(No Model.)

C. M. KIMBALL.

CAR PUSHER.

No. 444,443. Patented Jan. 13, 1891.

Fig. 1.

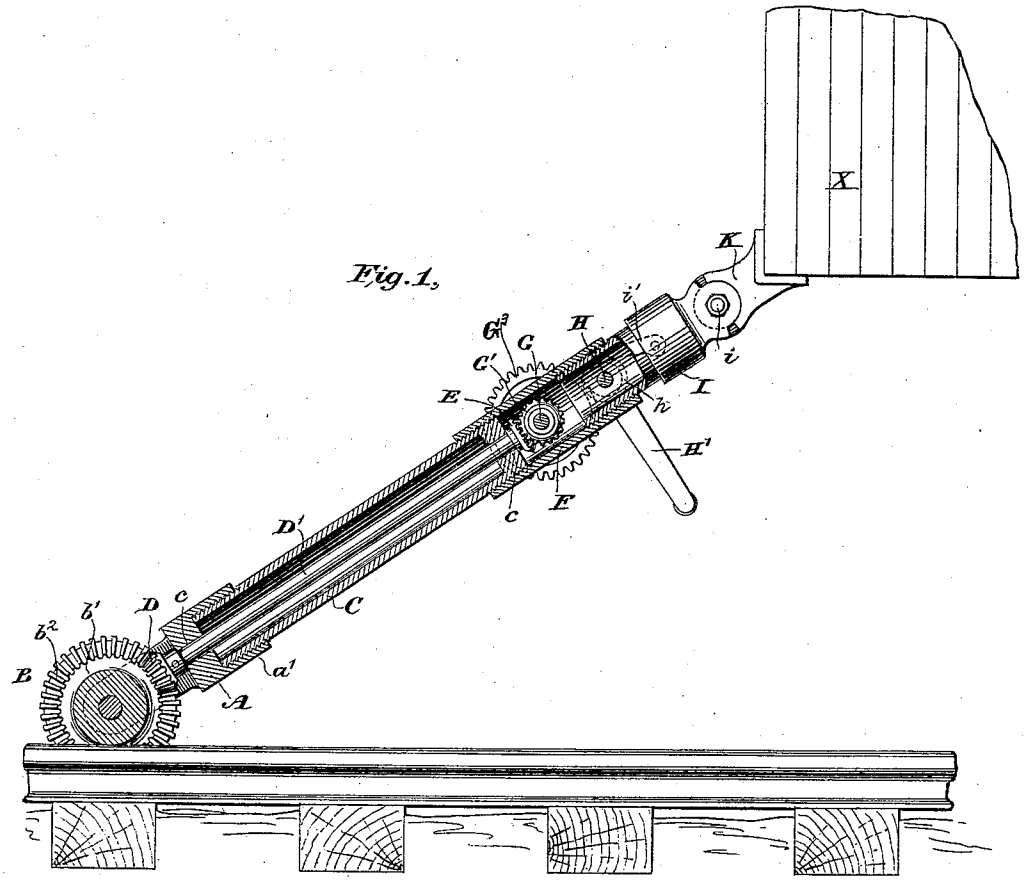
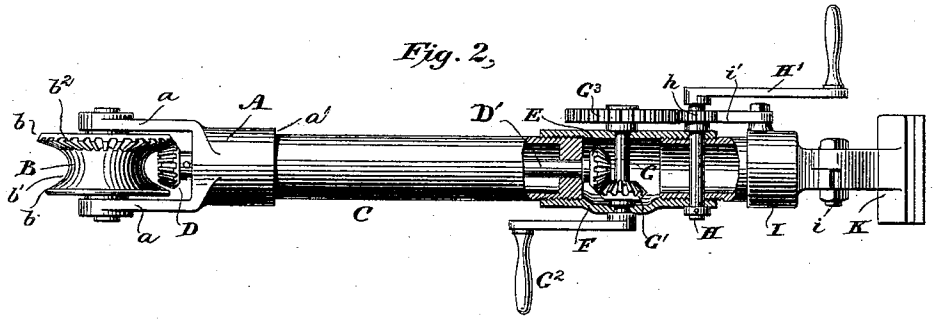


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CAR-PUSHER.

SPECIFICATION forming part of Letters Patent No. 444,443, dated January 13, 1891.

Application filed May 6, 1890. Serial No. 350,826. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. KIMBALL, a citizen of the United States, residing at Auburndale, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Car-Pushers, of which the following is a specification.

My invention relates to that class of car-pushers in which a pushing-wheel gripping upon the rail is carried by a support or beam, the upper end of which has an angular socket for embracing the edge of the car-platform, the pushing-wheel being driven by power applied through a crank and suitable transmitting mechanism.

My invention comprehends an arrangement in which the power for driving the pushing-wheel is applied at the periphery of the wheel, so that a greater leverage is obtained than where the power is applied nearer the axle of the wheel, as is usually the custom; also an arrangement of double cranks, one of which operates through a power-increasing train for the starting of the car and the other applies the power of the crank directly for pushing the car with an increased speed when once it is in motion. I also hinge the angular socket for embracing the edge of the car-platform upon the frame or stem of the car-pusher in such manner as to permit of a limited pivoting of one upon the other, as I find that better results are obtained by such a construction than where the entire beam is rigid.

In the accompanying drawings, Figure 1 is an elevation showing a section of car-track, the end of a car, and the pusher in position, the latter being shown partly in longitudinal section. Fig. 2 is a top view of the pusher, partly in section.

The frame of the pusher is composed of a casting A, having bearings *a*, in which the pushing-wheel B is mounted, and a socket *a'*, in which is screwed the tubular part C of the stem. The wheel B is formed with flanges *b*, that straddle the rail, the parts *b'* of the flanges gripping the rail frictionally. One of the flanges has formed on its inner face next its edge bevel-cogs b^2, with which a bevel-pinion D gears. This pinion is fast on a shaft D', mounted in bearings *c c* in the upper and lower ends of the tubular portion C of the stem. A bevel-pinion E on the upper end of the shaft is inclosed within a casing F, forming part of the stem. A transverse shaft G, having its bearings in the walls of the casting, carries a bevel-pinion G', meshing with the pinion E, and is also equipped with a crank G^2. By the rotation of this crank the pinion D is driven and the pushing-wheel propelled. I also provide a second transverse shaft H, having a crank H', and also a small gear-wheel *h*, meshing with a large gear G^3 on the end of the shaft G. This or any other form of power-increasing train may be employed. The upper end of the stem or frame of the pusher is provided with a casting I, pivoted at *i* to the casting K, forming the angular socket that embraces the edge of the car body or platform X. The hinge-connection, as clearly shown, permits but a limited movement. When the pusher is placed in position, as illustrated in the drawings, the greatest power will be required in overcoming the inertia of the car at rest. I therefore in starting the car operate the crank H', by which the wheel B is driven slowly but with great power. As soon as the car is in motion an increased speed is desirable and less power is required, and I then operate the crank G^2. Of course where there are two workmen both cranks may be used at the same time.

By using the pivotal connection at *i* the pushing-wheel starts more readily without slipping, and when once in motion its frictional contact with the rail is sufficient to propel the heaviest cars. The casing F might of course be sufficiently large to accommodate all the gearing within it.

In order to prevent the car from running backward on a downgrade in the event of the workman releasing the crank, I provide a check or detent device, which may consist of a pawl *i'* pivoted on the side of the casing I and engaging the teeth on the pinion *h*, as clearly shown.

I claim as my invention—

1. In a car-pusher, the combination, substantially as hereinbefore set forth, of the frame or casing, the pushing-wheel journaled in the lower end of the casing, a driving-shaft extending through the casing and gearing with the pushing-wheel, a transverse shaft at

the upper end of the casing, a pinion thereon gearing with the upper end of the driving-shaft, a crank for operating said transverse shaft, a second transverse shaft in the upper end of the frame, a crank for operating this shaft, and power-increasing gearing between said crank-shaft and the main driving-shaft.

2. The combination, substantially as hereinbefore set forth, of the pushing-wheel, the frame or casing, the driving-shaft gearing with the pushing-wheel, a transverse shaft at the upper end of the casing, a pinion thereon gearing with the driving-shaft, the crank for operating the transverse shaft, a large gear-wheel G^3 on said transverse shaft, a transverse shaft II, a small wheel h thereon gearing with the wheel G^3, a second operating-crank, and a pawl i', adapted to engage with the wheel h to prevent its rotation.

3. The combination, substantially as hereinbefore set forth, of the pushing-wheel, the tubular frame or casing, the driving-shaft gearing with the pushing-wheel, a crank, gearing connecting the crank with the driving-shaft, the castings secured to the upper and lower ends of the tubular casing, and the casting K, having an angular socket adapted to engage the under side and vertical wall of a car-body and hinged at i to the casting at the upper end of the frame or casing.

In testimony whereof I have hereunto subscribed my name.

CHARLES M. KIMBALL.

Witnesses:
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