

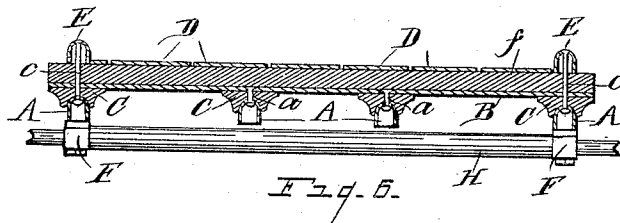
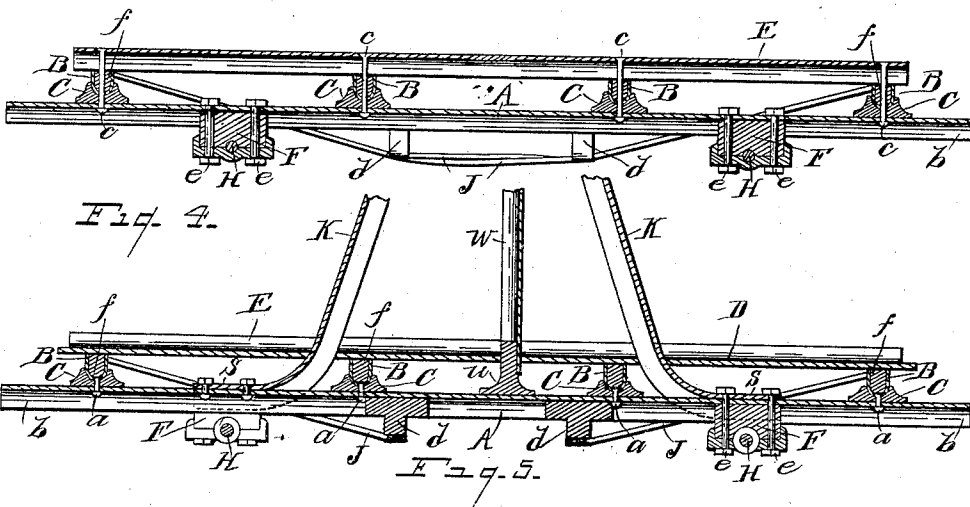
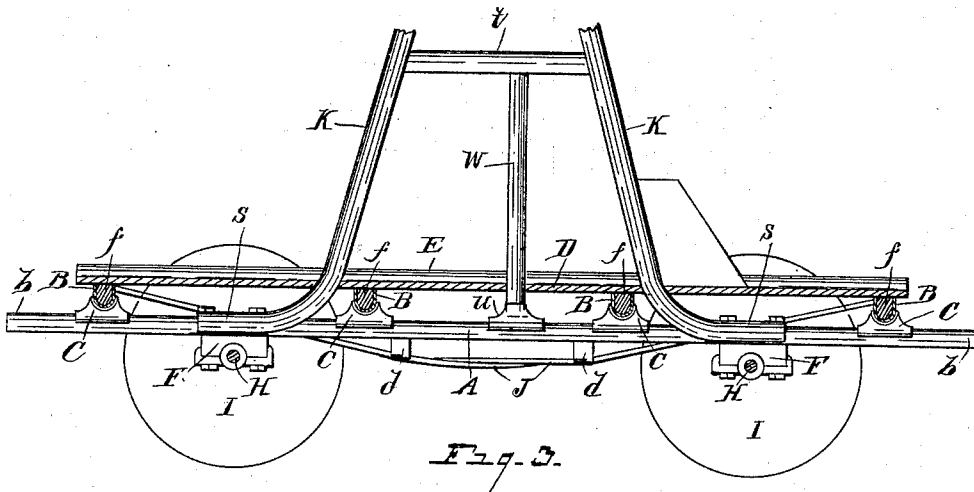
(No Model.)

2 Sheets—Sheet 2.

E. COURTRIGHT.
METALLIC HAND CAR FRAME.

No. 468,511.

Patented Feb. 9, 1892.



WITNESSES.

B. P. Wheeler Fig. 7.
O. D. Baumziger.

INVENTOR
E. Courtwright
By
Ramon B. Wheeler
att'y

UNITED STATES PATENT OFFICE.

EDGAR COURTRIGHT, OF DETROIT, MICHIGAN.

METALLIC HAND-CAR FRAME.

SPECIFICATION forming part of Letters Patent No. 468,511, dated February 9, 1892.

Application filed June 24, 1891. Serial No. 397,292. (No model.)

To all whom it may concern:

Be it known that I, EDGAR COURTRIGHT, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Metallic Hand-Car Frames; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in metallic frames for hand-cars; and it consists in a certain construction and arrangement of parts, as fully hereinafter set forth, the essential features of which being pointed out particularly in the claims.

The object of the invention is to produce a metal frame for hand-cars that is light and strong and in which the construction is such that the racking of the frame is obviated and the tram of the wheels maintained perfectly in line. This object is attained by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved car. Fig. 2 is an inverted or bottom plan of the car-frame. Fig. 3 is a longitudinal section through the car-frame as taken on dotted line 3 3 of Fig. 2. Fig. 4 is a like section as taken on dotted line 4 4 of Fig. 2; and Fig. 5 is a like section on dotted line 5 5 of Fig. 2. Fig. 6 is a transverse section as taken on dotted line *x x* of Fig. 2. Fig. 7 is a perspective view of the duplex chair or saddle employed to connect the transverse tie-beams and longitudinal girders of the frame at their point of crossing.

Referring to the letters of reference, A designates the girders of the car-frame, and B the tie or cross beams thereof. Said beams and girders are formed of light rolled metal and are U-shaped in cross-section, whereby the requisite strength is obtained with but little weight. The girders A extend longitudinally of the frame with their convex face uppermost, the projecting ends of said girders being rounded to form handles *b*, by means of which the car may be lifted onto or off the

track. The beams B extend transversely of the frame with their convex face undermost and tie the girders A, upon which they are supported, said girders and beams being coupled by the duplex chair or saddle C, (shown in Fig. 7,) composed of the right-angled conversely-concaved parts 8, adapted to fit over the convexed upper face of the girders A and receive the convexed under face of the tie-beams B, said parts being secured in place by the bolt or rivet *a*, passing through the tie-beam, saddle, and girder, as clearly shown in Figs. 5 and 6. The cross or tie beams B of the frame are provided with a filling *f* of wood, as shown in Figs. 3, 4, 5, and 6, which permits the boards D, forming the bed or platform of the car to be securely attached, the nails passing through the wood *f* and clinching on the concaved surface within the hollow of said beam.

E designates a guard-rail, which is also U-shaped in cross-section and extends along the longitudinal edges of the frame upon the cross-beams B, with their convexed surface uppermost. Said rails retain the wood filling *f* within the cross-beams B and are secured by bolts or rivets *c*, passing through the rail, beam B, saddle C, and girder A, as clearly shown in Figs. 4 and 6.

Secured to the under face of the girders A by means of the bolts *e* are the boxes F, having upper rounded faces that fill the opening of the girder, which prevents said boxes turning around or getting out of line. In said boxes are journaled the axles H, carrying the transporting-wheels I.

J designates the truss-rods that cross the bottom of the frame diagonally, their ends being secured at the opposite corners of said frame. Said rods pass under the feet or bearing-blocks *d*, that are secured within the under face of the inner girders and form the points of support for the central portion of the frame, and are provided with a screw-coupling *m*, (see Fig. 2,) by means of which any desired tension may be given said rods and the perfect rectangular form of the frame maintained.

The frame supporting the propulsive mechanism of the car is composed of the inclined uprights K, coupled at their upper ends by the looped portion *h* (shown in Fig. 1) and

braced by the cross-bar t , to which is secured the upper end of the vertical support w , the lower end of which is provided with a foot u , that rests upon and is secured to the girder A, said support having mounted thereon the box n , in which is journaled the shaft of the driving mechanism, which mechanism, being the subject of a previous application, need not be particularly described herein. The uprights K , cross-bar t , and support w are also made of light-rolled metal formed U-shaped in cross-section, and said uprights at their lower ends are provided with a foot portion s , that fits over the convexed upper face of the girder A and is secured thereto, whereby said uprights are firmly retained in place and a light and strong frame for the propelling mechanism is provided.

It will now be apparent that by employing this improved frame a tight, strong, and serviceable hand-car may be produced without materially increasing the cost of manufacture over the ordinary wooden frame, in which the racking of the frame is obviated and a high degree of durability is attained.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the metal girders U-shaped in cross-section, the metal beams crossing said girders, said beams being U-shaped in cross-section, and the interposed duplex chairs.

2. The metal girders U-shaped in cross-section along their major portions and having round end terminals, combined with the metal cross-beams U-shaped in cross-section, the interposed metal duplex chairs, and means uniting the girders and beams to said chairs.

3. In a hand-car, the combination of the metal girders U-shaped in cross-section, the metal beams of like form crossing said girders, the interposed duplex chairs, and the truss-rods crossing said car diagonally, said truss-rods having means for adjustment.

4. In combination with the metal girders and cross-beams U-shaped in cross-section,

the interposed duplex chairs, the U-shaped guard-rails, and means binding said parts together at the crossing points.

5. A metal hand-car frame comprising the metal girders and cross-beams U-shaped in cross-section and having their convex faces adjacent to each other, combined with the interposed metal chairs, the wood filling in the cross-beams, and means for securing said parts together at their crossing points.

6. The metal car-frame comprising the metal girders and cross-beams curved in cross-section, combined with the metal chairs located between said girders and beams, the filling of wood in the cross-beams, the metal guard-rails curved in cross-section, said guard-rails being mounted on the cross-beams, and rivets binding said parts together.

7. In a car-body, the combination of the metal girders and cross-beams U-shaped in cross-section, the interposed duplex chairs, the wood filling in the cross-beams, the metal guard-rails U-shaped in cross-section, means for securing said parts together at the crossing points, and the wooden platform secured to the wood filling of the cross-beams.

8. In combination with the metal girder U-shaped in cross-section, the frame mounted thereon, comprising the metal uprights U-shaped in cross-section and having the coupling-section h at their upper ends, and curved base or feet s , fitting over the convexed surface of said girder.

9. A hand-car frame consisting of metallic girders and cross-beams whose parts are curved in cross-section, combined with interposed metal chairs at their crossing points, and a pair of truss-rods having their ends secured to the corners of the frame, crossing the same diagonally, and having screw-couplings for adjustment.

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

EDGAR COURTRIGHT.

Witnesses:

E. S. WHEELER,
R. B. WHEELER.