

(No Model.)

C. ROBERTS.  
HAND CAR.

No. 446,716.

Patented Feb. 17, 1891.

Fig. 1

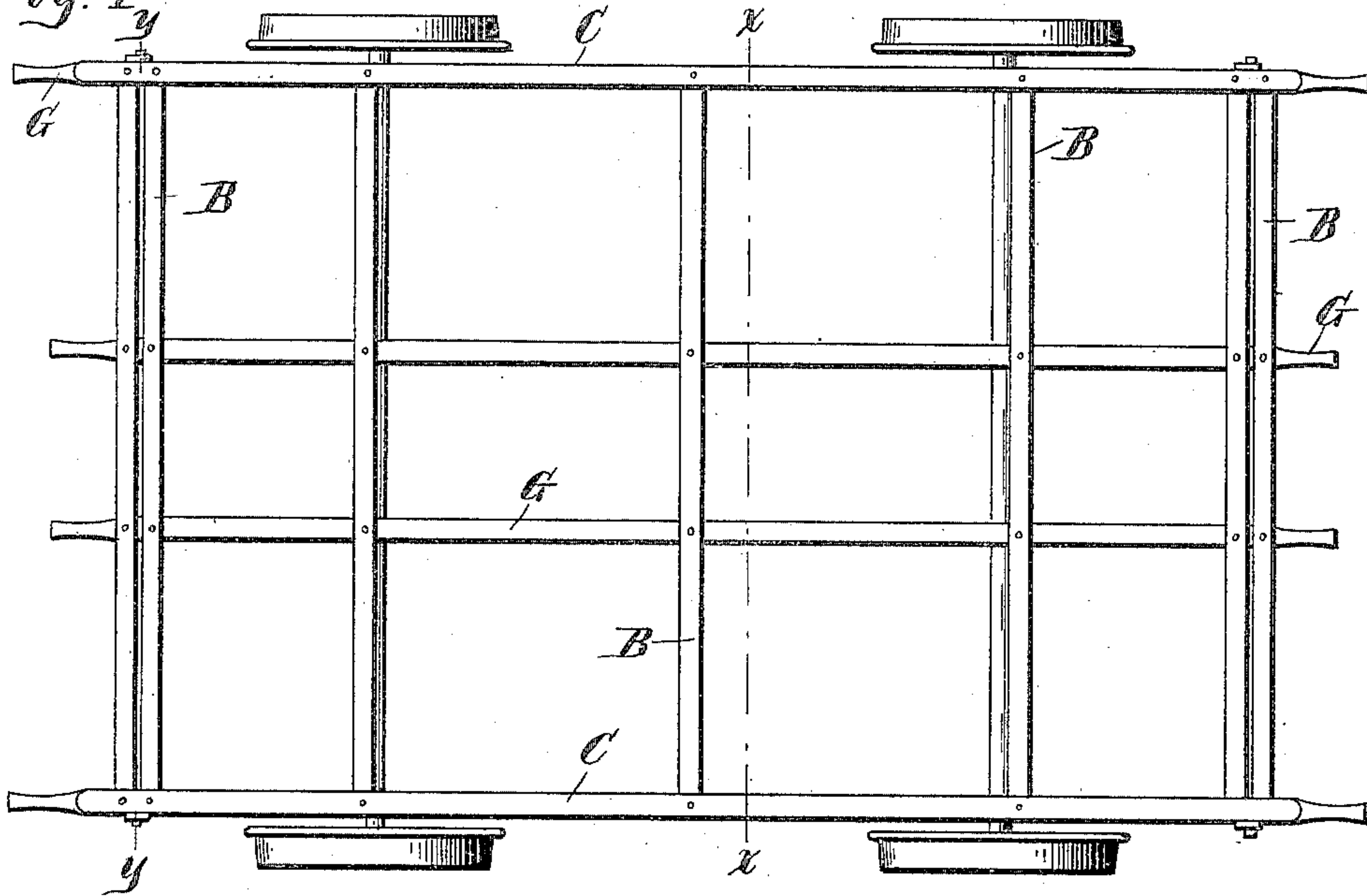


Fig. 2

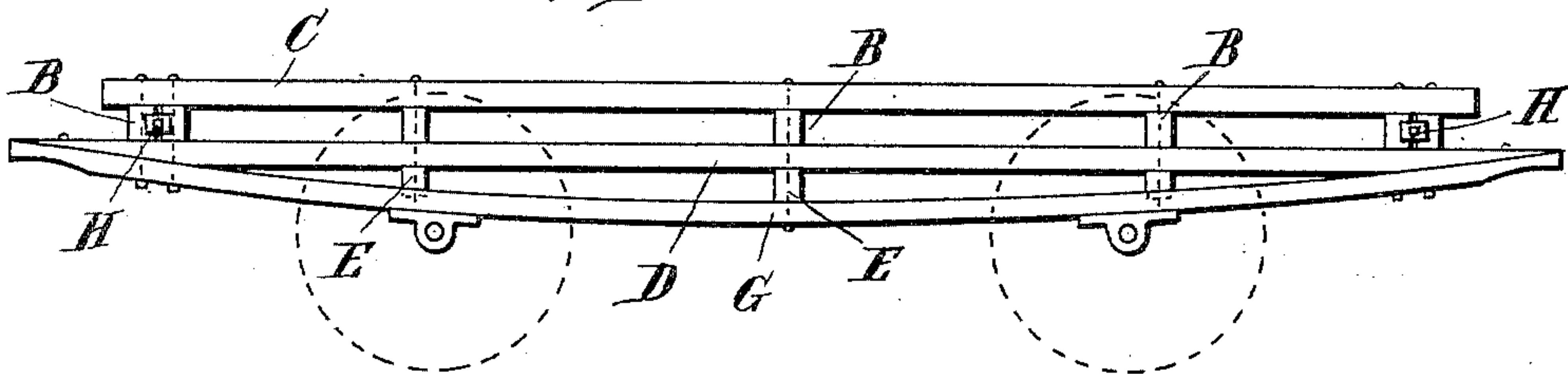


Fig. 3

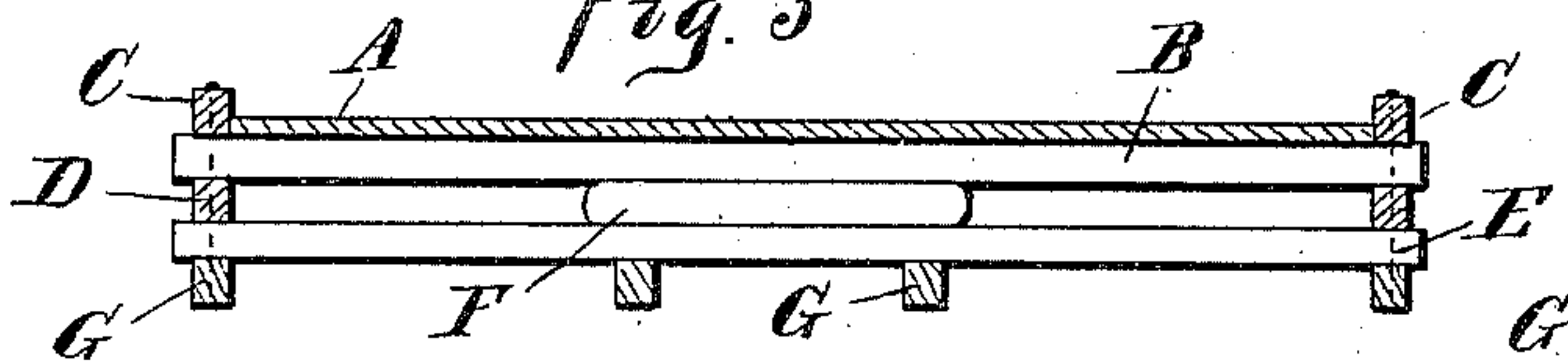
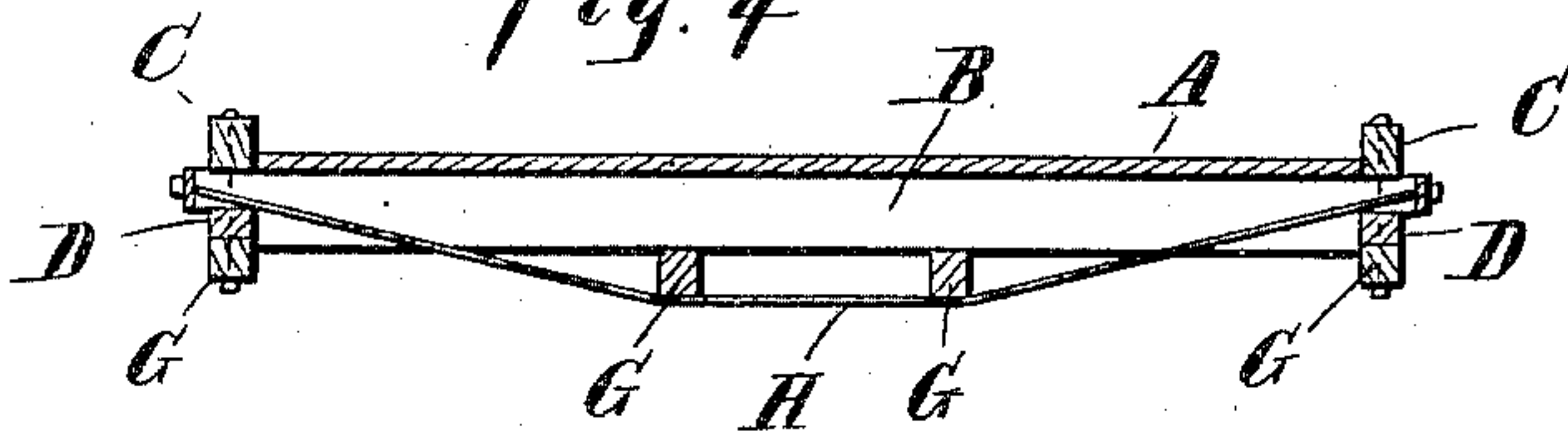


Fig. 4



Witnesses:

P. M. Hilbert  
P. M. O'Leary

Inventor:

Cyrus Roberts  
By Thorff & Magner & Son  
Att'y.



# UNITED STATES PATENT OFFICE.

CYRUS ROBERTS, OF THREE RIVERS, MICHIGAN.

## HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 446,716, dated February 17, 1891.

Application filed August 9, 1890. Serial No. 361,596. (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; and the invention consists in the improved construction of the car body or platform of hand-cars, there being two kinds of hand-cars in use on railways, one kind being provided with a propelling mechanism and is mainly used for transporting the men from and to their work, and the other kind being used for transporting material and is commonly called a "push-car," being unprovided with a propelling mechanism.

The hand-car with the propelling mechanism may be made available for both purposes, provided the propelling mechanism is properly constructed, so that it will not interfere with the loading and unloading, and provided the car-body is made so stiff that it will not bend or sag, so as to distort the propelling mechanism when it is used for carrying heavy loads, such as ties, rails, &c., for which push-cars are now used.

My present invention refers to the construction of the platform or body alone, so that it will be of such stiffness that propelling mechanism may be applied to it without any danger of having it distorted by a heavy load to be carried upon the platform when used as a push-car.

The paramount consideration of lightness which requires that a car must be light enough to permit of its being lifted off the track in cases of emergency to avoid a passing train makes it inexpedient to proceed in the ordinary manner to obtain the necessary stiffness by using material of greater strength, as this would increase the weight beyond what is permissible, and the object of my invention is to overcome this difficulty; and to this end I have devised a construction in which the elements of the frame are arranged in the form of strong trusses, which at once increases the stiffness of the car-body to the desired

degree without increasing the weight, and which at the same time affords increased facility for supporting the body upon the wheels in the usual manner, all as more fully hereinafter described and shown.

In the drawings, Figure 1 is a plan view of my improved car body or frame with the floor lifted off. Fig. 2 is a side elevation thereof. Fig. 3 is a cross-section on line  $x x$ ; and Fig. 4 is a cross-section on line  $y y$ , Fig. 1.

My car-body is of the usual rectangular shape supporting on top the floor A upon the usual parallel cross-bars B, which extend from side to side of the platform at suitable distances apart, except that I preferably double the cross-bars at the ends, securing them at a small distance apart, just enough to afford room for a transverse truss-rod, which is secured and arranged as hereinafter described more fully. This upper tier of cross-bars is supported by longitudinal side bars C and D, the former on top and the latter on the under side of the parallel tier of cross-bars.

In the ordinary construction a number of intermediate longitudinal bars parallel to and corresponding with the side bars D are used, which I now omit in my construction, and instead thereof I support the side bars D by a second tier of cross-bars E, corresponding to and immediately below the upper tier of cross-bars, except at the ends. This second tier of cross-bars support the first tier of cross-bars and near the center of the body by short filling-bars F, which do not extend to the sides, and finally I place below this lower tier of cross-bars the longitudinal truss-bars G, preferably to the number of four, the two outer ones immediately below the side bars C and D and the two inner ones to either side of the center. By cutting down the ends of the second tier of cross-bars in the proper manner and making the end cross-bars of suitable depth these truss-bars G are caused to be centrally deflected below the side bars D, with their ends gradually emerging to the plane of the side bars, as shown. The usual handles are formed upon the ends of these truss-bars, and the ends of the side bars are preferably beveled off to form a smooth joint, as shown at all points of crossing of the different bars to connect them together. A transverse truss-rod H is preferably secured



between the double cross-bars at the ends of the platform, and this truss-rod passes below the ends of the central truss-bars, and the ends of the truss-rod are secured to the ends of the cross-bars in the usual manner of forming a truss.

It will be seen by my construction that the three bars C, D, and G, which are in a vertical plane with each other on each side of the platform, form a strong truss in connection with the ends of the cross-bars passing between them, and with the bolts connect them at every point of crossing. This increases the depth of the body of the car between the ends very materially, while at the ends the body is the usual depth, and thus forms the same height of handles for lifting the car as in the ordinary construction, while at the place where the axles are journaled, the bearings for the axle-boxes are brought nearer to the axle of the car and the depth of the body of the car between the two axles is so materially increased as to afford the desired stiffness without any increase in the weight of the material used for building the cars, as I make the proper reduction in the size of the bars as compared with the ordinary construction.

The upper tier of cross-bars and lower tier of cross-bars, with the intervening filling-bars F between them, may be obviously formed integral in one piece without changing the construction of the car, the plan described of forming them of separate pieces being merely considered by me as forming a saving of material.

The upper longitudinal side bars C, instead of being straight, may be, if desired, curved upwardly from the ends inversely to the longitudinal truss-bars G by cutting down the ends of the upper tier of cross-bars in the proper manner, and this would still more increase the strength of the car-body.

What I claim as my invention is—

1. In a railway hand-car, a car-body composed of longitudinal bars and cross-bars bolted together at the points of intersections to form a frame and supporting a flooring, the sides of said frame constituting vertical trusses, each composed of three longitudinal bars engaging between them the ends of the cross-bars, the lower one of said longitudinal bars being curved upwardly from the center toward the ends and connected to the ends of the central longitudinal bar, and transverse trusses at the ends, substantially as described.

2. In a railway hand-car, a car-body composed of longitudinal bars and cross-bars bolted together at their points of intersections to form a frame and supporting a flooring, said frame comprising a series of longitudinal truss-bars bent upwardly from the center to the ends on the under side of said frame, and transverse trusses at the ends, substantially as described.

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

CYRUS ROBERTS.

Witnesses:

M. B. O'DOGHERTY,  
P. M. HULBERT.