(No Model.) 2 Sheets—Sheet 1.

C. ROBERTS.

HAND CAR.

No. 455,579. Patented July 7, 1891.

Fig. 1

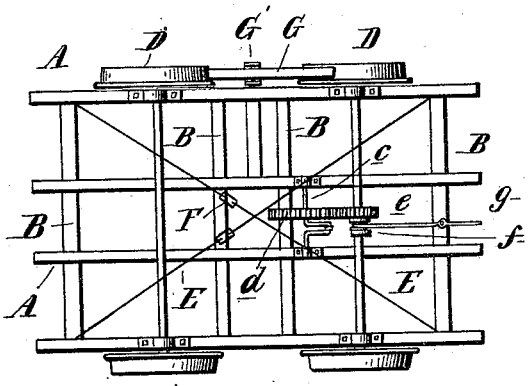


Fig. 2

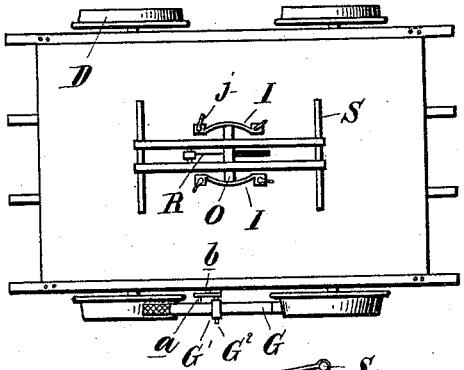


Fig. 4

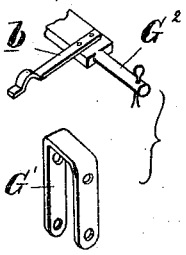
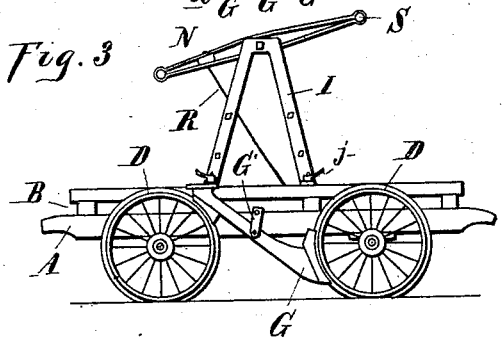


Fig. 3



Witnesses:
P. M. Hulbert
M. B. Dogherty.

Inventor:
Cyrus Roberts
By Thos. G. Sprague & Son
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

2 Sheets—Sheet 2.

C. ROBERTS.

HAND CAR.

No. 455,579. Patented July 7, 1891.

Fig. 5

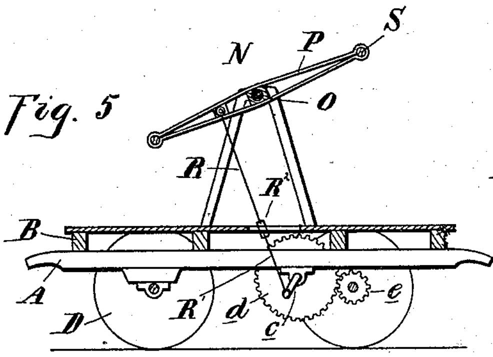


Fig. 8

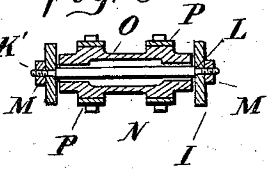


Fig. 6

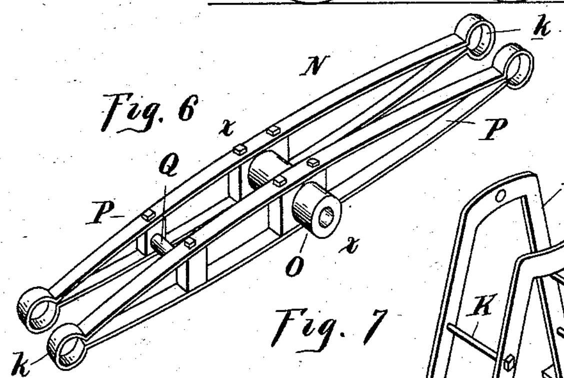
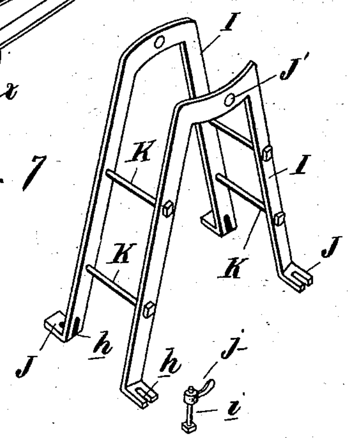


Fig. 7



Witnesses:
P. M. Hulbert
M. B. O'Dogherty.

Inventor:
Cyrus Roberts
By Thos. S. Sprague & Son,
Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CYRUS ROBERTS, OF THREE RIVERS, MICHIGAN.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 455,579, dated July 7, 1891.

Application filed October 6, 1890. Serial No. 367,251. (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 Railway 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 railway hand-cars; and the invention consists in the peculiar construction of the frame and of diagonal trusses applied to that frame, whereby the frame may be trued up by tightening said trusses; also, in the peculiar construction of the brake, whereby it is simplified and made more effective; also, in the construction of the gallows-frame which supports the walking-beam and in the walking-beam; further, in the peculiar means employed in making that frame and walking-beam detachable, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a bottom plan view of my improved car. Fig. 2 is a top plan view thereof. Fig. 3 is a side elevation thereof, and Fig. 4 is a detached perspective view of parts of the brake mechanism. Fig. 5 is a vertical central longitudinal section through my car. Fig. 6 is a detached perspective view of the walking-beam. Fig. 7 is a detached perspective view of the gallows-frame. Fig. 8 is a vertical section on line $x\,x$ in Fig. 6.

The car-frame is composed of the longitudinal bars A and cross-bars B, bolted together at their points of intersection and supported upon suitable trucks D. Upon the under side this frame is provided with trusses E E, extending diagonally across the frame and secured to the corners thereof, each truss being provided with a turn-buckle, such as F, by means of which the truss may be lengthened or shortened.

It has been found in practice that after a car of this kind has been built the trucks do not always run perfectly true, even though the axles of the truck be placed parallel with the cross-bars B; and I have also found that by arranging such diagonal trusses with means for varying the strain of the same such a frame may be trued up and the trucks made to run perfectly true upon the track.

Upon the side of the frame is pivoted a single bar or beam G. This beam I preferably pivot to the lower end of the stirrup G′, the upper end of which is suspended from a pin G^2, secured to the frame of the car. The brake-beam G extends from beneath the front car-wheel to a point above the rear car-wheel and is counterbalanced to have its lower end heavier, so that it is held normally out of contact with both wheels, but is prevented from dragging on the ground by means of a pin a on the brake-beam engaging with a stop b on the frame. The link G is normally in an inclined position, as shown in Fig. 3, and when the operator desires to brake the car he places his foot upon the foot-rest H, and in pressing down the beam will swing forward until its forward end impinges against the forward wheel, while the upper end rests upon the rear wheel, braking both wheels simultaneously and in a most efficient manner. The words "front" and "rear" are used on the supposition that the car is moving to the right.

c is a crank-shaft journaled in the frame of the machine centrally thereof, upon which is secured the gear-wheel d, meshing with the pinion e upon the drive-axle of the car. The pinion e is loose upon the axle and is thrown into and out of engagement therewith by means of any suitable clutch—such as f—having a hand-lever g extending to the side of the frame.

Centrally of the frame I secure my gallows-frame, which is of the following construction: I are two like U-shaped iron bars, preferably formed from band-iron, having at their lower ends suitable feet J, connected together by cross-bars K. This frame is detachably connected with the platform in any suitable manner, the means I have shown consisting of slots h in the lower end of the frame and bolts i in the platform provided with swing-nuts j. The slots being engaged with the bolts and the swing-nuts turned up tightly, it is evident that the frame will be rigidly secured to the platform. The upper or connecting portion of each of the frames I curve outwardly, as shown in Fig. 7, and provide

with a suitable aperture J′, adapted to receive a clamping-bolt K′, having shoulders L, against which the sides of the gallows-frame are tightly clamped by means of suitable nuts M. Centrally upon this pin is journaled the walking-beam N. The walking-beam consists of a central bearing O and of two parallel bars P, secured thereto. Between these bars at one end is secured a suitable pivot Q, adapted to receive the upper end of the pitman-rod R. The pitman-rod is formed of two parts, the upper part R and the lower part R′, connected by a turn-buckle R″, said lower part being of such length that it does not project above the platform, all so arranged that by disconnecting the two parts of the pitman-rod and removing the gallows-frame the platform may be entirely clear, so that the car may be used as a push-car, in which event I disconnect the clutch *f* from the pinion *e*. By arranging the upper bearing for the pitman-rod between the two parallel bars of the walking-beam I get a vertical strain upon the pitman-rod without any danger of twisting or of unequal strain from either side, as is apt to be the case where the pin is secured on one side of a single bar, as has heretofore been done.

In order that the walking-beam may not be too heavy, I form each bar from steel or band-iron by first bending the bar into the shape of an ellipse, welding the ends together, and then forming at the ends suitable sockets *k*, and between these sockets the main body portion of the bar I curve oppositely, forming a double truss, and securing them centrally upon the bearing O. Suitable handles S are placed in the sockets *k*.

What I claim as my invention is—

1. In a hand-car, the combination, with the frame and trucks, of two or more truss-rods beneath the frame extending from one corner diagonally to the opposite corner, respectively, and means on the rods for varying the stress, whereby the frame may be trued up, substantially as described.

2. In a hand-car, a brake consisting of a bar suspended by a link at the side of the car normally out of contact with the wheels and adapted to be swung with both ends into contact with the wheels, substantially as described.

3. In a hand-car, a brake consisting of a bar pivotally suspended upon a link from the side of the car, extending from beneath one wheel to a point above the adjacent wheel, and counterbalanced to be normally out of contact with said wheels, substantially as described.

4. In a hand-car, the brake consisting of the bar G, pivotally suspended by the link G′ and counterbalanced to be normally out of contact with the wheels, and a stop *b*, substantially as described.

5. The combination, with the platform of a gallows frame, of a walking-beam journaled at the upper end of said frame, and means, substantially as specified, for detaching the gallows-frame from the platform and the walking-beam from the driving mechanism, substantially as described.

6. In a hand-car, a supporting-frame for the walking-beam provided with open end slots at the base, bolts adapted to enter said slots, and clamping-nuts on said bolts, whereby said frame may be detached, substantially as described.

7. In a hand-car, the combination, with the walking-beam and the drive mechanism, of a connecting-rod between said drive mechanism and beam, made in two parts detachably secured together, the lower part being entirely below the platform, substantially as described.

8. In a hand-car, a walking-beam composed of two parallel beams, each beam consisting of oppositely-curved metal bars and a central pivoted bearing and cross-bars at the ends thereof, substantially as described.

9. A walking-beam for a hand-car, formed of metal and comprising a central portion consisting of oppositely-curved bars, sockets formed at the ends, and a central pivotal bearing, substantially as described.

10. In a hand-car, a gallows-frame for the walking-beam, consisting of two united U-shaped frames formed, respectively, of single pieces of metal united by cross-bolts along their sides and formed with slotted attaching-feet at their lower ends, substantially as described.

11. In a hand-car, the walking-beam consisting of two like parallel bars N, each composed of an oppositely-bent bar having sockets at the ends, the central bearing O, forming the spacing-block, and the pin Q between said bars, substantially as described.

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

CYRUS ROBERTS.

Witnesses:
JAMES WHITTEMORE,
P. M. HULBERT.