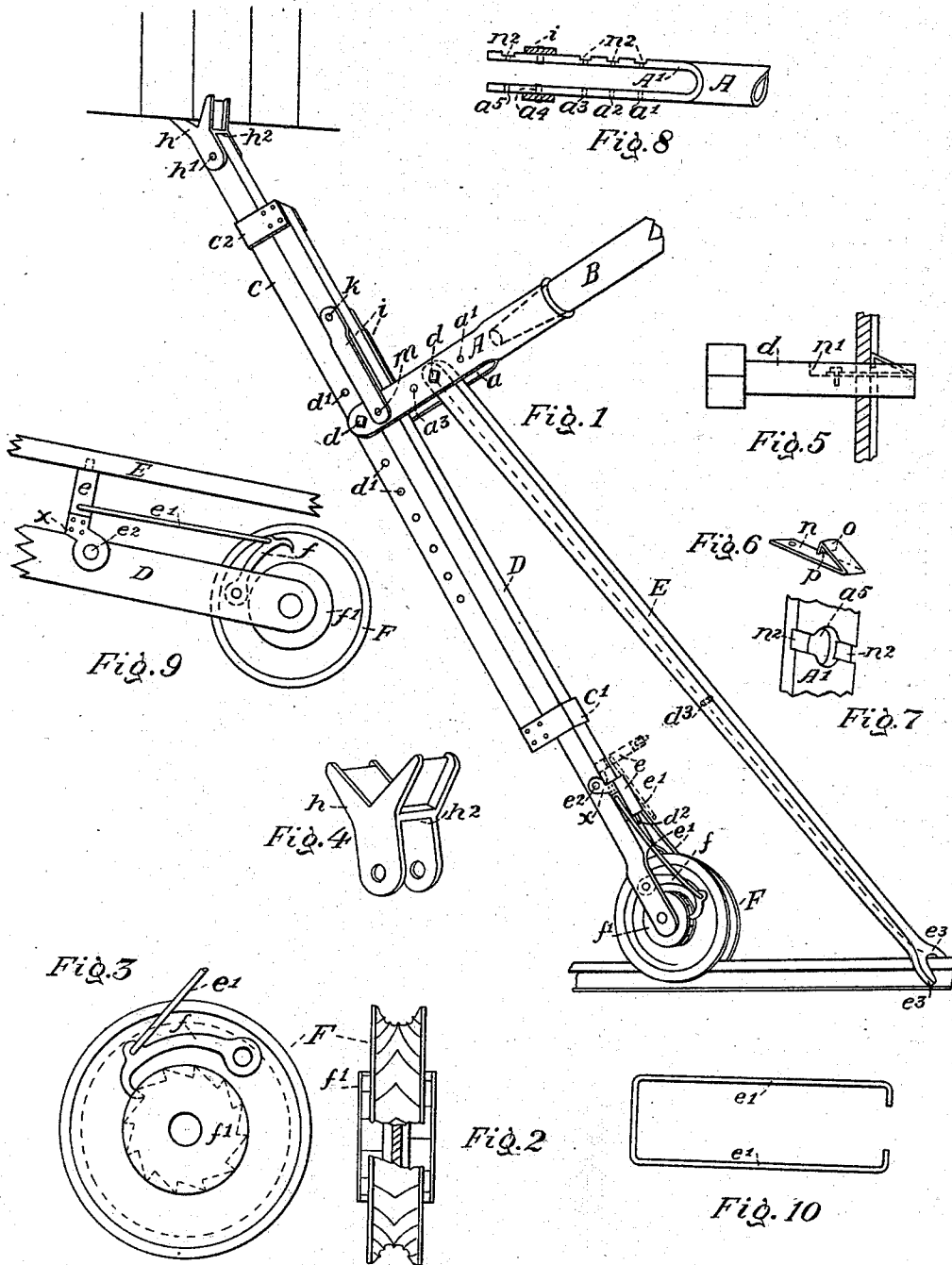


(No Model.)

H. A. BAXTER.
CAR MOVER.

No. 562,450.

Patented June 23, 1896.



Witnesses

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UNITED STATES PATENT OFFICE.

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CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 562,450, dated June 23, 1896.

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To all whom it may concern:

Be it known that I, HENRY A. BAXTER, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Car-Shunter, of which the following is a specification.

My invention relates to improvements in car-shunters, in which a lever, fulcrumed to and supported by a leg resting upon the rail, operates on said fulcrum in moving cars, said lever being provided with a second leg which coacts with the first in following the car, and also with a push-bar which operates against the edge of the car; and the objects of my invention are, first, to provide for the adjustment of the fulcrum whereby more or less purchase and a greater or less speed may be obtained; second, to render the push bar or arm adjustable to any height of car; third, to provide a bearing-block for the end of the push-bar; fourth, to provide a bearing-wheel which will allow the shunter to follow the moving car without the operation of the lever, and, fifth, to provide means whereby the bearing-wheel operates in conjunction with the fulcrum-leg in moving a car, and also acts as a carrier-wheel in transferring the shunter from place to place. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my car-shunter; Figs. 2 and 3, a front and side view, respectively, of the bearing-wheel; Fig. 4, a perspective view of the bearing-wheel; Fig. 5, a side view of the adjusting-bolt on large scale; Fig. 6, a perspective view of the spring used in the adjusting-bolt; Fig. 7, a broken portion of the operating-lever, showing one of the catch-slots for holding the bolt; Fig. 8, a plan view of the bifurcated end of the operating-lever; Fig. 9, a side elevation of a portion of the follower-leg, showing the carrier-block and its connection with the fulcrum-leg; and Fig. 10, a plan view of the pawl-rod.

Similar letters refer to similar parts throughout the several views.

The fulcrum-leg E, lever A, push-bar C, follower-leg D, and carrier-wheel F, which is journaled in the follower-leg D, constitute the

parts dependent upon each other in pushing or shunting a car. The operating-lever A is provided with a removable part B, and slot *a*, which receives the fulcrum-leg E, the push-arm C, and the follower-leg D, which is connected thereto by the links *i* and is provided at the lower end with a wheel F, pawls *f*, rod *e*, and block *e*. The bifurcations of the lever A, which are formed by the slot *a*, are provided with apertures *a*¹, *a*², *a*³, and *a*⁵, which terminate on one side of the lever in the slots *n*² and in connection therewith provide for the operations of the bolts *d*.

The fulcrum-leg E is attached to lever A in the slot *a* by the bolt *d* and is adjustable therein by means of the apertures *a*¹, *a*², and *a*³ and is adapted to engage the pin *d*² of block *e* by means of the aperture *d*³, fitting said pin when the block is raised, as indicated by dotted lines in Fig. 1. This engagement of the pin *d*² with the leg E supports the leg and raises the pawls from contact with the ratchet-hubs *f*¹ of wheel F, as indicated in Fig. 9, thus allowing the shunter to be wheeled about at will.

The lower end of the leg E is flattened and bifurcated, forming toes *e*³, which span the rail and guide the leg and have their forward edge sharpened, so as to nip the rail when the leg E is under pressure.

The push-arm C is mounted in the slot *a*, between the outer ends of the bifurcations of the lever A, and is adjustable therein by means of a removable bolt *d*, operating in apertures *d*¹ of said arm, and is provided with a pressure-block *h*, pivotally attached to the upper end, and a box-strap C', at the lower end, which fits about the leg D.

The leg D is provided with a box-strap C² at the upper end which fits about the leg C. These straps C' and C² hold the arm C and leg D together, and the bolt *d*, operating in apertures *d*¹ in arm C, and the links *i*, pivotally attached to the lever A and leg D, sustain the said arm and leg in their relative positions.

The lower end of the leg D is bifurcated and provided with a bearing-wheel F, journaled in said bifurcations, and pawls *f*, pivotally attached thereto and adapted to engage with ratchet-teeth provided in the hubs *f*¹ of said bearing-wheel. These pawls *f* are con-

connected with the block *e* by a rod *e'*, which passes through the block and provides for raising the pawls out of engagement with the ratchet-teeth of the wheel *F* when the block *e* is raised, as indicated in Fig. 9. This rod *e'* also acts as a spring to force the pawls *f* well down into the ratchet-teeth of the hubs *f'*, when the block *e* is down and the shunter is in operation.

The hubs *f'* of the follower-wheel *F* are set upon the wheel so that the points of the ratchet-teeth in one hub are centrally located with reference to the space between the points of the teeth in the opposite hub. This is clearly indicated through the broken portion in Fig. 2, and is to provide for the engagement of one of the pawls at all times when the shunter is operating.

As heretofore explained the pawls *f* are pivotally attached to the bifurcations of the leg *D* and may be raised by the rod *e'*, which passes through the block *e* and is attached to the pawls *f* by the ends thereof passing through the pawls. When the block *e* is down upon the leg *D*, the rod *e'*, which fits tightly in the block *e* and has bearing against its sides, operates as a spring in holding each pawl in contact with the hubs of the wheel *F*. This spring in addition to the weight of the pawl insures the contact of the pawl with the ratchet-teeth at all times. When desirable to raise the pawls, the block *e* is raised and the pawls strike the flanges of the wheel *F*. This holds them from raising farther up, and the block *e* can be forced upward until resting in the position indicated in Fig. 9.

The face of the bearing-wheel *F* is depressed to fit the top of an ordinary rail and is provided with V-shaped projections following the contour of the face, forming angular ridges beginning at the edge of the face and terminating at the center. This is clearly shown in Fig. 2. This wheel is journaled in the bifurcations of the leg *D* and is set so that the apex of the angle formed by the V-shaped ridges point rearwardly when in contact with the rail. Thus, when back pressure is upon the leg *D*, one of the pawls *f* engage one of the ratchet-hubs and the angular projections on the wheel nip the rail.

The pressure-block *h* operates upon the pivot *h'*. The bottom plate *h''* is provided to engage the end of the arm *C* to keep the block from tipping too far. This block is very useful, as, where the upper end of arm *C* is simply bifurcated, the machine is often strained and the bifurcations broken by reason of the different angles at which the arm operates with reference to the corner of the car, the angles thus taken causing the total pressure to come upon a single bifurcation, while with my pressure-block the arm *C* may take the necessary angle and the block yet remain in full contact with the corner of the car.

I make my machine adjustable for any height of car by means of the holes *d'* and bolt *d*. This bolt *d* I construct so as to lock and

unlock automatically in the several holes *d'*. This I accomplish by means of a flat spring *n*, bent V-shaped and secured in the slot *n'*. This spring is convex on its surface *o*, near the base *p*. As the bolt *d* enters the hole *d'*, the spring is compressed; but when the bolt is in and turned so as to bring the slot *n'* in line with slot *n''* of the fork *A'* the spring opens and retains the bolt, as shown in Fig. 5.

When desirable to withdraw the bolt, it is turned to the right or left and the projecting surface of fork *A'* about the hole *a''* forces the spring into the slot *n'* and the bolt may be withdrawn. This same form of bolt is employed and the same operation performed in adjusting the leg *E*.

In operating my machine I first place it against the car to be moved, in the position shown in Fig. 1. I then raise the handle *B*. This moves the leg *E*, sliding the toes *e''* along the rail, but does not move the car. When downward pressure is placed upon the extension *B*, the lever *A* operates on the fulcrum-bolt *d* and causes an upward and forward movement of the pressure-arm *C*, and also advances the leg *D* by means of the links *i*, operating on the pivots *k* and *m*, the wheel *F* revolving forward and the upper end of leg *E* also advancing with a circular movement from the toes *e''* as a center. After the lever has been pressed down it is raised with a forward pressure to keep the pressure-block *n* against the car and to roll the wheel *F* along the rail. When raising the lever, the fulcrum changes from the leg *E* to the pivots *m* of links *i*; and, as clearly seen, this movement shortens the distance between the bearing-wheel and the pressure-block and allows the wheel to advance, as explained. This raising of the lever also advances the toes *e''* of leg *E* along the rail ready to nip the rail anew when downward pressure is brought to bear upon the operating-lever.

If the car moves rapidly after being started, the shunter follows the car by reason of forward pressure on the extension *B*, but if desirable to increase the speed the lever *A* is operated accordingly.

Any back movement of the car is obviated by the pawls *f*, engaging the ratchet-hubs *f'*, and the angular projections of the wheel *F*, nipping the rail.

The fulcrum of leg *E* is adjustable in slot *a* of lever *A*. This allows a rapid movement of the car, when lightly loaded or empty, by placing the fulcrum-bolt in the rearward aperture *a'* of lever *A*, and when heavily loaded a slow but more powerful movement of the lever can be attained by placing the bolt in the forward aperture *a''*, though ordinarily the bolt is placed, as indicated, in the aperture *a''*.

When desirable to move the shunter about, I raise block *e*, drop leg *E* until the aperture *d''* engages pin *d''*, the pawls *f* being thus disengaged, and the shunter may then be wheeled about at will.

I am aware that prior to my invention car-

shunters have been manufactured which operate by means of a fulcrumed lever provided with legs adapted to engage with the rail. I am also aware that the workings of same have not been satisfactory owing to the arrangement of the fulcrum and pivots and that the end of the push-arm has been repeatedly broken and the shunter rendered useless thereby. The shunter has also in many instances fallen to the ground owing to a rapid movement of the car, the arrangement of the pivots and fulcrum and general construction of the shunter rendering it impracticable to operate the lever fast enough to keep the shunter in position.

I do not claim, broadly, a car-shunter operated by a fulcrumed lever and provided with a push-arm and leg-bars; but

What I do claim, and desire to secure by Letters Patent, is—

1. A car-shunter constituting a lever A provided with a removable part B fitting a taper-socket in said lever and slot a and apertures a' , a^2 , a^3 and a^5 and slots n^2 thereof, a leg E entering slot a of said lever and adjustably fulcrumed thereto by a bolt adapted to enter the apertures a' , a^2 or a^3 and lock and unlock in the slots n^2 , and having toes e^3 provided with a sharpened edge adapted to nip the rail and an aperture d^3 , a leg D in said slot a being attached to said lever by links i and pivots m and k and having a box-strap C^2 at the upper end thereof and having furcations at the lower end and a wheel F journaled therein and pawls f pivotally attached thereto adapted to engage with ratchet-teeth provided in the hub of said wheel and a block e attached thereto by pivot e^2 and adapted to stand at right angles to the leg D and disengage the pawls f by means of the rod e' passing through said block and to and through the pawls f , said block provided with a pin d^2 adapted to engage the aperture d^3 of leg E provided for the wheeling of the shunter about at will, and a push arm or bar C fitting in the strap C^2 of leg D and having a box-strap C' at the lower end fitting about the leg D and bearing-block h provided with a plate h^2 adapted to engage the end of said arm C when operating thereon by means of pivot h' , and apertures d' providing for the adjustment of the arm in slot a of lever A by a bolt adapted to lock and unlock in the slots n^2 of aperture a^5 of the lever A.

2. In car-shunters the combination of the bearing-wheel F having a grooved face pro-

vided with angular projections thereon, and hubs provided with depressed ratchet-teeth, said hubs set so that the teeth in one hub are out of line with those of the other; with the shunting device mounted thereon constituting a leg or bar D, the lower end bifurcated and having the bearing-wheel F journaled therein, and pawls f pivotally attached to said bifurcations and adapted to engage the ratchet-teeth in said hubs and withdraw from engagement therewith by a rod e' attached thereto and operating in a block e hinged to said leg D and adapted to stand at right angles therewith, an arm or bar C adapted to slip longitudinally with said leg D and having a pressure-block h pivotally attached at the upper end, apertures d' providing for the adjustment of said arm, a lever A having a slot a , removable extension B, aperture a^5 providing for the adjustment of the arm C by means of a bolt adapted to operate therein, links i pivotally attached thereto and to the leg D and adapted to sustain said leg in a relative position at all times, and apertures a' , a^2 , and a^3 providing for the adjustable attachment of a fulcrum-leg E by means of a bolt fitting therein, and a fulcrum-leg E containing an aperture d^3 and toes e^3 provided with sharpened edges adapted to nip the rail, said aperture d^3 adapted to engage the pin d^2 of block e and operate therewith in retaining the block at right angles with the leg D when wheeling the shunter about the yard.

3. In car-shunters the combination of a block e pivotally hinged to a leg D thereof and adapted to open therefrom on said hinges and to sustain the leg E and having a pin d^2 projecting from the end and a rod e' passing through but fitting snugly in said block and against the sides thereof and attached at the ends to pawls f which are pivotally attached to the furcations of leg D, and adapted to operate as springs in holding said pawls in contact with the ratchet-teeth of the wheel F which is journaled between said furcations; with the leg E pivotally attached in said shunter and having an aperture d^3 adapted to engage the pin d^2 of said block e and sustain said block in an upright position and thereby hold the pawls f by means of a rod e' from engagement with the ratchet-hubs of wheel F substantially as shown and set forth.

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