

J. G. HORAZDOVSKY.
 MEANS FOR OPERATING AND LOCKING CAR DOORS.
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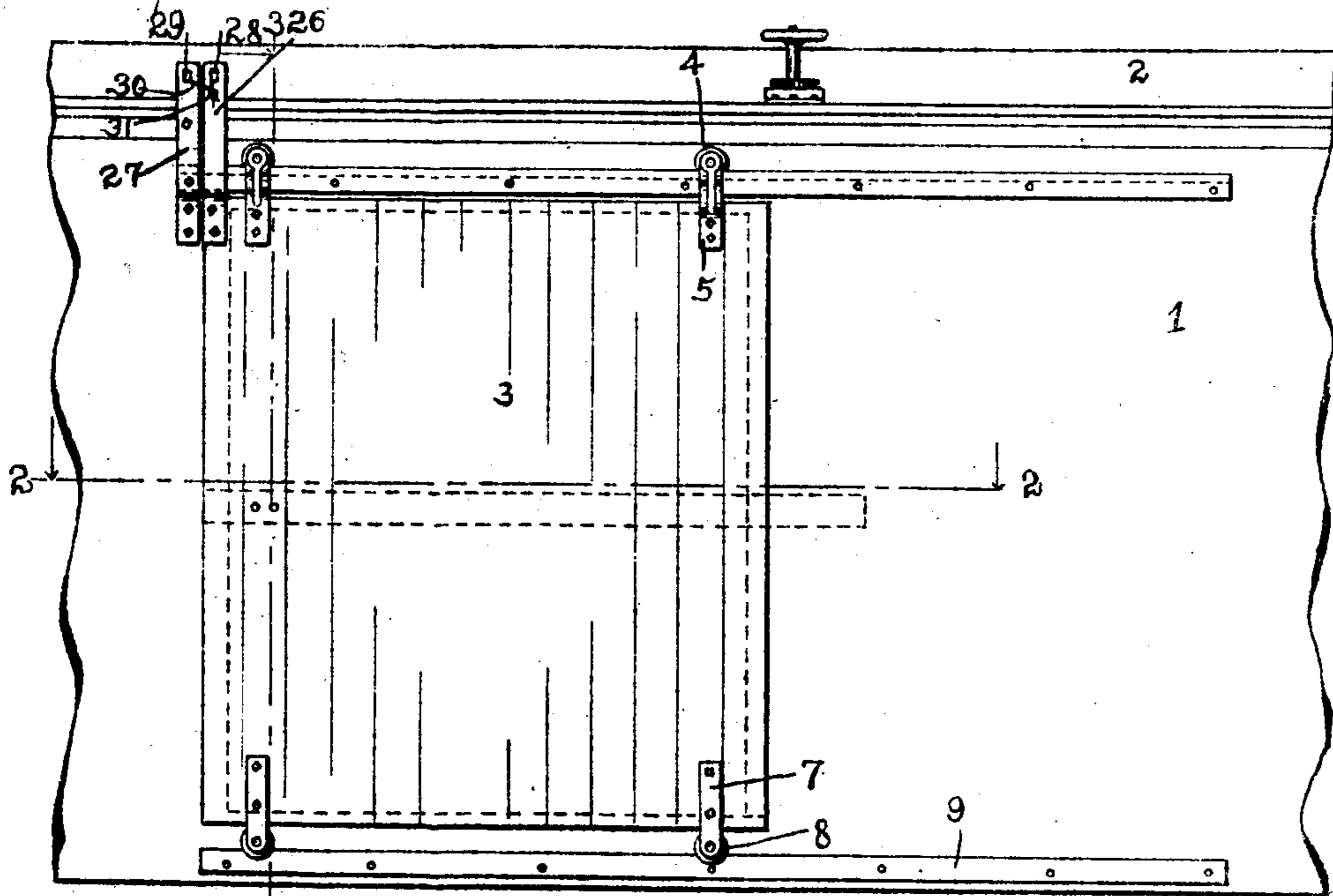


Fig. 1

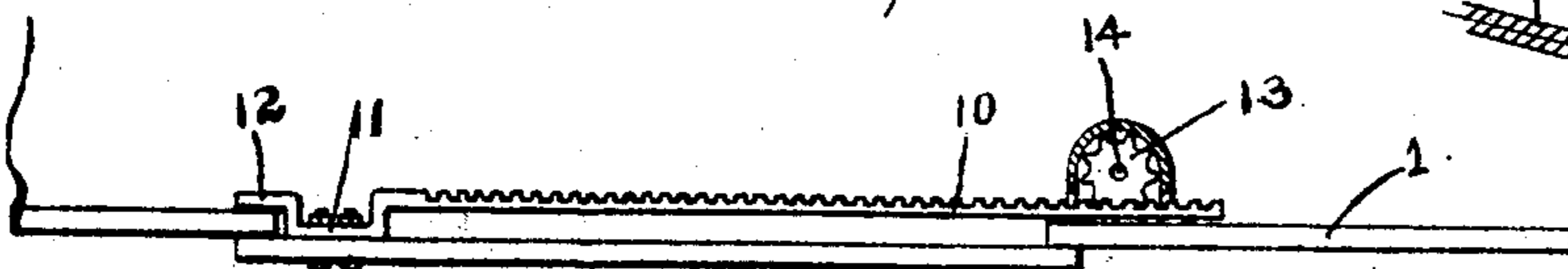


Fig. 2

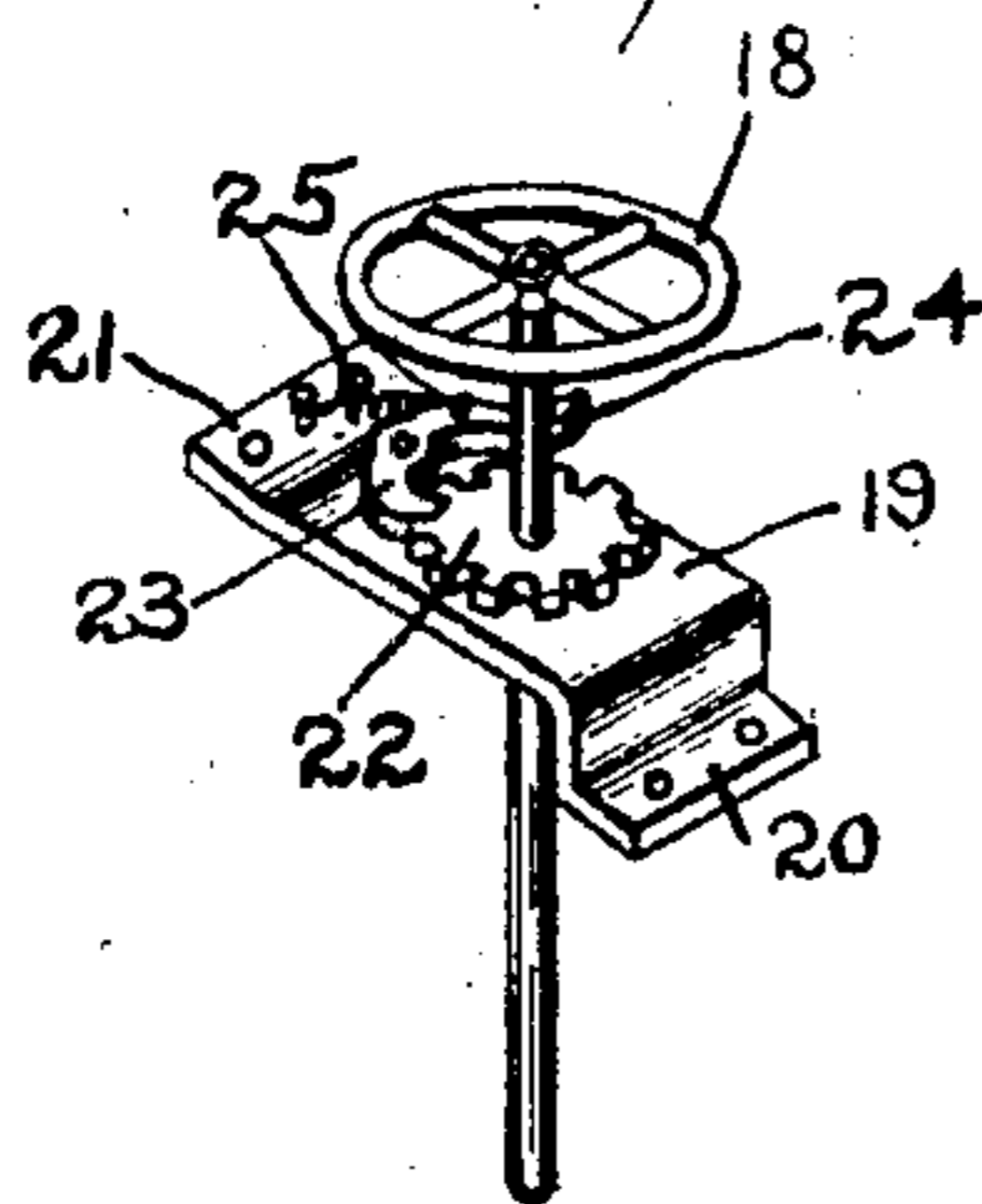


Fig. 3

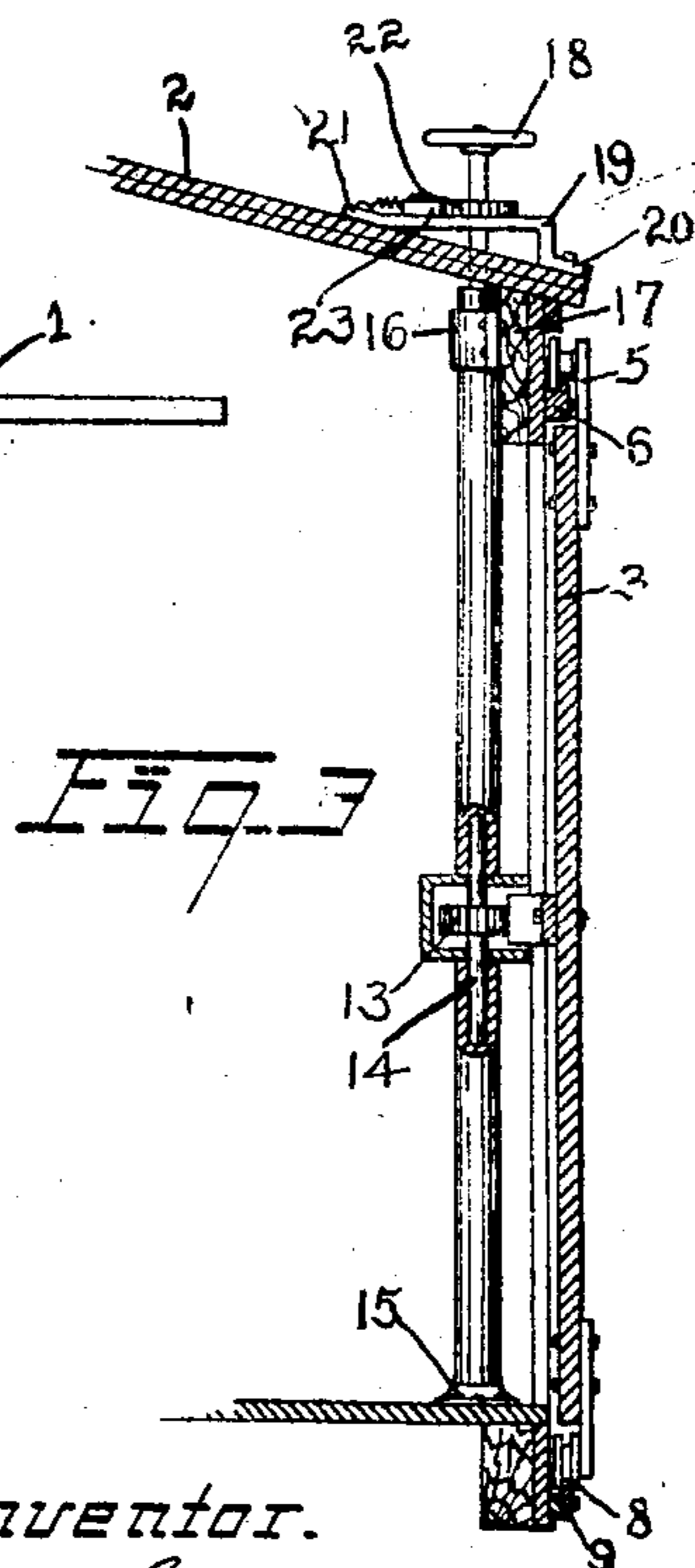


Fig. 4

Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH G. HORAZDOVSKY, OF CLEVELAND, OHIO.

MEANS FOR OPERATING AND LOCKING CAR-DOORS.

No. 910,819

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed October 28, 1907. Serial No. 399,461.

To all whom it may concern:

Be it known that I, JOSEPH G. HORAZDOVSKY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Means for Operating and Locking Car-Doors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to means for operating and locking car doors and has for its objects to provide such doors with simple, positive and effective means whereby they may be opened and closed and to locate such operating means so that they will be inaccessible except from the roofs of the cars with which they may be associated and to provide the same with locking means which will positively lock the door in any desired position and which will be so located as to make it necessary for the operator to get onto the roof of the car in order to gain access to the lock and to the operating means.

As is well known, the doors of freight cars are frequently opened by tramps and others for the purpose of stealing a ride as well as for the purpose of removing the contents of the car. This is particularly the case where the cars are collected in a yard, the doors of a great majority of the cars being invisible to the watchmen or the towermen. Even when the doors are provided with padlocks, such locks are frequently picked or broken. With the construction which I have devised, it will be impossible for any person to open the doors of the cars without climbing upon the roofs of the cars, thereby placing themselves in view of the towermen or the yard watchmen or other employees of the road. With this locking and operating means, I provide means whereby the doors, when closed, may be conveniently sealed, whereby any tampering with the door of a car may be readily evidenced by the breaking of the seal. I attain these results by means of the construction illustrated in the drawings forming a part hereof, wherein—

Figure 1 represents a side elevation of a portion of a freight car, showing my invention applied thereto; Figs. 2 and 3 represent sectional views taken on the correspondingly-numbered lines of Fig. 1, and Fig. 4 represents an enlarged perspective detail show-

ing the means whereby the door operating shaft is positively locked in any desired position of the door.

Describing now the parts by reference characters, 1 represents the side of the car, 2 the roof thereof, and 3 the door. As illustrated, this door may be of the sliding type, being provided at the upper end with rollers 4, carried by straps 5 and engaging a cleat or angle iron 6 on the upper portion of the car side and preferably secured to the upper sill of the side frame. 7 denotes straps carried by the lower portion of the door and each provided with a roller 8 engaging an upwardly projecting strip 9 carried by the lower sill of the car frame.

To the inner surface of the door there is applied a longitudinally extending rack 10, said rack being conveniently formed on a metallic bar or strip which is provided near one end with the U-shaped portion 11, by means of which the rack may be bolted to the door, leaving a space between the body of the rack and the door and between the end 13 of the same and the door. The toothed portion of the bar extends beyond the edge of the door and, when the door is in closed position, overlaps the side 1 of the car for a sufficient distance to receive there a pinion 13 mounted on an operating shaft 14.

The operating shaft 14 has its lower end journaled in a suitable bearing 15 carried by the car floor and has its upper portion journaled in a suitable bearing 16 which is carried by the upper sill 17 of the carbody frame. The upper end of the shaft projects through the roof 2 and is provided with an operating handle 18. To avoid interference with any of the articles that may be stowed within the car, shaft 14 and pinion 13 are incased. The casing for pinion 13 is interposed between the sleeve sections of the casing for the shaft and forms therewith a complete inclosure for the portion of the shaft that is within the car, as well as forming a casing for the pinion 13.

19 denotes a plate which is mounted on the roof of the car, at the eaves of the same. This plate is provided with inclined flanges 20 and 21 by means of which it may be bolted to the car roof and is provided in its body portion intermediate of said flanges, with an aperture for the shaft 14. Rigid with the shaft is a ratchet wheel 22, said wheel being provided with square or rectangular teeth, the spaces between which are adapted to receive

the end of a pawl 23, such end being shaped to fit such recesses. This pawl is pivoted to the plate 19 and is provided with an operating extension 24 to which there is connected
5 a spring 25, which normally holds the locking end of the pawl between a pair of teeth on the ratchet 22.

The rack 10 may be conveniently located about midway of the height of the car door,
10 so that the power applied to the rack may be exerted along the vertical center of the door, enabling it to be moved positively by the shaft and pinion, or a pair of such racks may be provided, one at the top and the other at
15 the bottom of the door, with a pair of pinions for operating the same, one for each rack. For convenience of description, the end of the door adjacent to which the U-shaped portion 11 of the rack is bolted will be designated as the "rear" end of the door and the opposite
20 portion will be designated as the "front" end of the door.

26 denotes a strap or plate which is carried by the upper rear end of the door and 27
25 a similar plate or strap which is carried by upper portion of the side of the car, adjacent to the rear edge of the door opening. These plates or straps are provided respectively with apertures 28 and 29 at their upper
30 ends for the reception of a cord or chain 30 to which a seal 31 may be applied.

With the construction and arrangement of parts as described, it will be apparent that, in order to operate the door, it will be necessary
35 for the operator to get on top of the car and remove the locking end of pawl 23 from its position between the teeth of the ratchet 22. The operator may accomplish such removal in any well known manner, as by pressing
40 his foot against the extension 24. When the door has been moved to a desired position, either open or closed or intermediate between such positions, the locking end of the pawl will automatically enter a recess in the
45 ratchet 22 and automatically lock the shaft, and, through its positive connection with the door through the rack 10, the shaft will retain door 3 in such position. The opposite ends of the rack bar 10, when the door is
50 closed, assist in clamping the door to the side to prevent the lateral displacement of the door.

It is apparent that I have embodied, in an extremely simple construction, means where-
55 by car doors cannot be moved in directions to open or close the same without the necessity for the operator to climb upon the roof of the car, thereby rendering him extremely liable to observation by the towermen, watchmen,
60 or other employees of the railroad. Furthermore, the arrangement of the plates 28 and 29 furnishes an indicator whereby the brakeman on top of the car can readily observe whether the door has been opened or tam-
65 pered with.

Having described my invention, I claim:

1. The combination, with a car, of a sliding door therefor having a rack, an operating shaft for said rack extending above the roof of the car and there provided with operating
70 means, a pinion on said shaft meshing with said rack, and locking means for said shaft also located above the roof of the car, substantially as specified.

2. The combination, with a car, of a sliding door therefor provided on the inner face
75 thereof with a rack, an operating shaft within the car and extending through the roof of the same and provided above the roof with means whereby it may be rotated, a pinion
80 on said shaft meshing with said rack, and locking means for said shaft located above the roof of the car, substantially as specified.

3. The combination, with a car, of a sliding door therefor, having on the inner face
85 thereof a rack, a shaft within the car and extending through the roof of the same and there provided with means whereby it may be rotated, a pinion on said shaft meshing with said rack, a ratchet wheel on said shaft
90 located above the roof of the car, and a pawl engaging said ratchet to prevent the rotation thereof, substantially as specified.

4. The combination, with a car, of a sliding door therefor provided on its inner face
95 with a rack, a shaft within the car and extending through the roof of the same and there provided with means whereby it may be operated, a pinion on said shaft meshing with said rack, a ratchet wheel on said shaft
100 and also located above the roof of the car, and a pivoted pawl adapted to engage the teeth of the ratchet wheel, and a spring tending to force said pawl into engagement with said teeth, substantially as specified.
105

5. The combination, with a car having a sliding door of a rack on the inner face of said door, a shaft within said car and extending through the roof of the same and there provided with means whereby it may be rotated,
110 a pinion on said shaft meshing with said rack, a plate on the roof of the car having an aperture through which said shaft extends, a ratchet wheel carried by said shaft above said roof, and a pawl carried by said plate
115 and adapted to enter the recesses between the teeth of the ratchet wheel, substantially as specified.

6. In a car, the combination of a door, operating mechanism for said door located
120 inside of the car and extending through the roof, and means located above said roof for locking said mechanism, substantially as specified.

7. In a car, the combination of a sliding
125 door, a rack secured to the inner face of said door and extending longitudinally thereof, a vertical shaft having a pinion meshing with said rack and extending through the roof of the car, an inclosing casing for said shaft and
130

pinion, and means located above the roof of the car whereby said shaft may be rotated, substantially as specified.

5 8. In a car, the combination of a sliding door, a rack secured to the inner face of said door about midway of the height and extending longitudinally thereof, a vertical shaft having a pinion meshing with said rack and extending through the roof of the car, and means located above the roof of the car whereby said shaft may be rotated, substantially as specified.

10 9. The combination, with a car having a side opening therein, of a sliding door mounted outside of said opening, a rack extending longitudinally of the door and having its opposite ends offset from the door to provide therewith recesses for the side of the car at opposite edges of said opening, a shaft
20 mounted within the car and extending

through the roof of the same and there provided with means whereby it may be rotated, and a pinion on said shaft meshing with said rack, substantially as specified.

10. The combination, with a car having an opening in the side thereof, of a door for said opening movable longitudinally of said car, an indicating plate or member carried by the door and projecting above the same, and a second indicating plate or member carried by the car, said plates being arranged to be in proximity when the door is closed, and means for connecting said plates, substantially as specified.

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

JOSEPH G. HORAZDOVSKY.

Witnesses:

J. B. HULL,
S. E. FOUTS.