(No Model.) 2 Sheets—Sheet 1.

J. A. JEFFREY.

CARRIER.

No. 374,477. Patented Dec. 6, 1887.

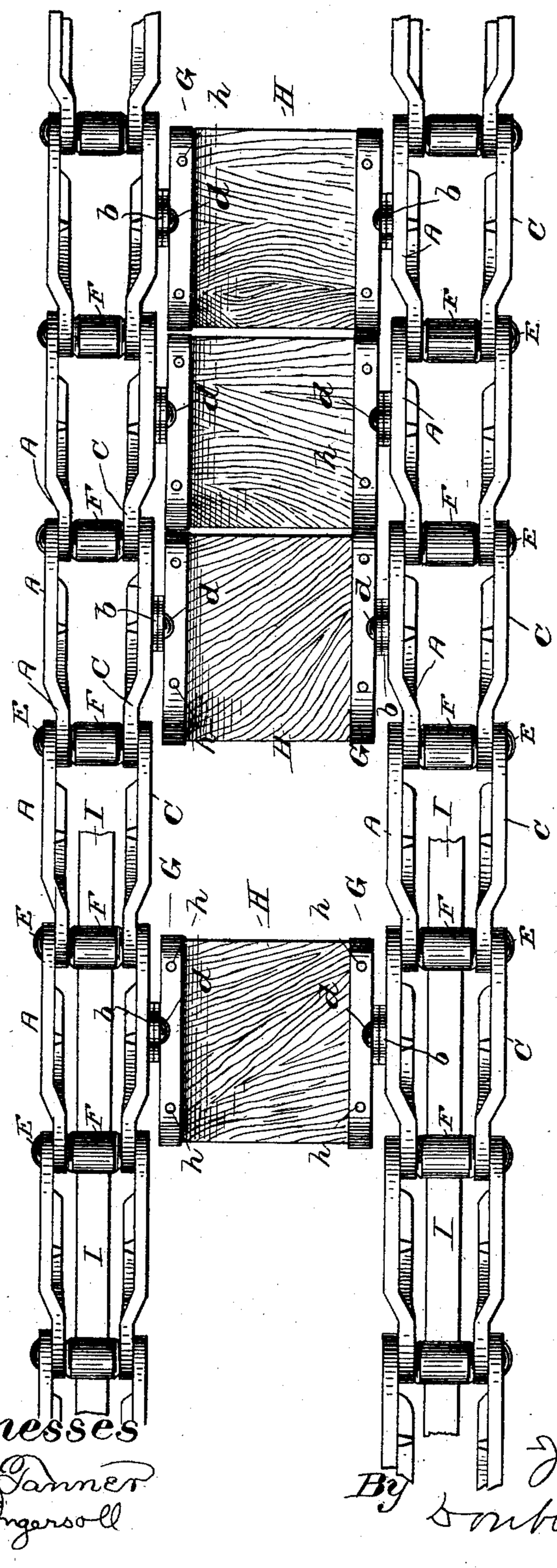

Fig. 1.

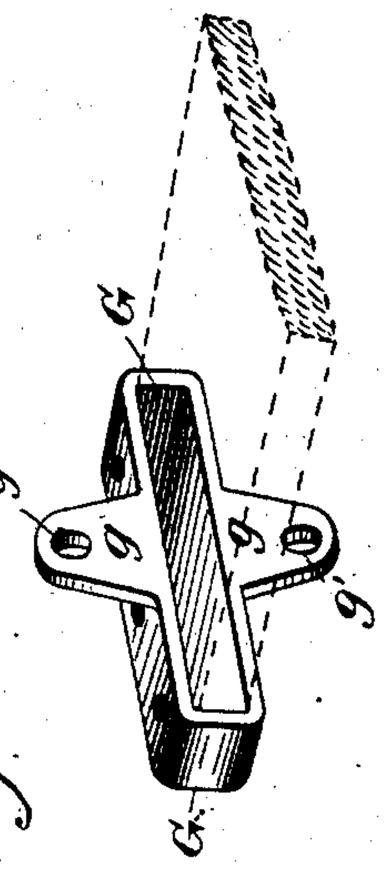

Fig. 4.

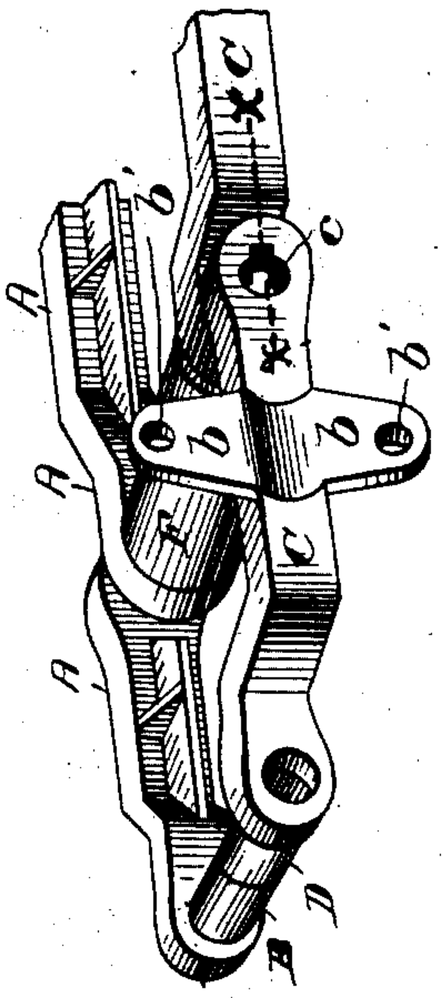

Fig. 3a

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(No Model.) 2 Sheets—Sheet 2.

J. A. JEFFREY.

CARRIER.

No. 374,477. Patented Dec. 6, 1887.

Fig. 2.

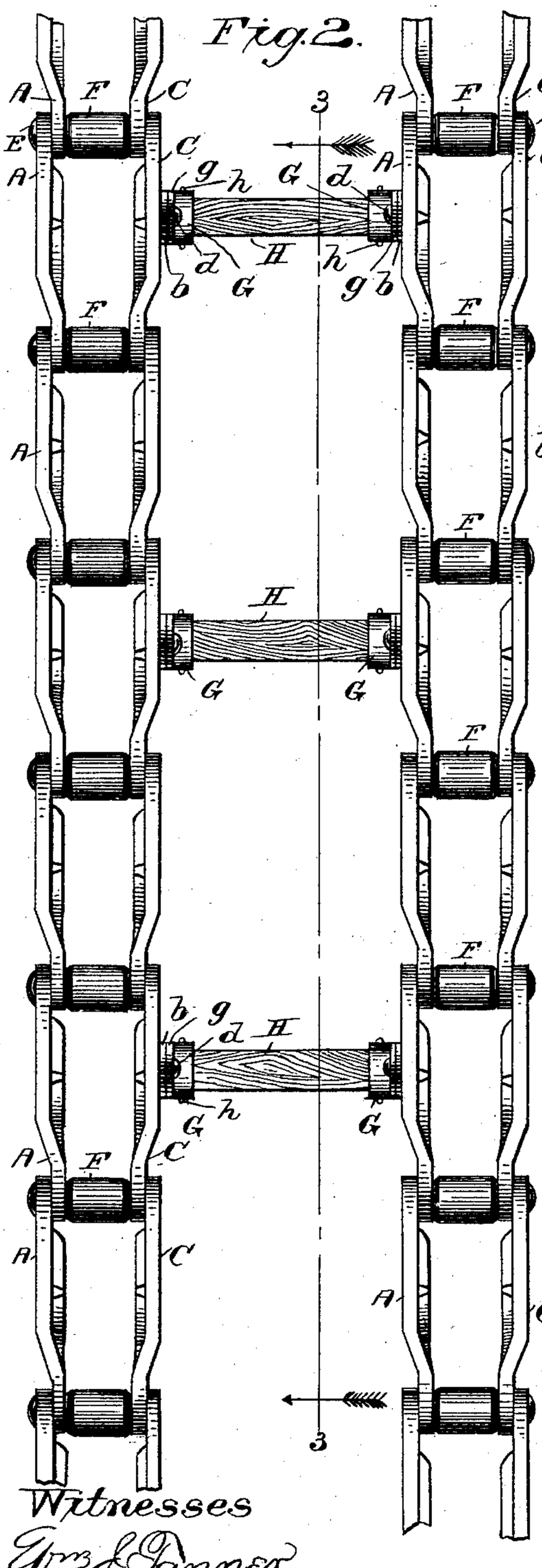


Fig. 3.

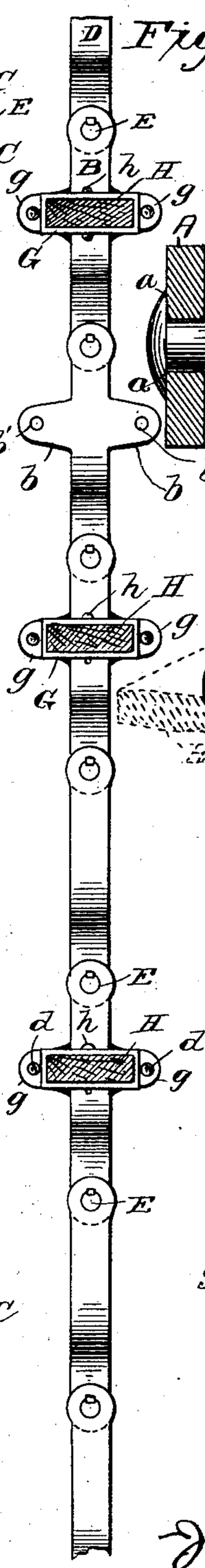
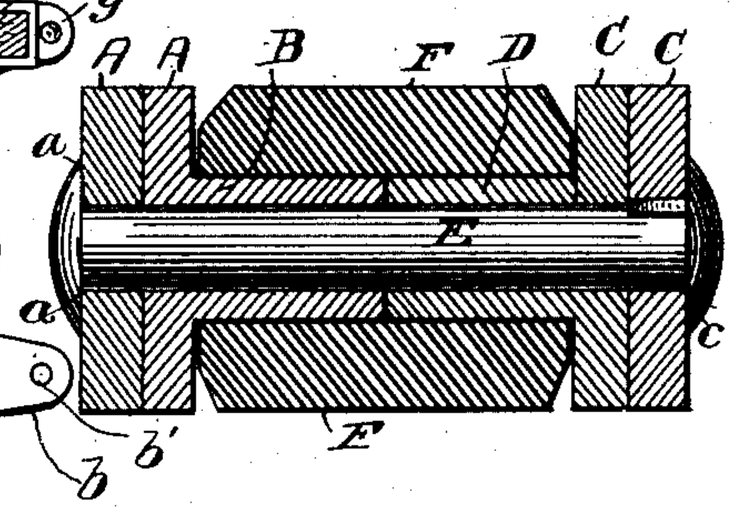


Fig. 7



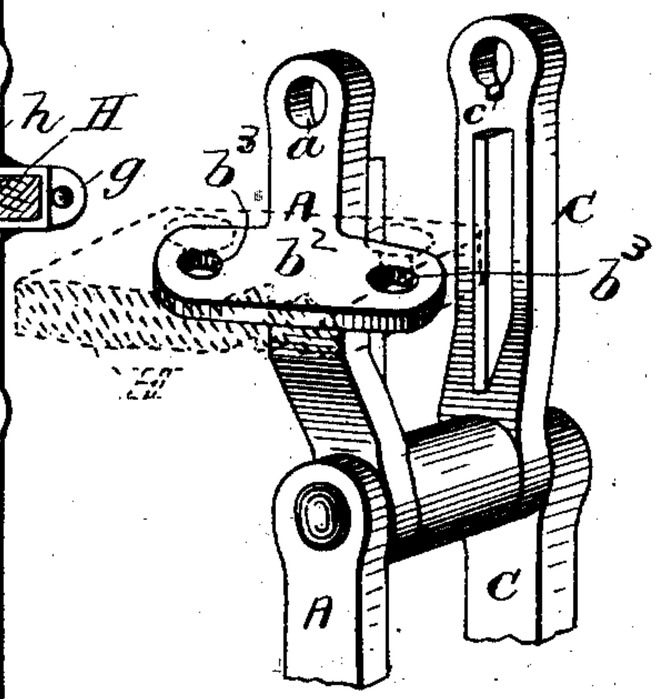


Fig. 5.

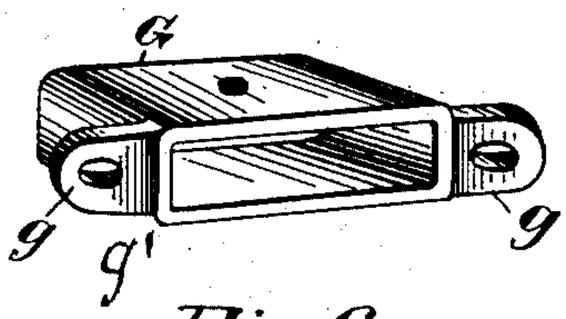


Fig. 6.

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UNITED STATES PATENT OFFICE.

JOSEPH A. JEFFREY, OF COLUMBUS, OHIO, ASSIGNOR TO THE JEFFREY MANUFACTURING COMPANY.

CARRIER.

SPECIFICATION forming part of Letters Patent No. 374,477, dated December 6, 1887.

Application filed August 25, 1887. Serial No. 247,864. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. JEFFREY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Carriers, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a plan view of my improvement in a horizontal position. Fig. 2 is a front view in a vertical position. Fig. 3 is a section of Fig. 2 on line 3 3. Figs. 3ª and 4 are detached views enlarged. Figs. 5 and 6 are detached views enlarged, showing a modification of parts of the structure. Fig. 7 is an enlarged section on line *x x*, Fig. 3ª, of so much of the chain as is necessary to illustrate its structure at that point.

Like letters refer to like parts in all the figures.

The object of my invention is to construct an improved carrier which shall be adapted for the transportation of various articles in horizontal or vertical planes, or planes which are slightly inclined, the construction of parts being such that the direction of travel of the carriers can be changed from a horizontal plane to a vertical plane without undue strain upon any of the parts.

The chain which I propose to use in the carrying out of my invention is preferably composed of separable side bars, A B, C D, of which the parts B D are inward-projecting thimbles or sleeves, the opposite ends of the side bars having seats *a c* to receive a pintle, E, which also passes through the sleeves B D, thus tying the side bars together into a chain.

F F are anti-friction rollers mounted on the sleeves.

The pintles are by preference locked in their seats *a c*, so as to be incapable of movement therein, whereby the wear is transferred to that part of each pintle which is seated in its adjacent sleeves B D.

One side bar of each pair of links or of each second, third, or fourth pair, as may be desired, is provided with ears *b b*, projecting at right angles from the side bar and upon opposite sides thereof.

G is a socket or box, preferably angular in cross-section, and provided upon its longer side with outward-projecting ears *g g* of such length that the holes *g'* therein will register with holes *b'* in the ears *b* of the side bar, to receive bolts or rivets *d*, whereby these parts may be firmly united to each other, but can be easily separated by taking out either the rivets or the screws, as the case may be.

H H are carrier-slats or supporting-slats, having their ends seated in the boxes G G, to which they may be further secured by pins *h h*, passing through the slats and the sides of the boxes, (one or more sides of each box.)

In Figs. 5 and 6 I have shown a modification adapted to carry articles in vertical planes or planes which are slightly inclined to the vertical. In Fig. 5 I have omitted the boxes, and have bolted the ends of the carrier-slats directly to the ears b^2 b^2, which in this instance project at right angles from their respective side bars and upon both sides of the bars. Some of the advantages arising from my invention are incident to both constructions. For instance, it will be observed that the connections between the carrier-slats and the side bars of the chains are wholly upon one side of their respective chains, and do not, therefore, in any manner interfere with a proper engagement of the sprocket-wheel teeth with the links of the chain; nor do they interfere with a satisfactory running of the anti-friction rollers during their engagement with the sprocket-wheels and a supporting-track, I, which is frequently employed to support the weight of the carrier when traveling on horizontal or inclined lines. Again, the combination of these carrier-slats, the ears, the side bars, and fastening devices, which connect these parts together with great firmness and rigidity, practically prevent all sidewise swaying of the chain between its supporting-wheels, and thus insures that the carrier will run with a minimum of friction and wear and tear upon the sprocket-wheel and also upon its supporting-tracks. Again, the use of two ears to each side bar, projecting upon opposite sides of the side bar, insures a great uniformity in the working strain upon the articulations of the links, especially when the carrier is changing its direction of travel.

The construction shown in Fig. 5 is particularly advantageous, from the fact that the bolt-

ing of the side bars at two points, b^3 b^3, to each end of the carrier-slat practically insures that the pintles and anti-friction rollers of those bolted links shall be at all times kept in the same plane relatively to the slat and the parts of the sprocket-wheels which they are traversing, thus guarding against unequal wear of the articulation or the bearing-surfaces of the rollers and their inclosed sleeves.

Wherever in this specification I have used the words "above" and "below" the bars I refer to the fact that the ears *b b* project both above and below their respective side bars when the chain is arranged in a horizontal plane; and it will be seen that in both constructions the ears project from the inner and adjacent side bars of the two parallel lines of chains, the outer side bars of the chains having no ears projecting from them.

What I claim is—

1. In a carrier, the combination of the outer side bars, the inner side bars provided with oppositely-projecting ears, the pintles, the anti-friction rollers, and the carrier-slats connected to the oppositely-projecting ears, substantially as set forth.

2. In a carrier, the combination, with the carrier-slats, of the chain-links having the oppositely-projecting ears, and the boxes connected to the ears and having the ends of the carrier-slats attached thereto, substantially as set forth.

3. In a carrier, two parallel lines of chains provided upon their adjacent sides with oppositely-projecting ears, and the carrier-slats shorter than the distance between the chains and having their ends secured to the ears upon both the upper and lower sides of the chains, substantially as set forth.

4. In a carrier, the combination of the carrier-slats and two parallel lines of endless chains provided upon their inner faces with boxes receiving and supporting the ends of the carrier-slats, substantially as set forth.

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

JOSEPH A. JEFFREY.

Witnesses:
T. M. LIVESAY,
A. C. WILLIAMS.