C. BIRD & W. H. SULLENBERGER.

Car-Pusher.

No. 159,787. Patented Feb. 16, 1875.

FIG. 2.

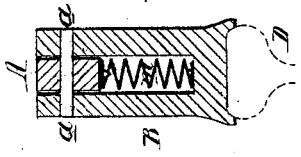

FIG. 3.

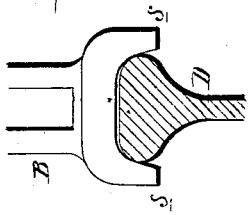

FIG. 1.

Witnesses, Harry Smith
Thomas McIlvain

Chas. Bird and
Wm H. Sullenberger
by their Attys.
Howson and Sayre

UNITED STATES PATENT OFFICE.

CHARLES BIRD, OF LOWER MERION TOWNSHIP, MONTGOMERY COUNTY, AND WILLIAM H. SULLENBERGER, OF HARRISBURG, ASSIGNORS TO THEMSELVES AND CALEB H. JACKSON, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN CAR-PUSHERS.

Specification forming part of Letters Patent No. **159,787**, dated February 16, 1875; application filed May 27, 1873.

To all whom it may concern:

Be it known that we, CHARLES BIRD, of Lower Merion township, Montgomery county, and WILLIAM H. SULLENBERGER, of Harrisburg, Dauphin county, Pennsylvania, have invented an Improved Car-Pusher, of which the following is a specification:

The object of our invention is a simple and effective device wherewith to move cars, locomotives, &c., along a track, the said device consisting of a lever, A, hinged to a shoe, B, adapted to a rail, D, as shown in the side view, Figure 1, and sectional view, Fig. 2, of the accompanying drawing, the short arm of the lever being rounded for operating on the periphery of the car-wheel with a rolling effect, as explained hereafter.

The dotted line *x* represents the tread of one of the wheels of the car to be operated on, the dotted line D representing the tread of the rail which the wheel has to traverse, and to this rail is adapted the shoe B, in the manner illustrated in the sectional view, Fig. 2, the front end, *b*, of the shoe being curved upward, so as to facilitate its movement along the top of the rail. The upper portion of the shoe is forked for the reception of the lever A, and a spring, *m*, bears with its lower end on the shoe, and with its upper end against the lever, at such a point in respect to the fulcrum-pin that it will have a tendency to elevate the long arm and depress the short arm of the said lever. This spring is not indispensable, but we prefer to apply it to the device, in the manner described, as a means of facilitating the operating of the lever. The upper edge of the short arm *d* of this lever is formed in a segment of a circle, having the same or about the same radius as the wheel on which it has to operate, for we have found that the best results can be attained by adopting a curve corresponding with the circumference of the wheel.

The instrument is operated by adjusting the lever to the wheel, as shown in Fig. 1, and then depressing the long arm of the lever, so that the short arm will operate with a rolling effect on the car-wheel and turn the same in the direction of the arrow. The long arm of the lever is then elevated and the whole instrument pushed forward until it is again in the position shown in Fig. 1, when the long arm is again depressed, and this operation is continued until the car operated on has reached its destination.

It will be observed that, in operating the lever, the fulcrum will be very near the periphery of the wheel when the long arm is elevated, and that, as this arm is depressed, the distance between the periphery of the wheel and the fulcrum of the lever will increase; hence, there is the advantage of the greatest leverage when it is most wanted—that is, when the car is first started—and a diminution of the leverage as the momentum of the car increases.

In order to prevent any possibility of the instrument slipping back over the rail when the lever is adjusted to a car-wheel and depressed, we propose to form inclined lugs *s s* upon the rear portion of the shoe, which will become wedged against the opposite sides of the rail, as shown in the transverse section, Fig. 3, when the said shoe is depressed. The under side of the shoe may also, if desired, be faced with leather, rubber, or other material which will prevent slipping.

We do not desire to claim, broadly, the combination of a shoe adapted to the rail, with a lever to act on the periphery of a car-wheel; but

We claim as our invention—

The lever A, having the upper edge of its short arm made in the segment of a circle of the same or about the same diameter as the wheel to be operated on, in combination with the shoe B, to which the lever is hung, and which is adapted to the rail, all as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHAS. BIRD.
WM. H. SULLENBERGER.

Witnesses:
GEO. B. COLE,
JACOB D. WILLIER.