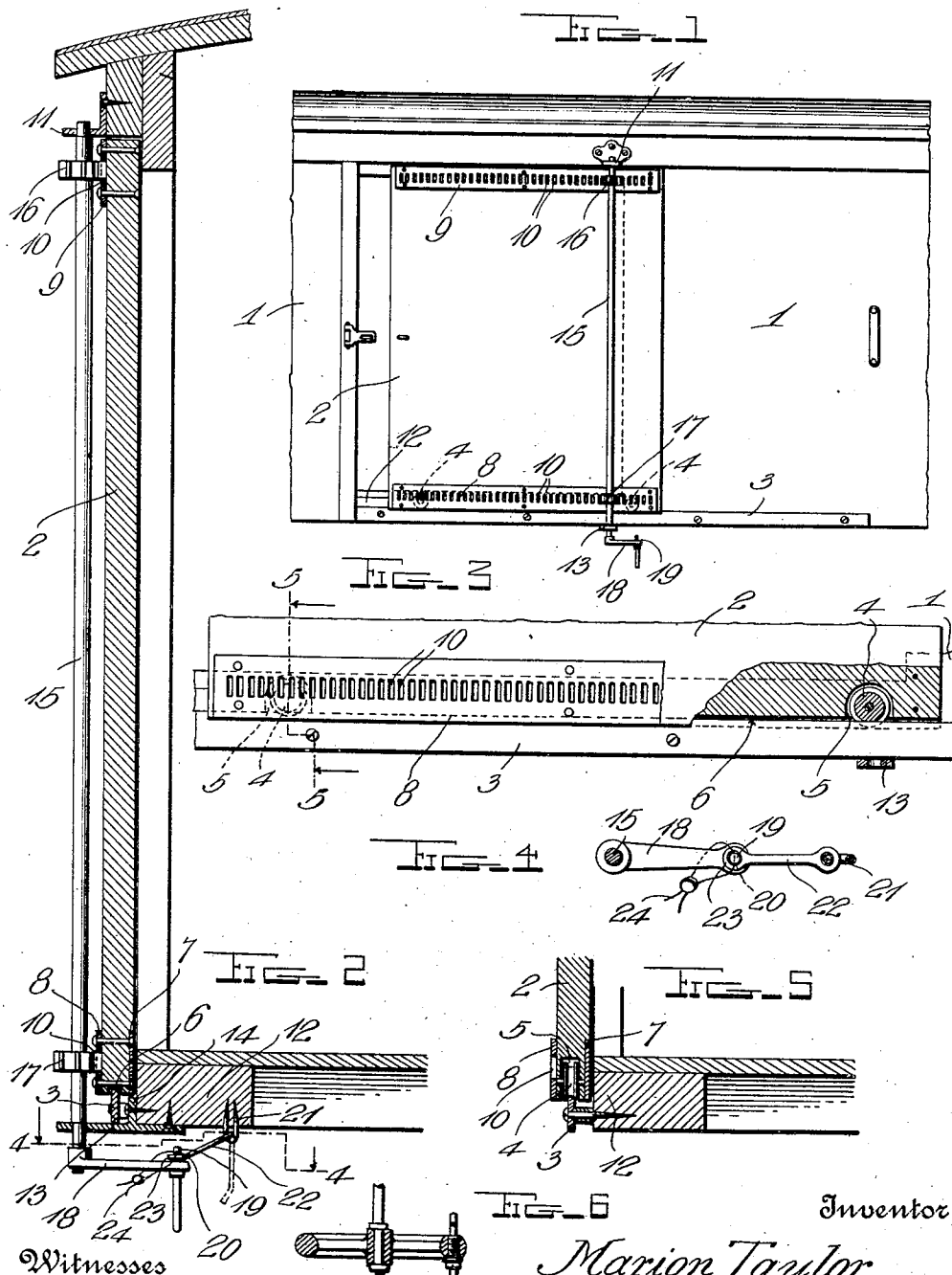


M. TAYLOR.
 OPERATING MECHANISM FOR CAR DOORS.
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OPERATING MECHANISM FOR CAR-DOORS.

1,041,901.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MARION TAYLOR, a citizen of the United States, residing at Soudan, in the county of Mecklenburg, and State of Virginia, have invented certain new and useful Improvements in Operating Mechanism for Car-Doors; and I do 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 operating mechanism for the doors of freight cars.

One object of the invention is to provide a door operating mechanism of the character described which is constructed and arranged in such manner that pressure will be applied to the door at the top and bottom thereof, thereby causing the door to open smoothly and without binding.

Another object is to provide means for fastening the operating mechanism and means whereby a seal may be applied thereto.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of a portion of a freight car showing the application of the invention to the door, the latter being illustrated in a partly open position; Fig. 2 is an enlarged vertical sectional view through the door showing more clearly the manner in which the door operating mechanism is applied and means whereby the same is fastened; Fig. 3 is an enlarged side view partly in section of the lower portion of the door and the adjacent parts of the car, showing the arrangement of the door supporting rollers and track; Fig. 4 is a horizontal sectional view taken on the line 4-4 of Fig. 2 showing a plan view of the crank handle of the door operating mechanism and the means for fastening and sealing said handle against operation; Fig. 5 is a detail vertical section on the line 5-5 of Fig. 3 showing more clearly the arrangement of the supporting roller and track of the door. Fig. 6 is a detail sectional view of the lower end of the door operating shaft showing the same provided with a hand wheel instead of a crank handle.

Referring more particularly to the draw-

ing, 1 denotes the side of a freight car, 2 denotes the door which is slidably supported by a track bar 3 secured to the side of the car along the lower edge thereof as shown. The track bar 3 is spaced a suitable distance from the side of the car and is adapted to receive grooved door supporting rollers 4 which are revolubly mounted in recesses 5 formed in the lower edge of the door as clearly shown in Figs. 3 and 5 of the drawing. In the lower edge of the door is also formed a longitudinal groove or channel 6 into which the upper edge of the track bar projects. The upper edge of the track bar when thus engaged with the groove 6 positively holds the door against swinging outwardly at its lower edge and keeps the supporting rollers thereon into operative engagement with the track. On the inner side of the door along its lower edge is arranged a wear plate 7 and on the outer side of the door along its lower edge is arranged a rack plate 8, while on the outer side of the door along its upper edge is arranged a rack plate 9. The plates 8 and 9 are bolted or otherwise rigidly secured to the door and have formed therein series of slots or notches 10.

Secured to the outer side of the car adjacent to the upper edge of the door and near the rear edge of the door opening in the side of the car is an upper bearing bracket 11, while to the floor sill 12 of the car below and in line with the bracket 11 is a lower bearing bracket or plate 13, having an upwardly projecting right angular sill engaging lug 14. In the brackets 11 and 13 are formed bearing apertures in which are revolubly mounted the reduced ends of a door operating shaft 15 which is disposed adjacent to the outer side of the door and has fixedly mounted thereon near its ends, spur gear pinions 16 and 17 which are adapted to respectively engage the notches 10 of the lower and upper rack plates 8 and 9 as clearly shown in Figs. 1 and 2 of the drawing.

Fixedly mounted on the lower end of the shaft 15 is a crank handle 18 on the outer end of which is an upwardly projecting fastening stud 19 having therein near its upper end a transverse aperture 20, the purpose of which will be hereinafter described. Loosely connected by a staple or other suitable fastening device 21 to the lower side of the floor sill 12 of the car is a handle fastening

link 22 in the outer end of which is an eye 23 adapted to be engaged with the stud 19 on the end of the handle when the latter is swung around beneath the car as clearly shown in Figs. 2 and 4 of the drawings. When the link 22 is thus engaged with the handle 18 the latter and the operating mechanism of the door will be securely fastened and the door thus locked in a closed position or in any other position to which the same may have been moved by the operating mechanism. The handle 18 when thus fastened by the link 22 will be held beneath the car in an out of the way position wherein the handle is not liable to be brought into engagement with or struck and damaged by other objects. After the link 22 has been engaged with the stud 19 in the manner described, a sealing wire 24 may be engaged with the aperture 20 in the stud 19 and said wire passed around the handle and a seal applied thereto as shown in Figs. 2 and 4 of the drawing, thereby preventing the release of the handle for moving the door without first breaking the sealing wire or seal.

By providing a door operating mechanism constructed in accordance with my invention and applying the same to the door near the upper and lower edges thereof as herein shown and described it will be seen that pressure will be applied to the door at both the upper and lower ends thereof, thus causing the upper and lower portions of the door to be moved at the same speed which will positively prevent either end of the door from binding and thus becoming stuck or wedged as frequently occurs when opening and closing the usual form of freight car doors and which when thus becoming stuck or jammed frequently require the combined efforts of several men to release the same. Another important feature of the invention is the arrangement of the operating handle and the means for fastening the same beneath the car as herein shown and described wherein the handle will be in an out of the way position and the operating mechanism securely locked and sealed against movement thereby holding the door in a closed, open or partly open position.

In Fig. 6 of the drawings I have illustrated a hand wheel which may be substituted for the crank handle 18, if desired.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the

invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

1. In an operating mechanism for car doors, a revolubly mounted operating shaft geared to the door near the upper and lower ends thereof, a crank handle fixed on the lower end of said shaft and adapted to revolve beneath the car, an apertured stud arranged on said handle, a handle fastening link loosely secured to the under side of the car and having on its free end an eye adapted to be engaged with the stud on said handle whereby the latter is fastened beneath the car and the operating mechanism thereby locked to hold the door in a closed or open position, and a seal adapted to be engaged with the apertured stud on the handle whereby the link is prevented from being disengaged from the stud without breaking the seal.

2. An operating mechanism for car doors, means to slidably support said door, upper and lower rack plates secured thereto adjacent to the top and bottom of the door, shaft supporting brackets secured to the car above and below the door opening therein, an operating shaft revolubly mounted in said brackets, gears fixedly mounted on said shaft and adapted to engage the rack plates on the door, a crank handle fixed on the lower end of said shaft, an apertured stud arranged on said handle, a handle fastening link loosely secured to the under side of the car and having in its free end an eye adapted to be engaged with said stud whereby the handle is fastened beneath the car and the operating mechanism thereby locked to hold the door in a closed or open position, and a seal adapted to be applied to the apertured stud on said handle whereby the link is prevented from being disengaged from the stud without breaking the seal.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MARION TAYLOR.

Witnesses:

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