

(No Model.)

3 Sheets—Sheet 2.

H. J. MILLER.
ROAD CART.

No. 428,014.

Patented May 13, 1890.

Fig. 2.

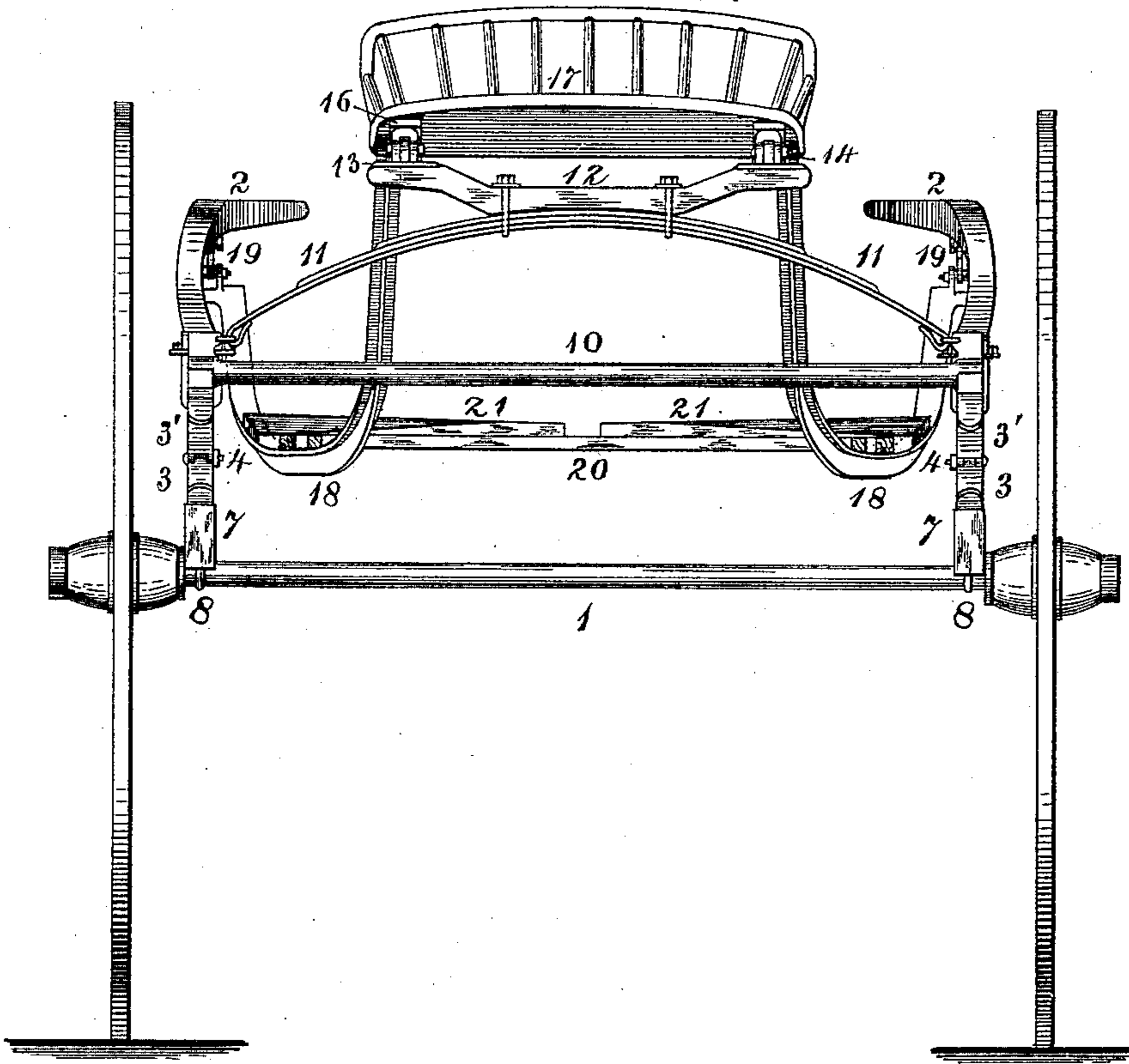
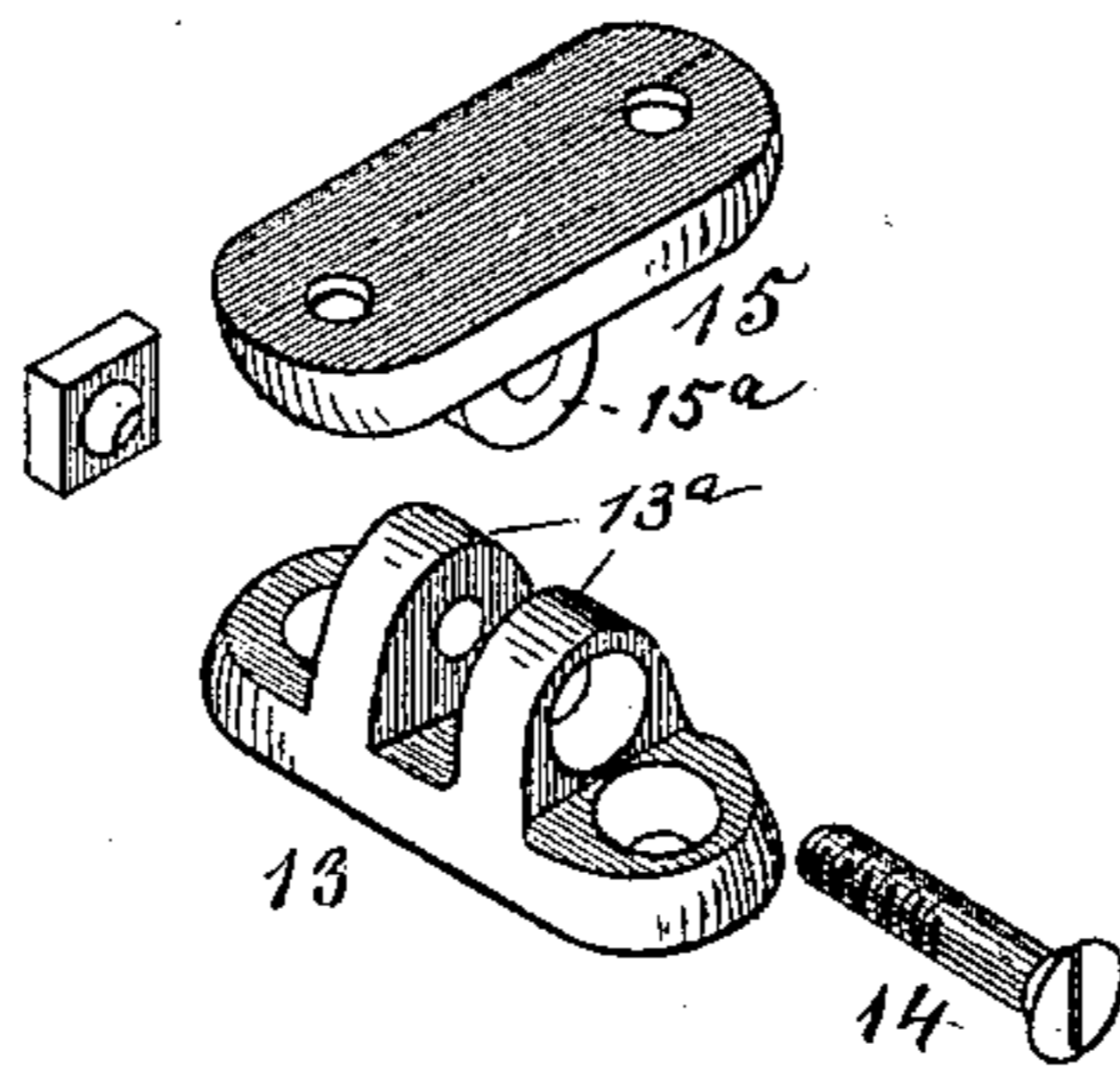


Fig. 5.



Witnesses.

Geo. H. Knight, Jr.
Lillie Hanna

Inventor.

Henry J. Miller
Knight Bros

Attorneys.

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Fig 3.

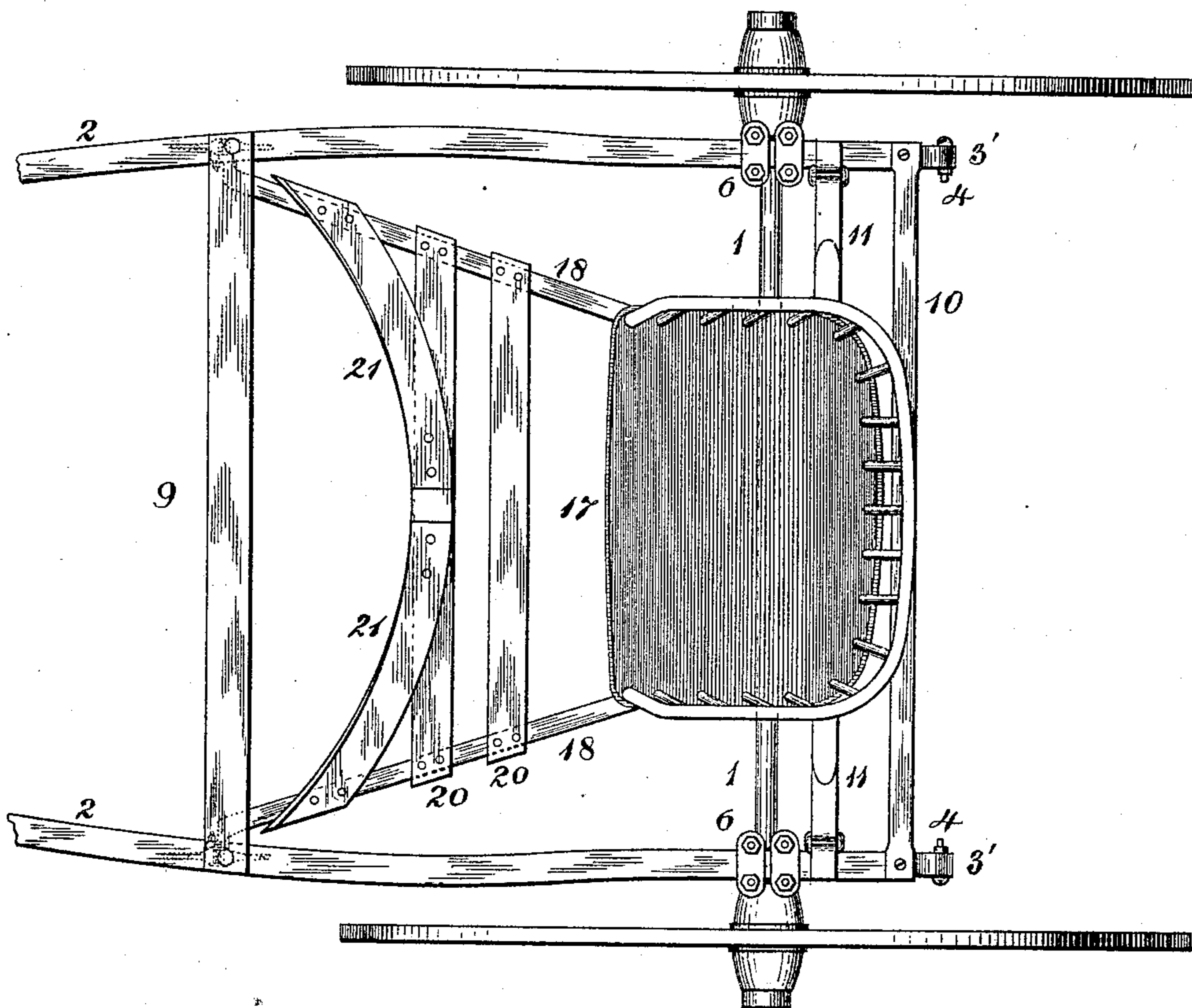
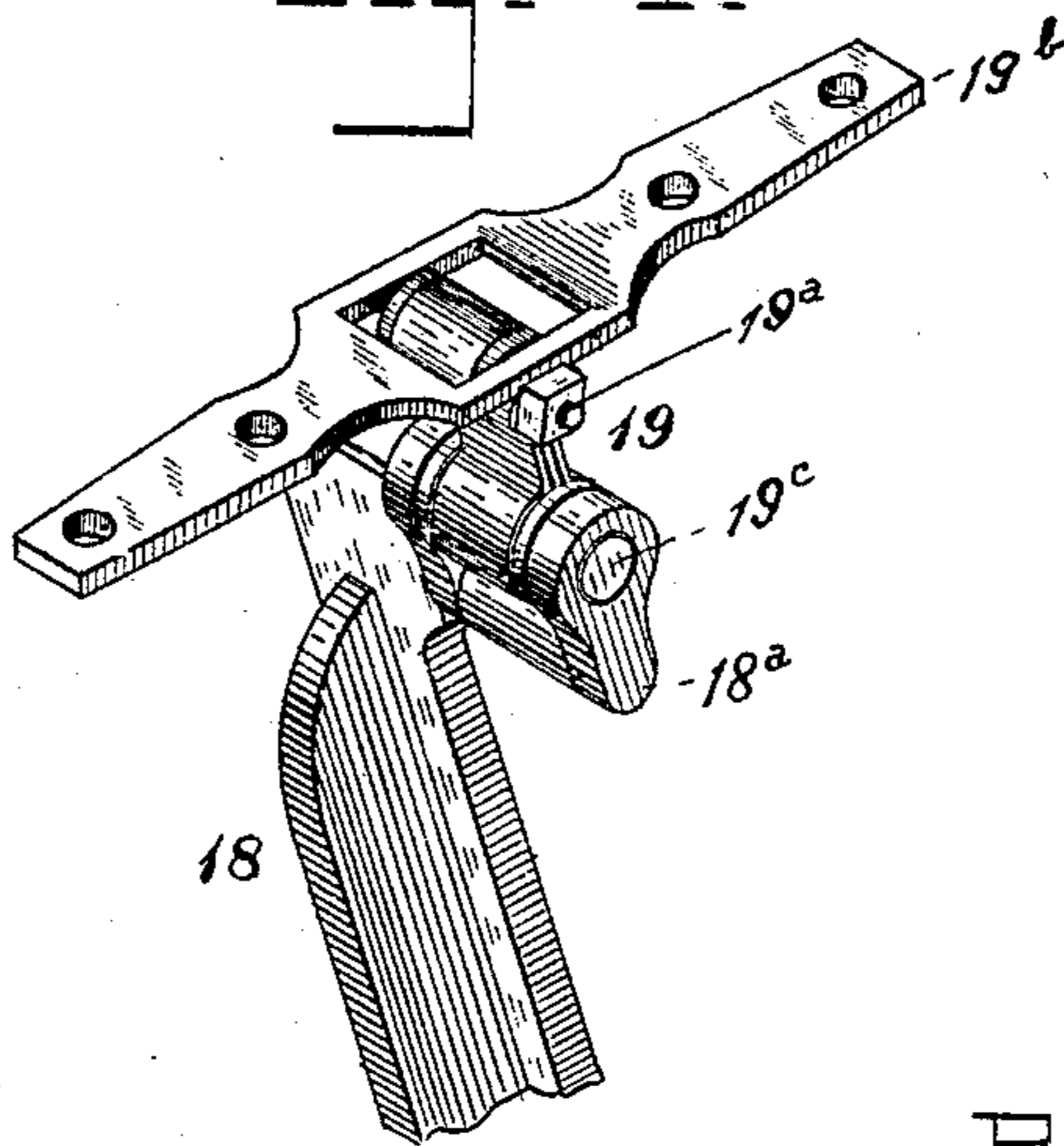


Fig 4.



Witnesses.

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Inventor
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UNITED STATES PATENT OFFICE.

HENRY J. MILLER, OF GOSHEN, NEW YORK.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 428,014, dated May 13, 1890.

Application filed April 13, 1889. Serial No. 307,092. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. MILLER, a citizen of the United States, residing at Goshen, county of Orange, State of New York, have invented new and useful Improvements in Road-Carts, of which the following is a specification.

My improvements, while applied to two-wheeled vehicles generally, have been more especially designed for those known as "road-carts," employed for training and display of trotting-horses. Strength, lightness, elasticity, and easy motion both for horse and driver are among the important desiderata in such vehicles and these desiderata it is a purpose of my invention to secure. The means by which I accomplish the above ends I now proceed to describe.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of portions of a road-cart embodying my invention. Fig. 2 is a rear and Fig. 3 is a plan view of the same. Figs. 4 and 5 show certain details of the vehicle on a larger scale.

Instead of being connected directly to the axle 1 the shafts 2 are coupled to and rest upon the axle through the medium of a duplex plate-spring 3 3' of the peculiar construction shown—that is to say, having two members of very unequal length, two of whose ends are permanently coupled by means of a hinge 4, their other ends being clipped or bolted to the shafts, as at 5 and 6. The lower and longer spring member 3 either rests directly upon the axle or upon a block or bar 7, which itself so rests, and in either case is firmly secured to the axle by clips 8.

Resting by its ends on the shafts 2 a little in rear of the axle and firmly clipped or bolted to said shafts is a cambered or arching plate-spring 11, upon which is securely clipped a spring-bar 12, which may be of hickory or other suitable timber. The two shafts are firmly framed together by a front cross-bar 9 and a rear cross-bar 10. Clipped or screwed to each end of said spring-bar is an eye or hinge member 13, which is coupled by a pintle 14 with the upper hinge member 15, which, being bolted through cleats 16 and seat 17, completes the connection of the seat with the supporting-axle. The lower hinge

member 13 has a pair of perforated lugs 13^a, through which and a perforated lug 15^a, projecting down from the upper member and fitting between said lugs 13^a, said pintle 14 passes. As the hinge members move one on the other the curved surface of each lug bears upon the top or under side, as the case may be, of the opposing member, so that the pintle 14 serves merely as a coupling for the members, while the strain and weight is directly on the latter and their lugs.

In order to provide a support for the floor-slats and by the same means to stay the seat and its supporting-springs against back-wrenching, such as is incident to a sudden "spurt" of the horse and to the forward jerk consequent on an obstruction in the track, there are two curved bars 18, preferably of steel and having a T-formed section. Each of said bars is at its rear end firmly bolted to the under side of the seat, preferably in rear of its front, so as to lessen the transmission of horse motion of the shafts to the seat. The front ends of the bars 18 are coupled to the undersides of the shafts by links 19. The links 19 are connected and secured to the shaft-plate 19^b by means of the bolts or pintles 19^a, and are also secured to the shoulders 18^a of the bars 18 by means of the bolts or pintles 19^c. A double advantage results from this link-connection. First, it greatly diminishes or wholly prevents the "horse motion;" or, in other words, the forward and backward jerking action of the horse's body expends itself on the shafts and running-gear without being communicated to the seat. For the same reason a forward jerk, incident to a sudden balk or halt, in like manner spends itself on the springs and running-gear, and the life and limbs of the driver are not put in jeopardy. It is at same time easier on the animal, because should the wheel strike an obstruction the momentum of the seat and its occupant is expended on the springs and reaches the horse only gradually. The hinged attachment of the seat to its supporting-springs further aids this automatic "give and take" of the parts spoken of.

The floor consists of a number of straight slats 20, clipped or bolted to the bars 18. Bolted to the top of the frontslat and clipped or bolted to the bars 18 are two brace-pieces

21, which, besides greatly stiffening the carriage-bed, afford safe and convenient foot-rests for the driver. At the same time they are so arranged as not to interfere with the
5 horse.

I have described my preferred form of the improvement, but reserve the right to make obvious modifications. For example, the rear ends of the bent bars may be joined to
10 the seat by double hinges like those by which the front ends are coupled to the shafts.

The double-hinge attachment of the bent bars can be either directly to the shafts, as shown, or to a cross-bar thereof.

15 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a road-cart or other two-wheeled ve-

hicle, the seat 17, cleats 16, and spring-bar 12, supported by the spring, in combination with 20 the hinges consisting of the members 13 15, having lugs engaging each with the opposing member to take the weight and strain off the pintle, and the connecting bolt or pintle 14, passing through the lugs, substantially as set 25 forth.

2. In combination with the floor slats or boards and bars 18, supporting the outer ends thereof, the separate curved braces 21, supported at the forward part of the floor at 30 their inner ends and on the bars 18 at their outer ends.

HENRY J. MILLER.

In presence of—

H. A. WALKER,

GEO. H. WESCOTT.