

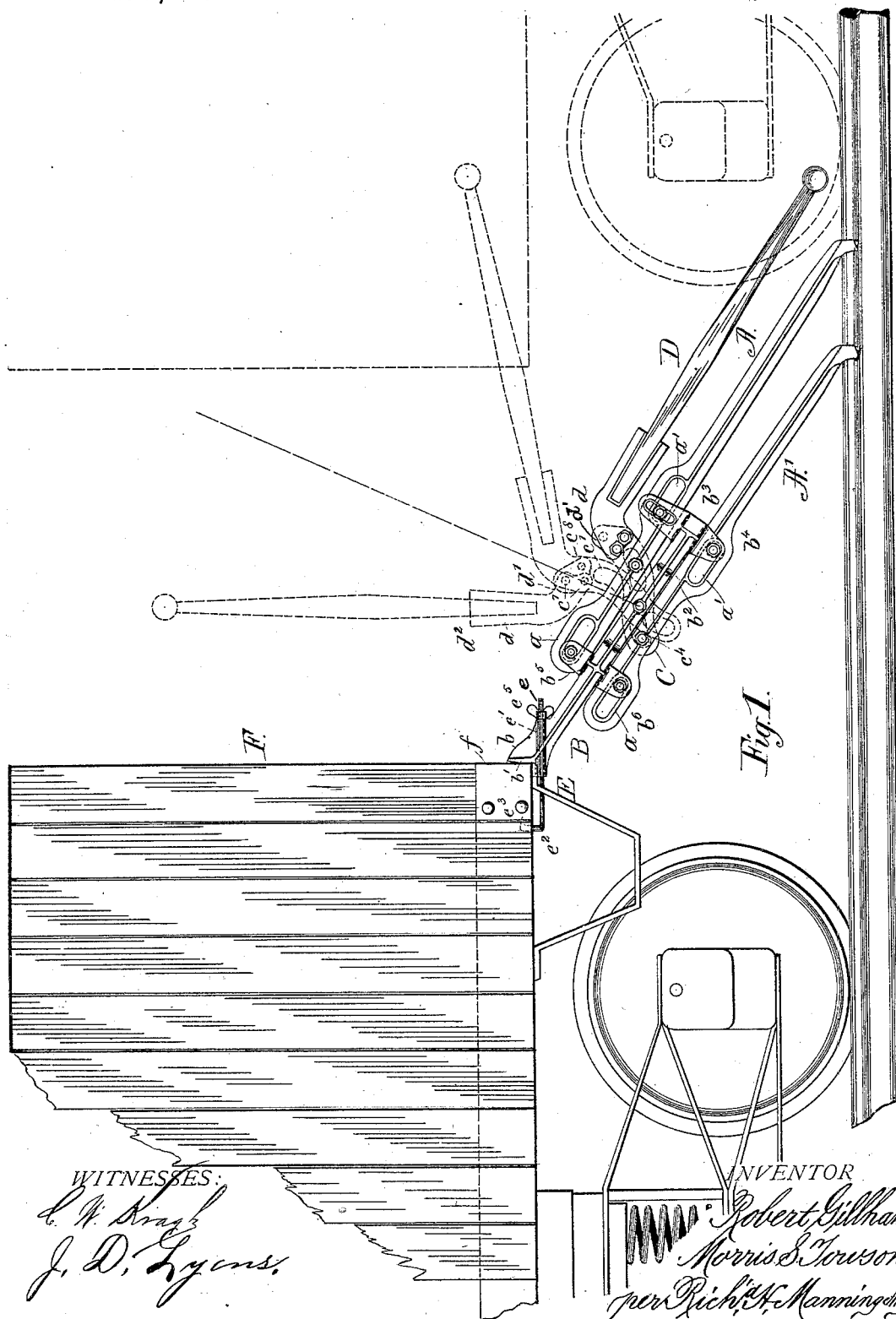
(No Model.)

2 Sheets—Sheet 1.

R. GILLHAM & M. S. TOWSON.
CAR MOVER.

No. 417,780.

Patented Dec. 24, 1889.



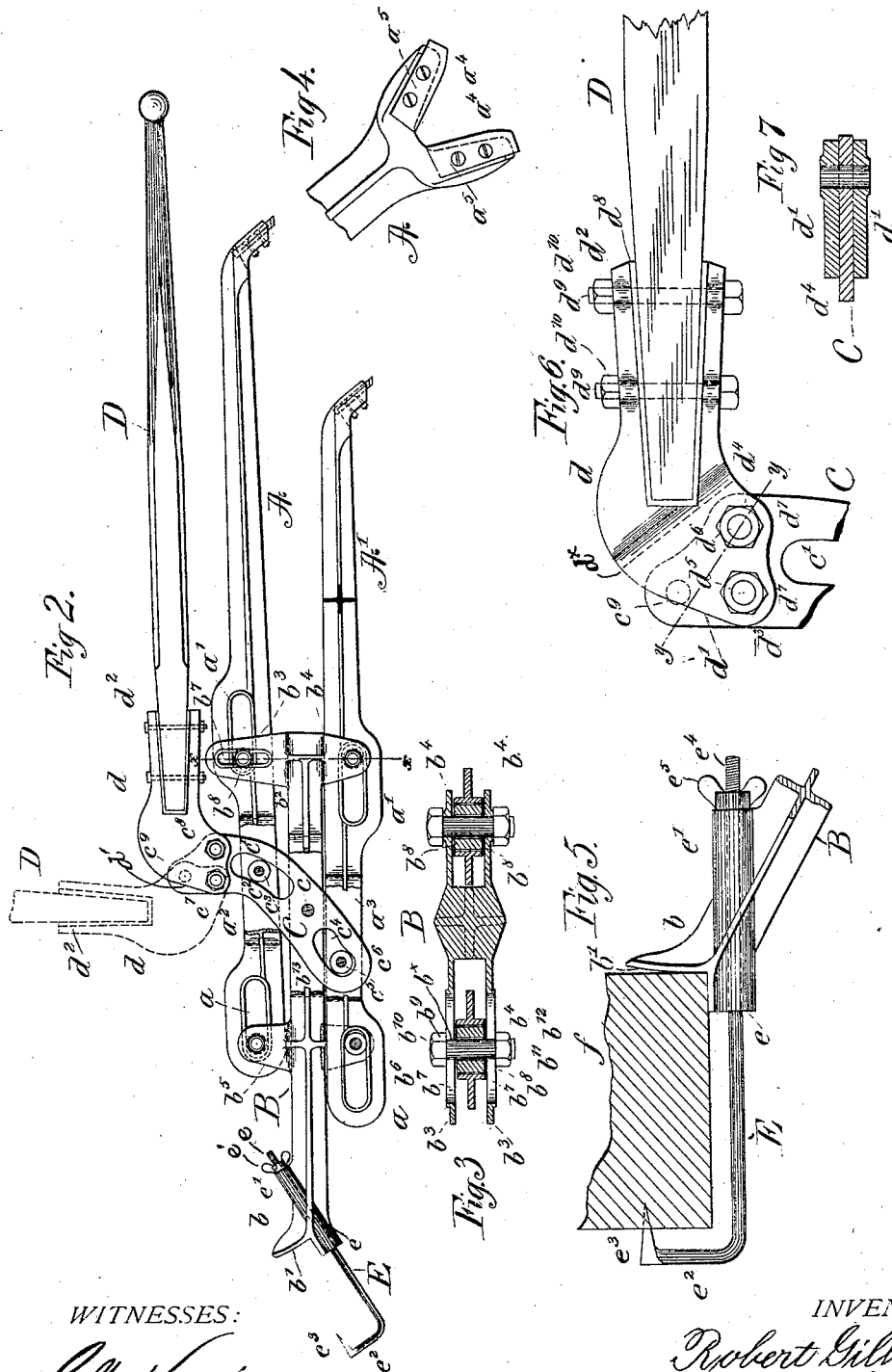
(No Model.)

2 Sheets—Sheet 2.

R. GILLHAM & M. S. TOWSON.
CAR MOVER.

No. 417,780.

Patented Dec. 24, 1889.



WITNESSES:

L. M. Knight
J. D. Lyons.

INVENTOR

Robert Gillham
Morris S. Towson
per Richard W. Manning atty.

UNITED STATES PATENT OFFICE.

ROBERT GILLHAM AND MORRIS S. TOWSON, OF KANSAS CITY, MISSOURI.

CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 417,780, dated December 24, 1889.

Application filed May 18, 1889. Serial No. 311,340. (No model.)

To all whom it may concern:

Be it known that we, ROBERT GILLHAM and MORRIS S. TOWSON, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Car-Movers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

Our invention has for its object, first, a car-mover in which the operating-legs obtain a purchase upon the track to connect adjustably the car-mover with the moving car; second, to provide uniform action of the walking-legs of the car-mover and relieve the transverse pressure on the under leg when moving heavy loads; third, to adjust the operating-lever connected with the operating-plate.

Our invention further consists in the novel construction and combination of parts, which will be first fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side view of the car-mover, shown removably secured to the rear end beam of a car, and also grasping the track, and the various positions of the operating-lever between the ends of adjacent cars. Fig. 2 is a side view of the car-mover with a side portion of the bar and legs covering the longitudinal slots therein broken away to show the slotted operating-plate. Fig. 3 is a transverse sectional view taken upon the line *xx* of Fig. 2. Fig. 4 is a detail end view of the forked rail-gripping devices on the legs. Fig. 5 is a detail end view of the bar engaging with the car, showing a portion of the end beam of the car in section and the adjustable gripping-rod. Fig. 6 is a view of a portion of the slotted motor-plate and adjustable lever-plate connected with said lever. Fig. 7 is a transverse sectional view taken on the line *yy* of Fig. 6.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A A' represent the legs of the car-mover, which consist of longitudinal bars, one of which A' is com-

paratively shorter in length than the bar A. Extending through the sides and upper end portions of the legs A A' are the longitudinal slots *a a*. Through the side portions and at a point nearly equidistant from the respective upper and lower ends of the legs A A' are made the longitudinal slots *a' a'*. Between the legs A A' is arranged a bar B, shorter in length than the said legs. One end *b* of the bar B extends beyond the upper ends of the legs A A', and a V-shaped notch *b'* is cut therein. To the opposite end *b²* of the bar B and extending laterally from opposite sides are the forked guides *b³ b³ b⁴ b⁴*. In line with the guides *b³ b³ b⁴ b⁴* and extending from the opposite sides of the bar B at a point corresponding in distance from the end portion *b* toward the end portion *b'* to that described between the slots *a a'* in the legs A A' are the guides *b⁵ b⁵ b⁶ b⁶*, which are similar to the guides *b³ b⁴*. Extending through the guides *b³ b³* at right angles to the bar B are made the registering-slots *b⁷ b⁷*. The legs A A' are then placed in a parallel relation on opposite sides of the bar B between the respective forked guides *b³ b⁴ b⁵ b⁶*, and in each one of the slots *a a' a' a'* of said legs are placed the rollers *b⁸*, which are fitted to rotate between said guides. Through each of the rollers *b⁸* are made the central transverse perforation *b^x*, and through each slot in the legs A A', guides *b³ b⁴ b⁵ b⁶*, and the rollers *b⁸* is extended the bolt *b⁹*, upon one end of which is the fixed head *b¹⁰*, and the other end screw-threaded at *b¹¹*, and provided each with the nut *h¹²*.

For the purpose of operating the legs A A', through each one of the said legs between the slots *a a'* in the line of direction of the guides *b³ b⁴* are made the longitudinal slots *a² a²*. Through the bar B, registering with the slots *a² a²*, is made the longitudinal slot *b¹³*. A flat plate C is extended through the slots *a² a²* in the legs A A' and also slot *b¹³* in the bar B, and pivotally attached to said bar by means of the pivot *c*. In the end of plate C, in the slot *a²*, is made a curved or cam slot *c'*, and in said slot *c'* is an anti-friction roller or device *c²*, which roller is secured by pivot *c³* to side of the bar A in the slot *a²*. In the opposite end of the plate C, in the slot *a²* of the bar A', is made a curved or cam slot *c⁴*, the

direction of the curve of which is reverse to that of the slot c' . In the slot c^4 is an anti-friction roller or device c^5 , which is secured by the pivot c^6 to the side of bar A in slot a^3 . Through the side and end portion of the plate C, which is extended a short distance from the leg A, near the slot c' , is made the perforations $c^7 c^8$, which are a slight distance apart and nearly in the line of direction of leg A. A suitable distance from the perforation c^7 in the direction of the operating ends of said plate C is made a perforation c^9 , which is placed in position above a line drawn longitudinally through the plate C and its pivot c^5 .

To the side of the plate C is attached the adjustable end plate d of the operating-lever D, one end portion d' of plate d being forked at d^x and bent nearly at right angles to its opposite end d^2 , and is perforated at $d^3 d^4$ in a transverse relation, the perforations being placed at distances apart corresponding to that of the perforations $c^7 c^8$ in the plate C. Through the perforations $c^7 c^8$ in plate C and $d^3 d^4$ in plate d is inserted the adjusting-bolts $d^5 d^6$, which are screw-threaded at one end, provided with the nuts d^7 . The end portion d^2 of the plate d is bifurcated at d^8 , and in said end portion is inserted the lower end portion of the operating-lever D, which is secured to the plate d by the transverse bolts d^9 , which are screw-threaded at one end and provided with the nuts d^{10} .

At an acute angle to and through the end portion b of the bar B directly beneath the V-shaped notch is made a perforation e , in the line of which is cast or formed a cylindrical extension e' , through which the perforation e is extended, and which cylinder extends from the side of bar B, which is in the direction of the operating-lever. Through the perforation e in bar B and cylinder e' is extended a rod E, one end e^2 of which is bent upwardly at right angles, and a portion e^3 bent therefrom in the line of the rod E and reduced to a sharp point. The opposite end e^4 of rod E is screw-threaded, and a nut e^5 fitted thereto which bears on the end of the cylinder e' .

For the purpose of engaging the tracks of a railroad, the lower end portions of the legs A A' are bent downwardly at an angle a short distance and forked at $a^4 a^4$. These forked ends $a^4 a^4$ are shod with steel plates $a^5 a^5$, which rest astride and engage with the track-rails.

In the operation of our improved car-mover the notched or V-shaped end of the bar B is shown, as in Fig. 1, firmly against the outer side portion of the end beam f of the car F, which it is desired to move, and the forked ends of the legs A A' are placed, one after the other, on a single-track rail, the apparatus thus describing an angle of about forty-five degrees. The lever D is then vibrated, which movement conveys a reciprocal or walking movement to the legs A A' and in the leverage of the operating-plate C, the legs A are re-

lieved from sudden shock by the cam-slot c^4 , which permits a gradual increase of power, and the upward movement of bar B is communicated to the car F, and the friction which would otherwise retard the movement of said bar is prevented by the rollers b^8 in the slots $a a'$ of the leg A. As the power exerted in the movement of the bar B is most effectual at the described angle in which the legs are enabled to engage reciprocally with the track-rails, the end portion b of bar B is placed against the most convenient portion of the car-beam sufficiently to permit the rod E to extend its forked portion e^3 in engagement with an opposite side, in which position the nut e^5 is turned so as to puncture the said beam with the sharp end e^3 and retain the apparatus adjustably in connection with the moving car. In this position the legs follow the movement of the car without falling. To obtain the purchase and operate the lever D between adjacent cars, the nut d^7 and bolt d^6 are removed from the plate d , and the upper end of lever D moved in an upward direction and the plate d moved on the bolt d^5 , so that the perforation d^4 in the plate will register with the perforation c^9 . In this position the bolt d^6 is introduced through said perforations in plates C d , and the legs A A', operated in the limited space afforded between the cars and the anti-friction bearing of said legs in the guides $a a$, enable a uniform movement of the legs to be maintained in moving loaded cars of great weight.

Having fully described our invention, what we now claim as new, and desire to secure by Letters Patent, is—

1. In a car-mover having working-legs and an intermediate bar provided with suitable registering slots and anti-friction devices connected with said legs in said slots and leg-retaining guides on said bar, the combination, with said legs and bar, of a motor-lever pivotally attached to said bar and extending through the slots in said legs, one end of said motor-lever having a cam-slot engaging with the anti-friction devices in one leg and the opposite end having a cam-slot in a reverse position engaging with an anti-friction device in an opposite leg, for the purpose described.

2. In a car-mover having working-legs and an intermediate bar and suitable anti-friction devices on said legs and leg-retaining guides on said bar, the combination, with said legs and bar, of a motor-lever pivotally attached to said bar, having cam-slots in reverse position engaging with the anti-friction devices on said legs, and an adjustably-pivoted extension of said lever, for the purpose described.

3. In a car-mover having working-legs and an intermediate bar and suitable anti-friction devices on said legs and leg-retaining guides on said bar, the combination, with said legs and bar, of a motor-plate pivotally attached to said bar and having cam-slots in a reverse position engaging with the anti-

friction devices on said legs, and an operating-lever adjustably connected with the end of said plate, for the purpose described.

4. In a car-mover having working-legs provided with anti-friction devices and an intermediate bar, the combination, with said bar, of a motor-lever pivotally attached thereto and having cam-slots in a reverse position engaging with said anti-friction devices on said legs, and leg-retaining guides on said bar provided with anti-friction rollers, for the purpose described.

5. In a car-mover having working-legs and an intermediate bar and suitable anti-friction devices on said legs and leg-retaining guides on said bar, the combination, with said

legs and bar, of a motor-lever pivotally attached to said bar and having cam-slots in reverse position engaging with the anti-friction devices on the respective legs, and an adjustable rod extending through said bar having an engaging end portion, for the purpose described.

ROBERT GILLHAM.

MORRIS S. TOWSON.

Witnesses to signature of Robert Gillham:

M. C. GILLHAM,

J. D. LYONS.

Witnesses to signature of Morris S. Towson:

G. GORIN,

GEORGE N. BYRNS.