

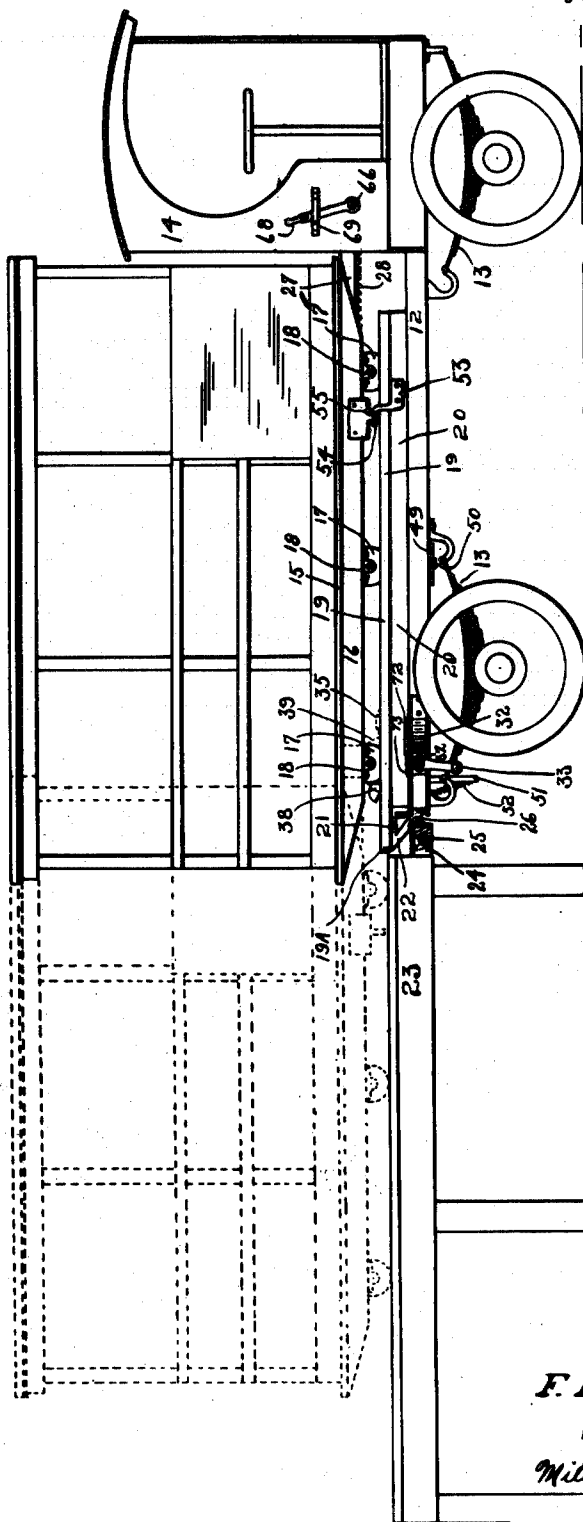
1,341,197.

F. H. REYNOLDS.
TRUCK.

APPLICATION FILED AUG. 18, 1917.

Patented May 25, 1920.

3 SHEETS—SHEET 1.



INVENTOR

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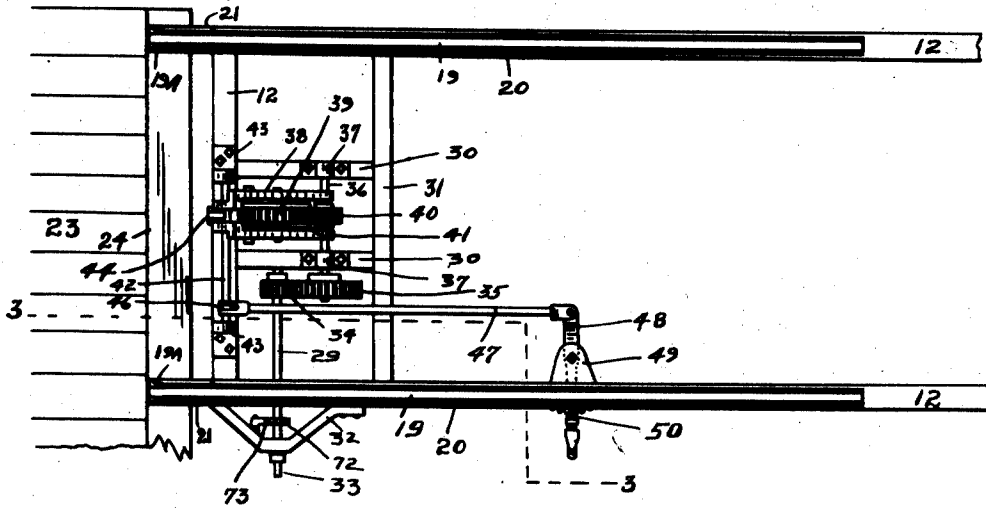


FIG. 2

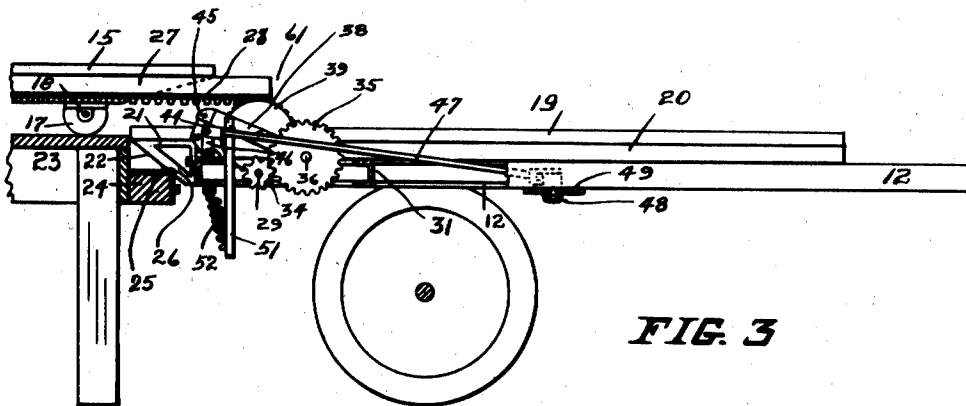


FIG. 3

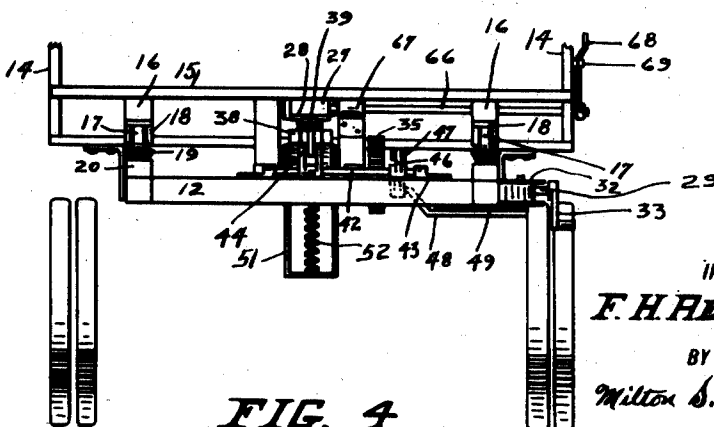


FIG. 4

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3 SHEETS—SHEET 3.

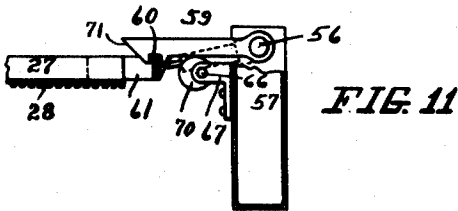


FIG. 11

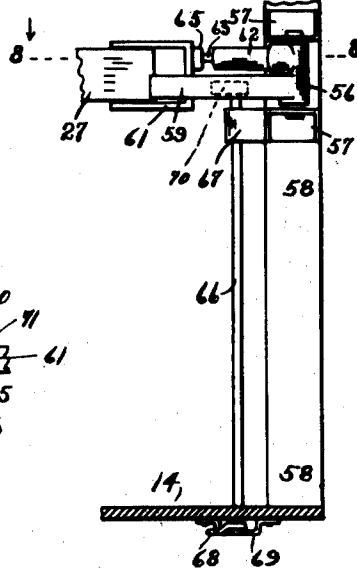


FIG. 7

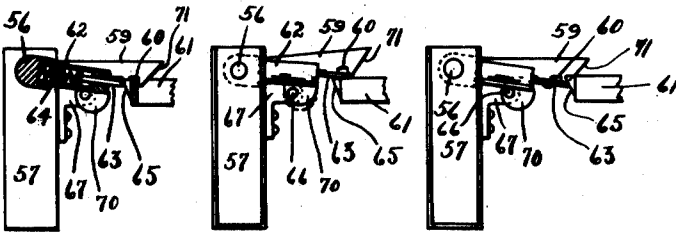


FIG. 8

FIG. 9

FIG. 10

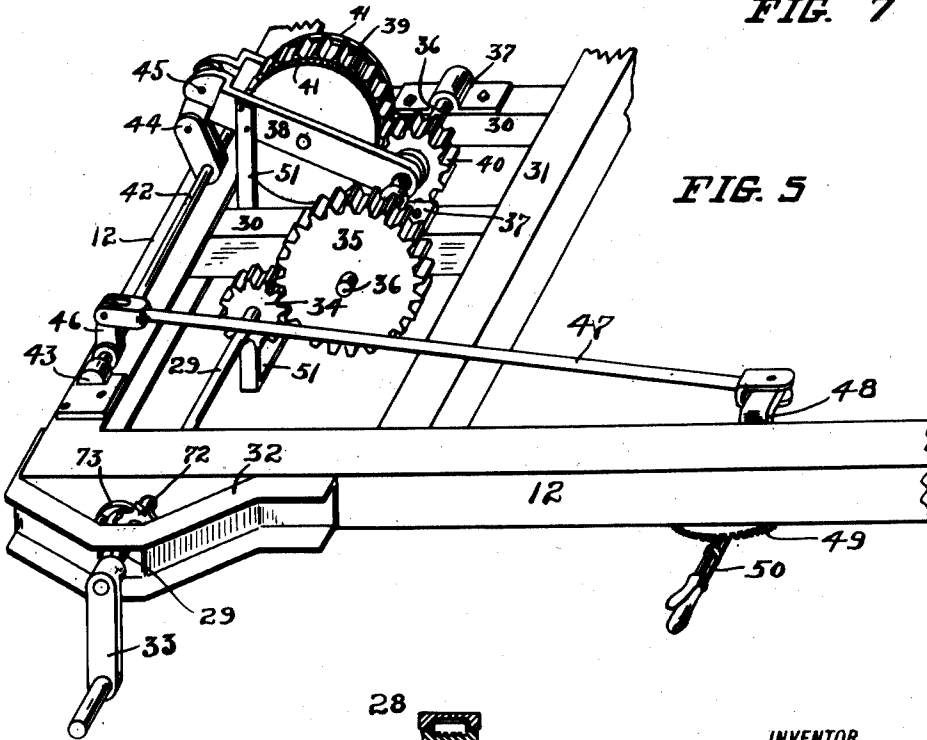
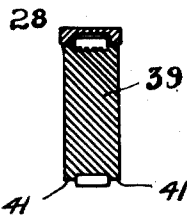


FIG. 5

FIG. 6



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UNITED STATES PATENT OFFICE

FRANK H. REYNOLDS, OF SIOUX CITY, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
IDEAL REMOVABLE BODY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF
ILLINOIS.

TRUCK.

1,341,197.

Specification of Letters Patent.

Patented May 25, 1920.

Application filed August 18, 1917. Serial No. 186,847.

To all whom it may concern:

Be it known that I, FRANK H. REYNOLDS, a citizen of the United States, and a resident of Sioux City, in the county of Woodbury and State of Iowa, have invented certain new and useful Improvements in Trucks, of which the following is a specification.

The present invention relates to trucks and more particularly to demountable bodies therefor.

The invention aims, primarily, to provide a freight-truck having a readily demountable body and improved means for mounting and demounting the body upon and from the truck.

A further object resides in the production in a freight truck having a demountable body, of improved, simplified and inexpensive operating mechanism thoroughly dependable in operation and requiring but a minimum of power.

Still another object of the invention is the production in a freight truck having a demountable body of improved means for automatically alining the truck platform with the loading platform or dock.

Furthermore the invention contemplates improved mechanism for locking the body upon the truck.

With these and other objects in view, the invention consisting in the construction, combination and novel arrangement of parts will be fully understood from the following description reference being had to the accompanying drawing which forms a part of this application and in which like characters of reference indicate corresponding parts throughout the several views, of which,

Figure 1 is a side elevation of a truck and loading dock constructed in accordance with the invention;

Fig. 2 is a plan of the rear portion of the truck-frame, power-transmission and a portion of the dock;

Fig. 3 is a vertical section of the same taken on the line 3—3 of Fig. 2;

Fig. 4 is a rear elevation of the truck, the cab being cut away;

Fig. 5 is an enlarged perspective view of the power-transmission and parts associated therewith;

Fig. 6 is a transverse section of the rack and drive pinion;

Fig. 7 is a plan of the locking mechanism and parts associated therewith;

Fig. 8 is a vertical section, taken on the line 8—8 of Fig. 7, in the direction indicated by the arrow;

Fig. 9 is a side elevation of the same in unlocked position;

Fig. 10 is a similar view, the parts being in position as prior to locking; and

Fig. 11 is an elevation of the opposite side of the same; parts being cut away.

Although I have illustrated and herein-after described the preferred embodiment of the invention I would not be understood as being limited to the specific structure chosen for illustration, for various alterations and modifications in the details of construction and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claims.

Referring, now, more particularly to Fig. 1, the truck illustrated is of the motor-driven type and includes a truck-frame, 12, supported by springs 13, upon the running-gear. Upon the front of the truck is mounted the usual cab, 14. The structure above set forth represents no part of the present invention but serves to illustrate that general type of vehicles upon which the device of my invention is perhaps best applied. The body includes a floor 15, mounted on longitudinally-disposed side beams, 16, supported by wheels, 17, having their spindles journaled in suitable bearings, 18, mounted on the under side of the said beams. The wheels, 17, travel in channeled rails, 19, mounted on beams 20, secured to the side members of the truck-frame, 12. The rails extend rearwardly a distance from the truck-frame and beams, 20, the said extended portions being supported by brackets, 21, on the truck-frame and beams, 20, and formed at their rear with inclined slides, 22.

23, represents the loading dock or platform, on the face of which is firmly secured a horizontally-disposed bar, 24, preferably having its upper outer corner clad with angle-iron 25. The bar 24, is positioned a distance below the top of the platform and is so related to the slide, 22, on the truck-frame that when the loaded truck is backed toward the dock the slide will engage and

coact with the beam, 24, to raise the rear end of the truck-frame to aline the rails, 19, substantially flush with the loading platform, in which position the rear end of the truck is supported by means of a horizontal portion of the slide, which rests upon the beam, 24. In the present embodiment this horizontal portion is provided by forming a right-angle notch, 26, in the slide which receives the corner of the beam and also serves to provide a bumper to receive the impact of the vehicle. The rear ends of the flanges of the rails, 19, are preferably flared, as at 19^A to facilitate the entrance of the wheels between the flanges.

The body is mounted and demounted by means of a rack mounted below the body and driven by means of a pinion mounted on the truck-frame. This mechanism, preferably, consists of a central longitudinal beam, 27, mounted below the body and having mounted on its under side a plate, 28, provided with rack teeth. The driving mechanism includes a shaft, 29, having its inner end portion journaled in one of two longitudinal frame members, 30, supported by a cross-member, 31, and the rear cross-member of the main-frame 12. The outer end portion of the shaft, 29, extends through the adjacent side member of the frame 12, is journaled in a suitable bearing bracket 32, mounted on the truck-frame, and is provided with a crank, 33. The shaft carries a pinion, 34, engageable with a spur-gear, 35, mounted on a shaft, 36, journaled in bearings, 37, mounted on the frame members, 30. Intermediate the frame members, 30, is a yoke, 38, having the free ends of its arms pivoted on the shaft, 36. The yoke rotatably supports a relatively large pinion, 39, intermeshed with a smaller pinion, 40, fixed on the shaft 36. The pinion, 39, drives the rack 28 and to prevent the rack from riding the teeth of the said pinion, the latter is preferably provided on its sides with annular shoulders, 41, which engage the plate, 28, at the sides of its teeth to permit free engagement of the rack and pinion teeth. Means are provided for raising and lowering the pinion 39, to engage and disengage it with and from the rack, and to regulate the position of the pinion with respect to the rack, as when the truck is unlevel in loading and unloading, the distance between the rack and truck frame varies. This means consists preferably of a rock-shaft, 42, journaled in bearings, 43, mounted on the rear of the main-frame and carrying one end of a toggle lever, 44, the other end of which is suitably pivoted as at 45, to the web of the yoke 38. The shaft is controlled by means of a crank arm, 46, mounted thereon and connected by a link, 47, with a lever 48, fulcrumed on a suitable quadrant, 49, mounted on the under side of the truck-

frame; and provided with a pawl, 50, engageable with the quadrant. It is evident that forward and rearward movement of the lever 50, accordingly lowers and raises the pinion, 39. The upper end of the yoke 38, is preferably yieldably supported to facilitate its adjustment. For this purpose, I provide an upright yoke, 51, which is secured to and depends from the yoke, 38, and between the web of the yoke, 51, and the rear of the truck-frame is interposed a retracting spring, 52.

Tipping of the body from the truck is prevented by means of plates, 53, mounted on the sides of the truck and having rearwardly extending fingers, 54, normally inclosed by retaining-eyes 55, secured to the beams, 16, of the body.

The rack beam, 27, preferably, protrudes forwardly from the body and normally extends under the driver's seat where it is releasably secured to prevent rearward movement of the body from the truck.

The locking mechanism consists preferably, of a spindle, 56, having its ends journaled in uprights, 57, mounted on a front cross-member, 58, of the truck frame. The spindle carries a rearwardly-extending dog, 59, having a notch, 60, in its under side engageable with a U-shaped loop, 61, secured to the rack beam, 27. The spindle, 56, carries a rearwardly-disposed cylinder, 62, in the end of which reciprocates a plunger rod, 63, held yieldably-extended by a compression spring, 64, within the cylinder. The plunger normally engages the inclined face of a block, 65, on the loop, 61, by virtue of which the yieldable plunger tends to force the dog 59, downwardly and hold it normally in firm engagement with the loop. The dog is released from the loop by means of a shaft, 66, journaled in a bearing, 67, mounted on one of the posts, 57, the said shaft being extended through the wall of the cab, 14, and provided at its end with a lever, 68, operating in a guard, 69, mounted on the wall of the cab. The shaft carries a cam, 70, positioned below the dog, 59, which serves to lift the dog from engagement with the loop through the medium of the lever, 68. When the dog is thus lifted to the position shown in Fig. 9, the plunger, 63, extends rearwardly and rests upon the upper edge of the loop to hold the dog disengaged. After the cam has been retracted to the position shown in dotted lines, in Fig. 9, the pinion, 39, is then actuated by operation of the crank, 33, to move the truck body rearwardly. When the loop, 61, is carried rearwardly from the plunger, the dog and plunger drop to the position shown in Fig. 10; in which position they are supported by the cam, 70. The body having been rolled onto the loading platform the lever, 50 is operated to disengage the pinion 39, from the

rack. The truck may then be backed to another point of the dock and another body rolled onto the truck. As the body moves forwardly on the truck the block, 65, engages and forces the plunger forwardly and the loop engages the tapered nose, 71, of the dog, whereby the dog is raised and snapped into engagement with the loop.

On the shaft, 29, may be mounted a ratchet-wheel, 72, engageable by a pawl, 73, should it be desired, to stop rearward movement of the body during the loading or unloading process.

It is evident that the shaft, 29, may be motor-driven, but it is preferably manually actuated, for if when power driven the moving body encounters some obstruction, a costly accident would likely result. Furthermore, the application of very little power on the crank, will mount or demount a heavily-loaded body very rapidly.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is,—

1. In a freight-truck, a truck-frame, a wheeled body movably mounted thereon, a rack mounted below the body, a pinion yieldably supported on the truck-frame and engageable with the rack, a second pinion intermeshed with said first pinion, means for driving said pinion and means for raising and lowering said first pinion to engage and disengage it with and from the rack.

2. In a freight-truck, a truck-frame, a wheeled body movably mounted thereon, a rack mounted below the body, a yoke pivoted at one end on the truck frame to swing vertically, a pinion carried by the yoke to drive the rack, a second pinion mounted coaxially with the yoke pivot and intermeshed with said first pinion, means yieldably supporting the free end of the yoke, means for raising and lowering the free end of the yoke to engage and disengage said first pinion with and from the rack, and means for driving said second pinion.

3. In a freight-truck, a truck-frame, a wheeled body movably mounted thereon, a rack mounted below the body, a horizontal drive-shaft journaled on the truck-frame, a yoke having one end pivoted on the shaft, a drive pinion on the shaft a second pinion carried by the yoke, engageable with the rack and intermeshed with said first pinion, arms depending from the yoke, a yieldable link between the arms and the truck frame, and means for adjusting the yoke vertically.

4. In a freight-truck, a truck frame and wheeled body movably supported thereon, and mechanism for normally locking the body on the truck-frame, including a lock member on the body, a second lock-member on the truck-frame, the lock members being automatically releasably engaged, each with the other, by movement of the body toward

said second member, means for disengaging said members and means controlled by said first member for holding the members disengaged while the body moves from said second member.

5. In a freight-truck, a truck-frame, a wheeled body movably supported thereon, and mechanism for normally locking the body on the truck-frame including a lock-member carried by the body a second lock-member on the truck-frame, normally in a position to automatically engage said first member when the body is moved toward it, and retractably movable to another position to be disengaged from said first member, means for moving said second member to said second position, releasable means for holding the second member in said second position, and means controlled by movement of the body for releasing the latter means.

6. In a freight-truck, a truck-frame, a wheeled body movably supported thereon, and means for normally locking the body on the truck-frame including a lock-member carried by the body, a lock-dog pivoted on the truck-frame normally in a position to be automatically engaged by the lock-member when the body is moved toward the dog, and retractably movable to another position to disengage it from said lock member, means for moving the dog to said second position, means for releasably holding the dog in said second position, and means controlled by movement of the body for releasing the latter means.

7. In a freight-truck, a truck-frame, a wheeled body movably supported thereon, a lock-member carried by the body, a lock-dog pivoted on the truck-frame and normally positioned and adapted to automatically engage the lock member when the body moves toward the dog, yieldable means normally holding the dog in engagement with the lock-member, means for disengaging the dog, means for releasably holding the dog disengaged, and means controlled by movement of the body from the dog for releasing the latter means.

8. In a truck, a body frame, a truck frame having a surface on which the former frame is movably supported, a rack on one frame, a pinion on the other frame vertically movable relative to said surface to engage and disengage it with and from the rack, and means for locking the pinion in engagement with the rack.

9. In a truck, a body frame, a truck frame having a surface on which the former frame is movably supported, a rack on one frame, a pinion on the other frame vertically movable relative to said surface to engage and disengage it with and from the rack, and means for locking the pinion in or out of engagement with the rack.

10. In a truck, a body frame, a truck
frame having a surface on which the former
frame is movably supported, a rack on the
body frame, a pinion on the truck frame
5 vertically adjustable relative to said surface
to engage and disengage it with and from
the rack, and means for locking the pinion
in any desired position.

11. In a truck, a body frame, a truck
10 frame having a surface on which the former
frame is movably supported, a rack on one
frame, a pinion on the other frame verti-
cally movable relative to said surface to
engage and disengage it with and from the
15 rack, and means for adjusting and locking
the pinion in any desired position.

12. In a truck, a truck frame, a body
frame movably mounted thereon, a rack on
the body frame, means for driving the rack
20 including a vertically oscillating arm on the
truck frame, a pinion journaled thereon and
engaged and disengaged with and from the
rack by oscillation of the arm, and means
for oscillating and locking the arm against
25 movement, including a shaft journaled on

the truck frame, a crank-arm thereon, a
toggle-link between the crank-arm and the
oscillating arm, and means for rocking and
locking said shaft.

13. The combination with a loading dock, 30
of a truck including a wheeled truck frame,
having rails mounted thereon and extended
rearwardly a distance from the frame, a
wheeled body mounted on the rails, a bar
on the face of the dock a distance below 35
the surface of its floor, and brackets on the
frame supporting the rails at the rear of
the frame, the undersides of the brackets
being inclined to engage said bar and ele-
vate the rear of the frame as the latter is 40
backed toward the dock, the brackets also
being provided with substantially horizon-
tal parts to rest on the bar when the frame
is raised, said horizontal parts being so re-
lated to the rails that the latter will be 45
substantially flush with the dock floor when
said parts rest on the bar.

In testimony whereof, I have hereunto
set my hand this 6th day of August, 1917.

FRANK H. REYNOLDS.