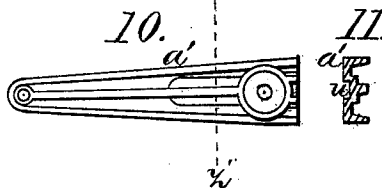
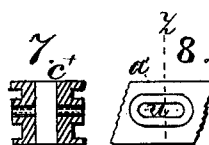
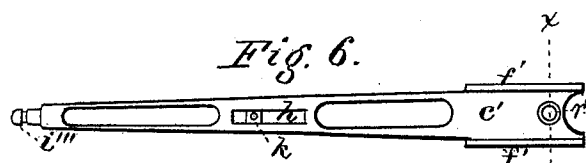
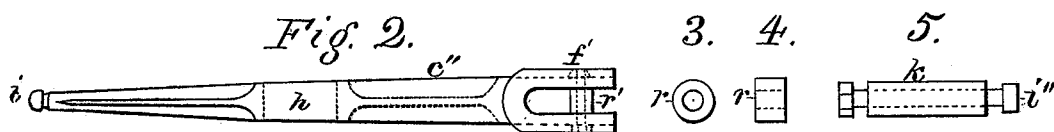


CAR-PUSHER.

Patented March 28, 1876.



Attest.
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IMPROVEMENT IN CAR-PUSHERS.

Specification forming part of Letters Patent No. **175,309**, dated March 28, 1876; application filed January 11, 1876.

To all whom it may concern:

Be it known that I, CHRISTIAN ANDERSON ROSMUS LAURELI VERGENIUS, of the city of Springfield, county of Clarke and State of Ohio, have invented certain Improvements in Car-Pushers, of which the following is a specification:

My invention relates to a car-pusher constructed with a double eccentric pivoted centrally in the middle of the jack or pusher and having a double thrust or throw in opposite directions, when operated by the lever-handle attached thereto.

The end pieces of the body of the jack or pusher are slotted and flanged so as to move on the main side pieces in line therewith when operated. The ends of the car-pusher are of peculiar and novel construction. They are both swiveled in their connections, and the upper or clamp end is further provided with a universal joint, made so that it can be easily detached when required. At this end is a pair of jaws, made to close the angle formed by the end of the car. They are armed with teeth which bite into the wood, (at the lower corner,) fastening the clamp firmly enough to the car to prevent its being detached while operating the pusher. The clamping-jaws, when attached, are locked by a small eccentric lever. The lower end of my car-pusher has a forked foot which straddles the rail. It is formed of two fluted steel cones. These have their stem ends or journals inserted in a cast fork-piece, which is bored out to receive them. Their journals are grooved, and approach near enough together to allow a bolt to pass between them through the groove, so as to secure them in the fork-piece, and yet allow them to turn around on their axes. A lock-latch prevents them from turning inward, but allows their being turned in opposite directions. The object of this construction is to allow of the easy lifting of the foot of the pusher when operating, and enable it, by means of the rolling fluted cone-points, to present a new and sharp biting-edge on the rollers at each movement against the rail.

To provide for the operation of the jack at the crossings, the points of the cones are made

of square or pyramidal shape, to cause them to enter the wooden plank when the body of the cones cannot touch the surface of the rail. The rotating cones are not liable to have their angles ground off or broken, as in a rigid foot.

The ends of the frame being swiveled in the head and foot piece allow it to be rotated after the jack is set, so that the operating-lever can be used either between or outside of the cars.

In operating my car-pusher or push-jack it is set at an angle of about thirty-six degrees, more or less, its length adapting it to the various heights of cars.

Figure 1 shows a rear section of a car with my car-pusher applied thereto for operation. Fig. 2 shows the upper half-section C'' from the top. Fig. 3 is an end view of one of the rollers r' . Fig. 4 is a side view of the same. Fig. 5 is a side view of one of the square blocks or boxes K , fastened between the ends of the side plates a' , (through slots h), with its bolt i'' . Fig. 6 is a side view of the lower sliding half-section c' . Fig. 7 is a cross-section of the same through the dotted line $x y$. Fig. 8 is a section of one of the side plates a' , showing the inside of the same. Fig. 9 is a top view of the operating or hand lever and eccentric. Fig. 10 is a section of one of the side plates, including its central part. Fig. 11 is a cross-section of the same and section Fig. 8 through the line $z z$.

A is the car-pusher or push-jack; B , the rail of a railroad track. C is a section of a railroad-car, showing the lower rear corner of the same.

From the foot or fork piece a to the head-piece d extends the iron frame-pieces which form the body of the jack or pusher. They consist of four pieces—two side pieces, a' , which are united by bolts extending through the ends, and a central bolt on which is pivoted the double eccentric a'' . Between these side pieces a' , and extending from the middle each way to the head d and foot a , so as to complete the body of the jack, are seen the pieces c' and c'' , the latter being the head and the former the foot ends of the same. The construction of these pieces may be readily

seen by reference to Figs. 2 and 6 in the details. In Fig. 1 the car pusher or jack is shown partially extended.

It will be noticed that the pieces c' and c'' are both mortised or slotted transversely, these slots h showing their openings at the ends of the side bar or plate a' ; also seen in Figs. 2 and 6. Through these slots extends a block or box, square in its cross-section k , and a bolt, i'' , passing through it, and the ends of the side plates a' secure the block in its position and fasten the side pieces a' together. The block k forms a sliding bearing for the pieces c' and c'' at these points. On the top and bottom sides of c' and c'' , and surrounding the slot in which the eccentric operates, is a raised flange, f' , the edges of which project sidewise over the side plates a' , which forms an upper and lower bearing for the inner ends which come together when the jack is contracted. The ends are curved out to leave room for them to meet over the hub h' of the eccentric a'' , as shown in Fig. 6. These pieces being made T-shape, and cast of malleable iron, as is also the side pieces a' , fork-piece a , clamp d , and eccentric a'' . The whole is light and very strong, being capable of moving six loaded cars at one time on a level grade. A roller, r' , is secured by a bolt in the inner end of the sections c' and c'' . This works in the slot b' of the eccentric on each side of its center. The slots b' are alternate in their positions, as seen in Fig. 1, so that they give to each of the pieces c' and c'' a thrust endwise when the lever l is operated. The hub of the roller r' , or raised boss, which is seen on the right end of the piece c' outside opposite the roller, and is also shown in the cross-section, Fig. 7, moves in a depression, u , in the side plates a' . (See Figs. 8 and 11.) The upper end of c'' is provided with a semi-spherical head, i , which is cast on it. One side projects beyond the grooved neck, so that it can be hooked into and detached from the clamp d . It is held in the clamp by a pin, i' . The clamp d is formed of the two jaw-pieces e and e' , e constituting the main or head piece. They are hinged together by a bolt near their inner angle. Each is provided with teeth and a pointed set-screw s to fasten them to the wood of the car-body c , which is shown with the corner broken out to give a view of the position of the teeth and set-screws s . The head-piece e is prolonged below, and has a small eccentric lever, f , pivoted to its lower end.

The lower jaw e' is made of bracket shape, its lower end being curved to receive the eccentric of lever f , which forces its teeth up into the bed-rail of the car-body C when the lever f is thrown up to the right, as seen in Fig. 1, which gives a view of the jack in the operative position. The ball end of c'' , it will be noticed, is turned with its projecting or hook part up. When necessary to withdraw it

from the head-piece, the latter is thrown downward and inward toward the body of the jack, and the piece easily unhooked after the jack is turned with its lever l downward. The opening in the head-piece e is beveled out to give free movement to the connection. Fig. 9 shows a top view of lever l and the eccentric a'' . The latter is provided with a hub on each side, h' , to strengthen its center and prevent any lateral movement. Figs. 10 and 11 show sectional views of the side pieces a' . These are grooved and ribbed in the full-sized machine to give them additional strength, being made thin and light for ease and convenience in handling the jack. The fork-piece a , which is also made as light as is consistent with strength, has its upper end bored out to receive the end i'' of the piece c' , Figs. 1 and 6. A groove is turned in the journal i''' to receive the end of the set-screw s' , so as to allow the foot a to be easily rotated without detaching it. The lower ends of the fork are also bored out for the reception of similar journaled ends c of the fluted cone-points t , the inner ends of which nearly touch each other. The bolt b is inserted down through the groove, turned in them, between the journals, also confining the locking-latch g , which drops over the piece a between the cones, and prevents their turning inward, but allowing free rotation outward, acting on the fluted angles of the cones much in the manner of a pawl.

To operate the car-pusher or push-jack, the lever l is raised, which draws the sections c' and c'' together in the center. It is then set on the rail against the car, as shown, and the lever thrown down, which forces the car ahead on the rails. The lever is again quickly raised and the operation repeated, the foot being lifted forward on the rail about six inches at each contractile movement.

I am aware that car-pushers for forcing the car ahead by the impingement of the foot upon the rail when set at an angle against the car-body are not new, and I do not claim the same broadly as my invention; but

What I claim as my improvement is—

1. The double eccentric a'' with its attached lever l , constructed, as shown and specified, as and for the purpose hereinbefore set forth.

2. The double eccentric a'' with its slots b' , in combination with the sliding sections c' and c'' , and the side plates a' , with their accessory parts, for producing the double-thrust movement in a car-pusher, as shown and specified, for the purpose set forth.

3. The section c' , with its grooved journal i''' , slot h , block k , and bolt s' , and roller r' , as shown and described.

4. The section c'' , with its semi-spherical head i , constructed as shown, with its parts h k i''' and roller r' , as shown and described.

5. The clamp d , with jaws e and e' , which form the head of the car-pusher or push-jack,

with its pin *i'*, eccentric lever *f*, and set-screws *s*, as shown and specified, for the purpose set forth.

6. In combination with the upper section of a car-pusher or push-jack, the clamping-device shown and specified, as and for the purpose set forth.

7. The fork-piece *a*, with its bolt *b*, latch *g*, and set-screw *s'*, constructed as specified.

8. The fluted steel cone-pieces *t*, constructed substantially as shown and described, and operated in the manner specified, as and for the purpose set forth.

9. In combination with the fork-piece *a* of a car-pusher, with its bolt *b*, latch *g*, and set-screw *s'*, the rotating cone-pieces *t*, with their approximating journals *c*, secured together and operated as specified.

10. In combination with the lower section *c'* of a car-pusher or push-jack, the forked foot-piece *a*, with its operative parts *b g s'*, and the fluted rolling cone-pieces *t*, constructed substantially as set forth.

11. In the construction of a car-pusher or push-jack, operated as specified, the combination of the double eccentric *a''*, with its slots *b*, sections *c'* and *c''*, with their detailed parts, hereinbefore described, the side plates *a'*, with their connecting parts, and the clamping-head *d*, and foot *a*, all arranged and operated, substantially as hereinbefore set forth, for the purpose specified.

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Attest:

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