

No. 704,870.

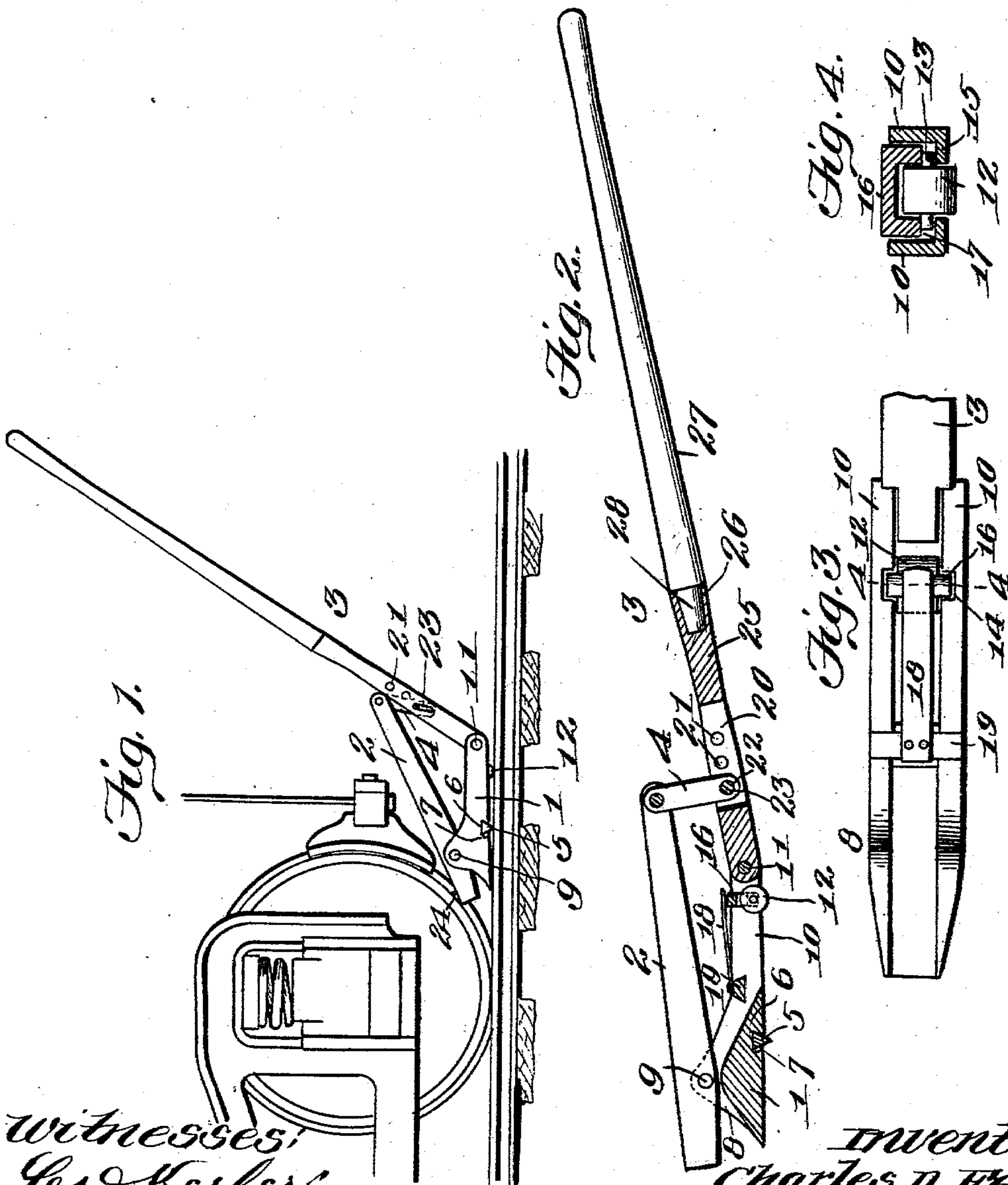
Patented July 15, 1902.

C. D. FOX.

CAR MOVER.

(Application filed Feb. 24, 1902.)

(No Model.)



Witnesses:
C. D. Kessler,
Harry E. E. E.

Inventor
Charles D. Fox
By James L. Norris
Atty

UNITED STATES PATENT OFFICE.

CHARLES D. FOX, OF APPLETON, WISCONSIN.

CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 704,870, dated July 15, 1902.

Application filed February 24, 1902. Serial No. 95,294. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. FOX, a citizen of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented new and useful Improvements in Car-Movers, of which the following is a specification.

My invention relates to car-movers, the object of the same being to simplify and otherwise improve the construction of this class of devices, whereby a greater force may be exerted upon the car with the same exertion than can be obtained with other devices of a similar nature.

A further object of the invention is to provide means for adjusting the point of connection between the operating-lever and the pinch-bar, to increase and decrease the power of the device, and to regulate the elevation of the free end of the operating-lever to the height of the operator.

A further object of the invention is to provide a spring-supported roller on the under side of the device to facilitate and render more easy the movement of the same from point to point along the rail.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of my improved car-mover, showing the same in use. Fig. 2 is a sectional elevation of the same in a different position. Fig. 3 is a top plan view with the pinch-bar removed and the operating-lever partly broken away, and Fig. 4 is a cross-section on the line 4-4 of Fig. 3.

Like reference-numerals indicate like parts in the different views.

My improved car-mover is made up of a shoe or base-piece 1, a pinch-bar 2, fulcrumed at a point adjacent to its forward end to said shoe, an operating-lever 3, fulcrumed at its lower end to said shoe, and a link 4, pivotally connecting the rear end of the pinch-bar 2 with said operating-lever. The shoe 1 is provided on its under side with a transversely-extending spur or projection 5, designed for the purpose of preventing the slipping of the shoe upon the rail when the device is in operation. This spur or projection is seated in

a groove 6 in the lower surface of the shoe 1 and may be secured in place in any suitable manner. I prefer, however, to retain the same in position by means of a wedge or key 7, which extends parallel to said spur and bears against one of the walls of the groove 6, as shown. The upper side of the shoe 1 is provided near the forward end thereof with the upwardly-extending parallel supports 8, between which the pinch-bar 2 is located and to which said pinch-bar is pivoted. The pivot pin or bolt 9 has been shown as extending through openings in the supports 8 and through a corresponding opening in said pinch-bar. The rear end of the shoe 1 is bifurcated to form the parallel arms 10, to and between which the lower end of the operating-lever 3 is fulcrumed by means of the pin or bolt 11. Located between the arms 10 and normally projecting down below the lower face of the shoe 1 is a spring-supported roller 12, the said roller being provided for the purpose of facilitating the movement of the device from point to point and to protect the spur or projection 5 from abrasion and wear during such movement. The said roller, however, is capable of upward movement to a level with or to a point above the surface of the shoe 1, so that when the device is in operative position the strain to which the same is subjected may be received by the lower edge of said shoe and not by said roller 12. Any suitable means may be provided for mounting the roller 12; but I have shown the same as being mounted upon and secured to a shaft 13, which fits within notches or grooves 14, extending vertically along the inner surfaces of the arms 10 of said shoe and terminating a short distance from the lower edges of said arms. The shaft 13 is adapted to bear against the shoulders 15, formed at the lower ends of the notches or grooves 14, for the purpose of limiting the downward movement of said roller. Fitting loosely and adapted to move freely in the notches or grooves 14 is a bearing-block 16 of inverted-U shape, the two side arms of said block having notches 17 in their lower ends, which receive the ends of the shaft 13 on the roller 12. The bearing-block 16 and consequently the roller 12 are held in their lowermost po-

sitions by means of a spring 18, which bears against the upper surface of the block 16. Said spring may be of any suitable form and may be applied to the block 16 in any suitable manner; but I have shown the same in the form of a leaf-spring, one end of which is secured to a transverse bar 19, connecting the arms 10, and the other or free end of which bears against the upper edge of the block 16.

By this construction it will be observed that the roller 12 serves to support the device and to provide an antifriction-bearing therefor upon which the same may be moved from point to point with the least possible exertion. The said roller also serves to enable the spur or projection 5 to be held off the ground or the rail on which the device is adapted to move, so as to protect the same from abrasion and wear. When the device is in operation, however, the roller 12 will yield bodily upwardly, so as to enable the lower edges of the arms 10 to rest upon the rail, and thereby assist in sustaining the load or strain to which the device is subjected.

The operating-lever 3 has an elongated slot 20 therein for the reception of the link 4 and is also provided with a series of openings 21, which intersect or traverse the slot 20, extending at right angles thereto. The link 4 is pivoted at one end to the rear end of the pinch-bar 2, and has at its other end an opening 22, designed to receive a removable pin or bolt 23, which extends through one or the other sets of openings 21 in the operating-lever 3. By this construction it will be observed that the point of connection of the link 4 with the operating-lever 3 may be varied—that is to say, if it be desired to increase or decrease the power to be exerted by the device the link 3 will have that end thereof which contains the opening 22 moved upwardly or downwardly in the slot 20, so that said opening 22 will be caused to register with another set of the openings 21. The removable pin 23 will then be applied, the same extending through the openings 21 in the operating-lever 3, which register with the opening 22 in the link 4 and also through said opening 22. When adjusted in one direction for the purpose of increasing the power of the device, it will be obvious that the speed of motion which the device is capable of giving the car will be decreased. On the other hand, when the link 4 is adjusted so as to decrease the power of the device, the speed of motion which the device is capable of giving to a car will be increased. The adjustments above described will also enable the position of the free end of the operating-lever to be controlled in accordance with the height of the operator.

The inner or forward end of the pinch-bar 2 projects slightly beyond the inner or forward end of the shoe 1, and the nose portion of said pinch-bar is preferably reinforced by the hardened-steel wearing-plate 24. This

plate may be of any suitable construction, and, in fact, may be produced by the insertion of a hardened-steel rivet into the nose of the pinch-bar.

The operating-lever 3 of my improved device is preferably made in two sections. The section 25, or that in which the slot 20 and the openings 21 are formed, is constructed of metal and has a socket 26 in its extreme outer end. The walls of the socket 26 are integral with the body portion of the section 25, as shown. The other section 27 of the operating-lever 3, which in reality constitutes the handle of the operating-lever, is preferably constructed of wood and has a tenon or tongue 28, which fits within the socket 26 of the section 25.

It will be noted that the pinch-bar 2 is considerably longer than the shoe 1 and that the rear end of said pinch-bar projects to an appreciable extent beyond the rear end of said shoe. It will also be observed that the link 4, connecting the pinch-bar 2 with the operating-lever 3, is comparatively short and as a result of this construction and proportionment of these parts that the angle between the pinch-bar 2 and the base of the shoe 1 is an acute one. This is an important feature of my invention, as it enables the device to be used on the wheels of cars which are provided with brakes without interfering in the slightest with said brakes. As is well known, the brakes of cars are ordinarily applied at a point in a substantially horizontal line with the car-axle. When so applied, it is necessary that the car-moving device be constructed so as not to interfere with these brakes, as by so doing damage would be done to the brakes, and the efficiency of the car-moving device would be very materially decreased, if said car-moving device is not rendered totally incapable of use. I avoid the objection which has been found to many of the old forms of car-moving devices by the arrangement and proportionment of parts as above set forth.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A car-mover, comprising a base or shoe, a pinch-bar fulcrumed thereto, an operating-lever also fulcrumed thereto, a link pivotally connecting said pinch-bar with said operating-lever, and means for changing the point of pivotal connection of said link with said lever.

2. A car-mover, comprising a base or shoe, a pinch-bar fulcrumed thereto, an operating-lever also fulcrumed thereto having an elongated slot therein and a plurality of openings extending transversely of and intersecting said slot, a link pivoted to said pinch-bar fitting within said slot, and a removable pivot pin or bolt extending through one or the other of said openings, and through said link.

3. In a car-mover, a base or shoe having a plurality of separated arms, and a yieldingly-

supported roller mounted in and movable between said arms and normally projecting below the lower surface of said shoe.

4. In a car-mover, a base or shoe having a plurality of separated arms, a roller bodily movable in and between said arms and normally projecting below the lower surface of said shoe, and a spring for resisting the upward movement of said roller.
5. In a car-mover, a base or shoe having a plurality of separated arms, a spur or projection on the under side thereof, and a yieldingly-supported roller mounted in and between said arms and normally projecting below the lower surface of said shoe.
6. In a car-mover, a base or shoe having a plurality of separated arms, a spur or projection on the under side thereof, a roller bodily movable in and between said arms and normally projecting below the lower surface of said shoe, and a spring for resisting the upward movement of said roller.
7. In a car-mover, a base or shoe having two parallel arms, a roller vertically movable between said arms and normally projecting below the lower surface of said shoe, and a spring secured to said shoe and acting upon said roller for resisting the upward movement thereof.
8. In a car-mover, a base or shoe having two parallel arms, a roller vertically movable

between said arms and normally projecting below the lower surface of said shoe, a cross-bar connecting said arms, and a spring secured to said cross-bar and acting upon said roller for resisting the upward movement thereof.

9. In a car-mover, a base or shoe having two parallel arms provided with grooves along their inner surfaces, a roller normally projecting below the lower surface of said shoe and having its shaft or axis fitting within said grooves, and a spring acting upon said roller for resisting its upward movement.

10. In a car-mover, a base or shoe bifurcated or slotted to form two parallel, vertically-disposed arms, having grooves in the inner surfaces thereof terminating at their lower ends in shoulders, a roller normally projecting below the lower surface of said shoe and having its shaft or axis fitting within said grooves and adapted to engage said shoulders, a bearing-block for said roller movable in said grooves, and a spring acting upon the upper end of said bearing-block.

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

CHARLES D. FOX.

Witnesses:

J. H. COOK,
G. BERNIER.