

(No Model.)

2 Sheets—Sheet 1.

C. ROBERTS.
HAND CAR.

No. 487,378.

Patented Dec. 6, 1892.

Fig. 1.

Fig. 6.

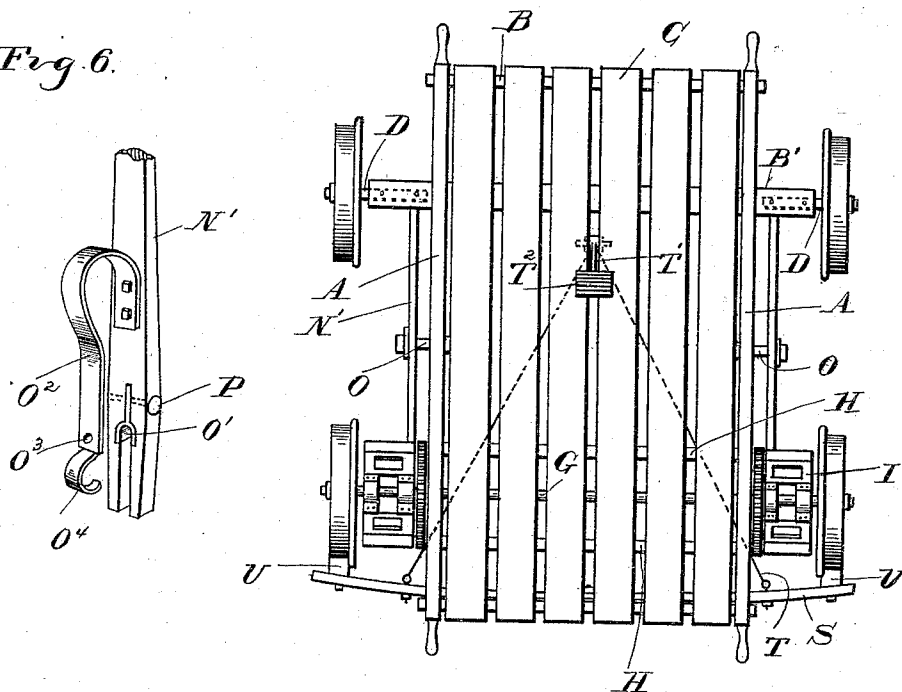
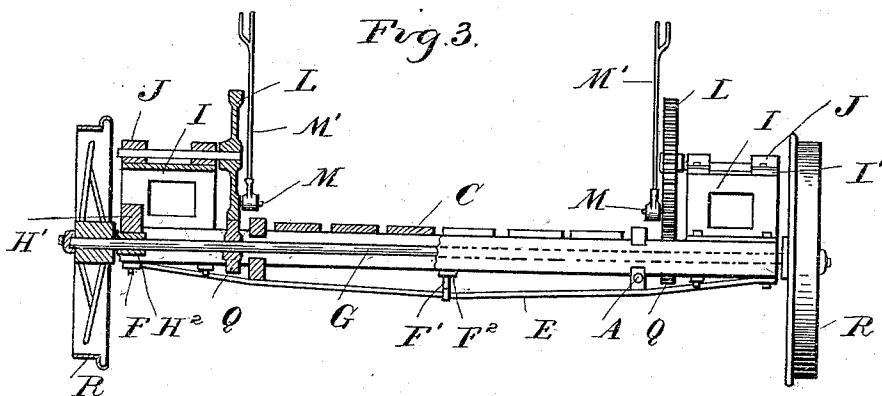


Fig. 3.



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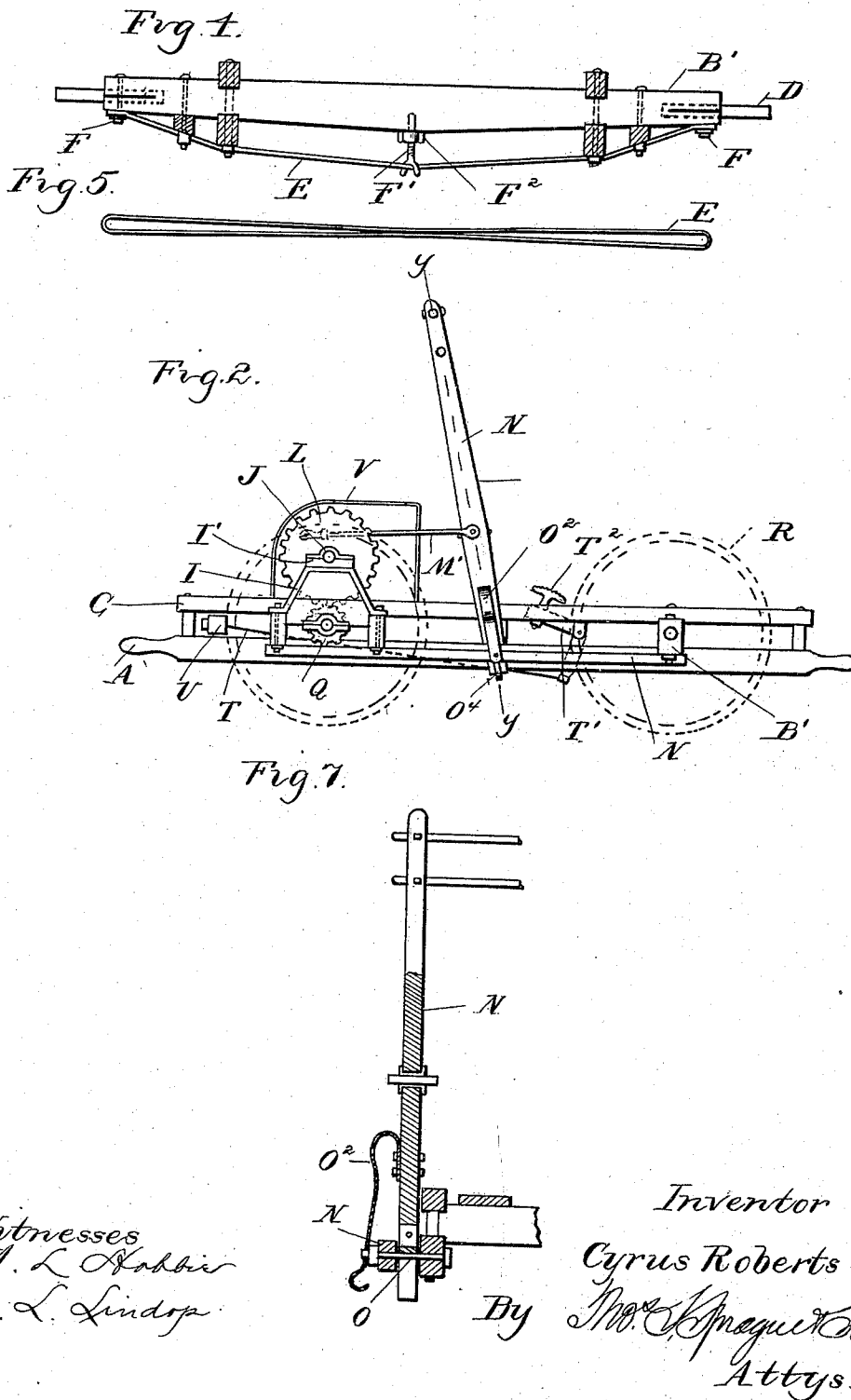
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

CYRUS ROBERTS, OF THREE RIVERS, MICHIGAN.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 487,378, dated December 6, 1892.

Application filed May 23, 1892. Serial No. 434,004. (No model.)

To all whom it may concern:

Be it known that I, CYRUS ROBERTS, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Hand-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in hand-cars of that class of light cars designed for carrying small loads at high speed; and the invention further consists in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a plan view of a car with the propelling-handles and pitman connection removed. Fig. 2 is a side elevation showing the handles in position and the wheels in dotted lines. Fig. 3 is an end elevation, partly in section, through the draft-axle and drive-shaft. Fig. 4 is a cross-section showing an elevation of the front axle. Fig. 5 is a plan view of one of the truss-rods. Fig. 6 is a detached perspective view of the lower end of one of the drive levers or handles. Fig. 7 is a section through one of the drive-levers on line *yy* in Fig. 2.

In hand-cars designed to be used for light work and where high speed is required it is necessary that the car be built with the least possible material, so that it may be handled on and off the track by a single person with ease, and yet be sufficiently strong to carry a reasonable load and to attain a considerable speed. To obtain these results, I have employed the construction herein described. The frame I construct of the longitudinal timbers A and cross-timbers B, and upon the cross-timbers I lay a platform C. I arrange one of the cross-timbers B' in proper position and extended sufficiently beyond the sides of the platform, so that by securing to the ends thereof the stub-shafts D, I am enabled to use that cross-timber as an axle. This I preferably truss by means of a truss-rod, (shown in Figs. 4 and 5,) and consisting of a single piece of iron rod E, looped and having the looped ends engaging over the clamping-bolts F in the ends of the cross-timber B', being centrally supported by the post F', which is

adjustable by means of the nut F² to give the proper tension to the truss.

G is the drive-axle, located between the two cross-timbers H, which extend beyond the platform and are connected together by means of the block H', upon the lower side of which are secured suitable boxes H², in which the drive-axle is journaled. Upon the upper side of the extensions and of the cross-timbers H, I secure an arched pedestal I, preferably formed of sheet metal bent into the shape shown in Figs. 1, 2, and 3. Upon the top of this pedestal is secured a block I', carrying a box J for the drive-shaft K, journaled therein, and upon the inner end of which is secured the gear-wheel L, this construction being the same at both ends of the axle. Each gear-wheel is provided with a crank-pin M, to which is connected the connecting-rod M', secured at its other end to the handles or actuating-levers N, which are pivoted upon the pins or bolts O, extending through the longitudinal side bars of the frame and through the brace-bars N', which are arranged parallel therewith and secured at each end. The lower end of the lever is bifurcated, as shown in Fig. 6, having a Y-shaped saddle O' in the bifurcation, resting upon these pins between the side bar of the frame and the brace-bar N'.

O² is a spring-cushion secured at the lower end of the lever and extending down outside of the brace N', having an aperture O³, adapted to engage over the end of the bolt which projects beyond the end of the brace-bar to hold the lever from accidental disengagement.

O⁴ is a finger-clip at the end of the spring, by means of which the spring may be disengaged from the bolt when the handles are desired to be detached, as in shipping. They may be entirely disengaged by removing the bolt P, forming the pivotal connection for the end of the connecting-rod M'.

The gear-wheels L mesh with a drive-pinion Q on the axle, and by rocking the levers forward and backward motion will be imparted to the gear-wheels and through them to the axles and wheels R for propelling the car.

S is a brake-rod secured centrally to the under side of the frame, as shown in Fig. 1, and extending with its ends across the wheels.

This brake-rod I make of any suitable flexible material and connect each end by means of the connecting-rods T with the bell-crank lever T', having one end projecting through the platform in proximity to the place where the operator will stand, so that by pressing down upon the foot-piece T² on the bell-crank lever he will draw in the ends of the brake-lever, causing the brake-shoes U to impinge against the wheels. As soon as he releases his pressure from the bell-crank lever the resiliency of the brake-rod will cause it to straighten and carry the brake-shoes away from the wheel.

V is a guard, preferably of sheet metal, for the gear-wheels and the connecting-rod M', so that persons or things upon the platform may not be injured by the movement of the wheel and rod. This I consider an important feature in my construction, as otherwise the drive mechanism would be exposed and be liable to cause injury.

What I claim as my invention is—

1. In a hand-car, a frame comprising longitudinal timbers, cross-timbers, and a platform, and axles formed by extensions of the cross-timbers, substantially as described.

2. In a hand-car, a frame comprising longitudinal timbers, cross-timbers, and a platform, and stub-axles secured in the end of the cross-timbers and wheels journaled thereon, substantially as described.

3. In a hand-car, a frame comprising longitudinal timbers, cross-timbers, and a platform, stub-axles secured in the end of the cross-timbers, and a truss-rod for the cross-timbers, substantially as described.

4. In a hand-car, the combination of the frame comprising longitudinal and cross timbers, a truss for said frame, comprising a looped metal rod, bolts over which the ends engage, and a central adjustable post, substantially as described.

5. In a hand-car, the combination, with the platform, of cross-bars beneath the same, extending at each end beyond the sides thereof, a connecting-block between said cross-bars at the extension, boxes secured centrally to said cross-bar, and the drive-axle journaled in said boxes, substantially as described.

6. In a hand-car, the combination, with the frame comprising the cross-bars extending

beyond the sides thereof, of the drive-axle journaled between the cross-bars, the pedestal supported upon the extensions, the drive-shaft journaled in the pedestals, the gear-wheel on the drive-shaft, the actuating-levers for driving the gear-wheel, and the pinion on the drive-axle, with which said gear-wheel engages, substantially as described.

7. In a hand-car, the combination, with the frame, of the pedestal I, extending above and located beyond the side of the platform, the boxes formed upon the top of said pedestal, the drive-shaft journaled in said boxes, the gear-wheel on the drive-shaft, and means for actuating the gear-wheel, the drive-axle, and the pinion on the axle, with which said gear-wheel engages, substantially as described.

8. In a hand-car, the combination, with the platform, the drive-levers, the actuating mechanism, and the connecting-rod from the drive-levers to the actuating mechanism, of a guard for the connecting-rod above the platform, substantially as described.

9. The combination, in a hand-car, with the platform, of the drive-levers, the actuating mechanism above the platform, the connecting-rod between the drive-lever and the actuating mechanism, and a guard for the drive mechanism and the connecting-rod, substantially as described.

10. In a hand-car, the combination, with the wheeled platform and the drive mechanism, of a brake consisting of the flexible brake-beam S, centrally secured to the frame, having brake-shoes at the ends, the connecting-rods T, extending from near the ends of the brake-beam to a central actuating-lever, and an actuating-lever extending above the platform, substantially as described.

11. In a hand-car, the combination, with a platform comprising longitudinal side timbers and the brace-timbers N', extending parallel therewith, of a pivotal bolt between the two, the actuating-levers N, bifurcated to embrace said bolt, and a saddle O', substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CYRUS ROBERTS.

Witnesses:

M. B. O'DOHERTY,
N. L. LINDOP.