking lever to gravitate it to its 10 locked position after insertion into said keeper brackets.

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

WILLIAM F. HACKNEY.

Witnesses:

ANGUS D. McLEOD,
GEORGE A. WRIGHT.

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