

No. 691,945.

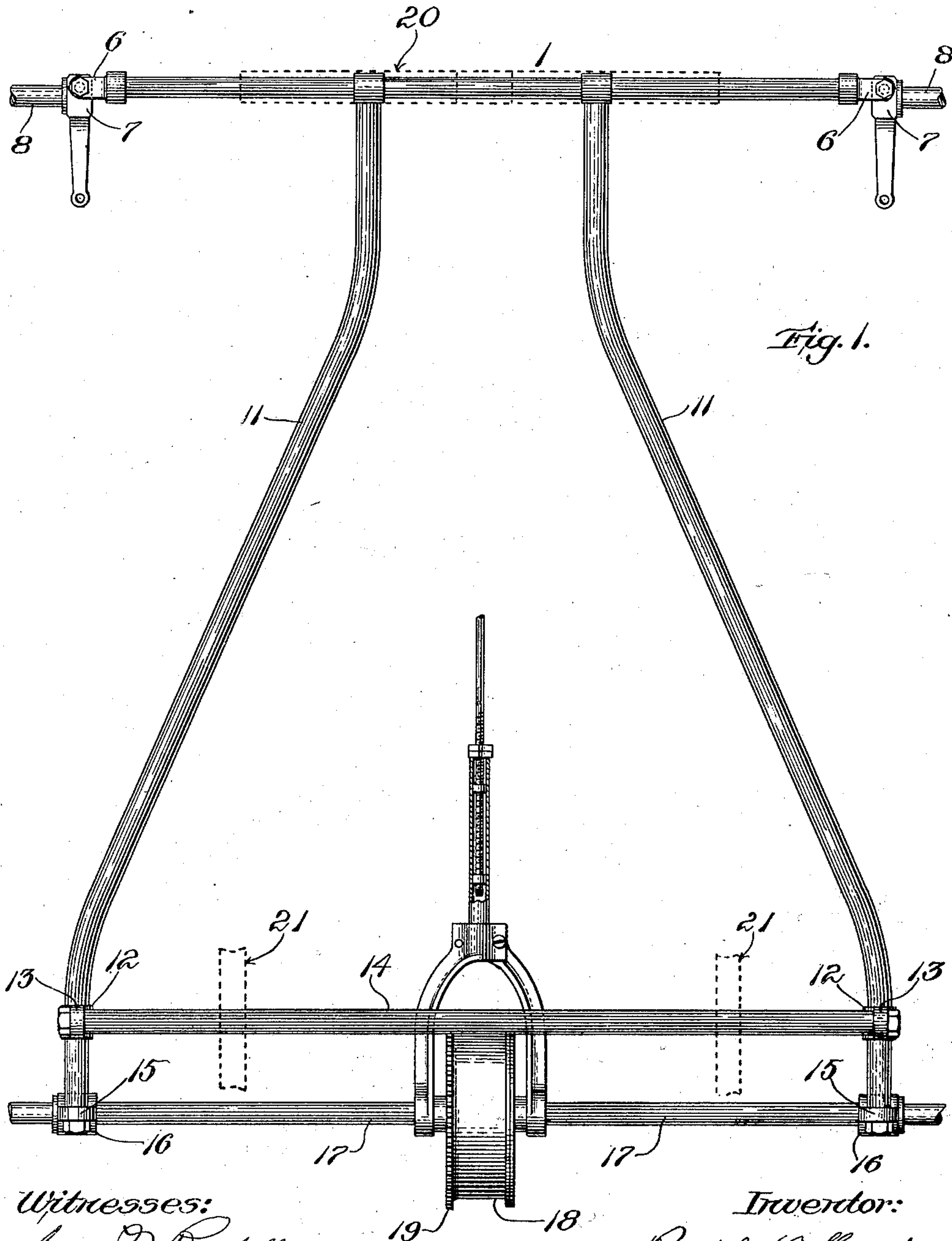
Patented Jan. 28, 1902.

R. O. HOOD.
FRAME FOR MOTOR VEHICLES.

(Application filed Feb. 28, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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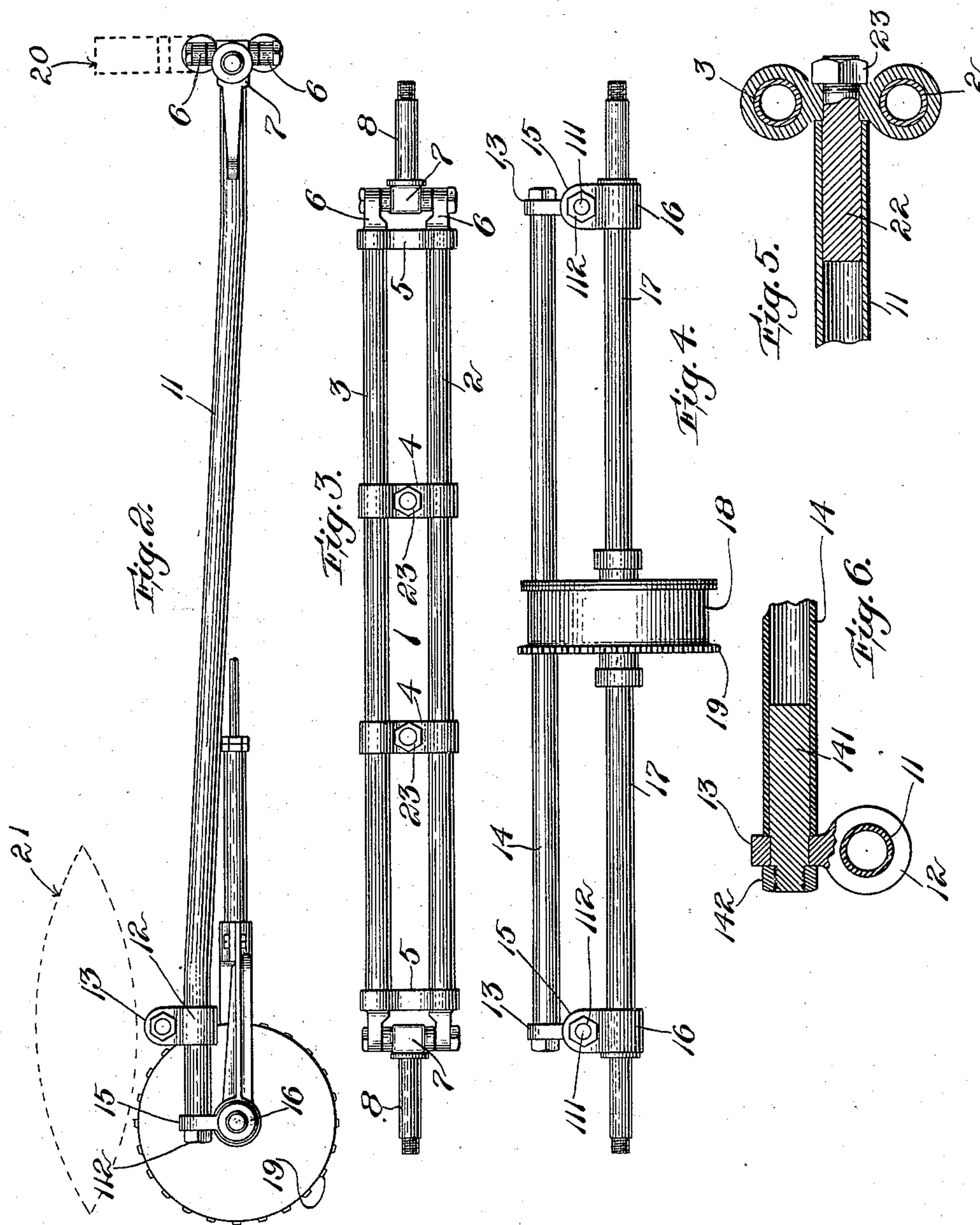
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UNITED STATES PATENT OFFICE.

RALPH O. HOOD, OF DANVERS, MASSACHUSETTS, ASSIGNOR TO SIMPLEX MOTOR VEHICLE COMPANY, OF DANVERS, MASSACHUSETTS, A CORPORATION OF MAINE.

FRAME FOR MOTOR-VEHICLES.

SPECIFICATION forming part of Letters Patent No. 691,945, dated January 28, 1902.

Application filed February 28, 1901. Serial No. 49,286. (No model.)

To all whom it may concern:

Be it known that I, RALPH O. HOOD, a citizen of the United States, residing at Danvers, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Frames for Motor-Vehicles, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its main object to provide an improved frame for vehicles, more especially adapted for use in connection with motor-vehicles, which shall be light, strong, and durable and which shall permit the respective wheels of the vehicle to follow the irregularities of a road-surface without causing injurious strains to be brought upon the frame.

Other objects of the invention will be disclosed in the course of the following description.

The invention consists in the novel and improved construction of frame which I now will proceed to describe, with the aid of the accompanying drawings, in which latter I have illustrated an embodiment of the invention.

In the drawings, Figure 1 shows the said embodiment in plan. Fig. 2 is a side elevation thereof. Fig. 3 is a front elevation thereof. Fig. 4 is a rear elevation thereof. Figs. 5 and 6 are views showing details.

Having reference to the drawings, my improved frame comprises, essentially, a transversely-extending front portion 1, two perches 11 11, and a rear cross-bar 14. The front portion 1 is made up of two tubes 2 3, placed parallel and one above the other, intermediate cross-pieces 4 4, and end pieces 5 5. The said cross-pieces and end pieces hold the said tubes fixedly at the required distance apart and are connected with the tubes by brazing. The end pieces are each furnished with upper and lower lugs 6 6, projecting outward parallel with each other, and between the two lugs of each end piece is mounted on a vertical pivotal axis a swiveling wheel-support 7. The forward extremity of each perch 11 has brazed therein a plug 22, Fig. 5, a portion of which projects beyond the end of the perch. This projecting portion of the plug is passed

through a hole or bearing in the middle of the corresponding intermediate cross-piece 4 and receives on its threaded extremity, in front of said cross-piece, a nut or nuts 23, by which it is prevented from withdrawing from said hole. Thereby each perch is pivotally connected with the front portion of the frame by joints permitting transverse swiveling movements in a manner which enables the perch and said front portion to swivel relatively to each other in a vertical plane and obviates tendency to twist or spring and rack the perches.

Upon the perches 11 11, adjacent their rear ends, are slipped and fastened by brazing the blocks 12 12, Fig. 6, having upturned lugs 13 13 with holes therethrough. Within the opposite ends of the tubular cross-bar 14 are secured by brazing plugs 141, Fig. 6, each having a projecting portion which passes through a hole in the corresponding lug 13 and receives upon its threaded extremity a nut 142, by means of which the parts may be fastened rigidly together. The rear ends of the tubular perches 11 11 have similar plugs 111 111 secured therein, the projecting portions of the said plugs being passed through holes in the upwardly-extending lugs 15 15 of blocks 16 16 and the said blocks being securely fixed to the said rear ends of the perches by nuts 112 112, applied to the threaded extremities of the said plugs. The blocks 16 16 contain bearings of any approved type and construction for the rear axle 17 of the vehicle. In the present instance the axle 17 is of the well-known divided character, with differential gearing (not shown) connecting the proximate ends of the two portions of the said axle. 18 is the usual brake-wheel, and 19 the sprocket-wheel which serves in the transmission of power to the said axle. By reason of connecting the blocks 16 16 with the perches 11 11 in the manner described they are rendered readily disconnectible from said perches, which enables said blocks and the rear axle to be removed bodily whenever required simply by detaching the blocks from the perches. The swiveling connection between the forward extremity of each perch and the front portion of the frame relieves the said perches and the joints connecting the same with the

said front portion from injurious torsional strains when the wheels of the vehicle pass over irregularities of surface.

The perches 11 11 incline or converge toward each other from points just in front of the cross-bar 14 to near their forward extremities, the latter and also their rear extremities being parallel, as shown best in Fig. 1. The said forward extremities connect with the front portion 1 of the frame at points at opposite sides of the middle of the length of the said front portion. The connection is made at points comparatively near the said middle, so as to give flexibility in a vertical direction to the frame, and yet the said points are sufficiently removed therefrom and separated from each other to enable the said perches to brace the front portion of the frame against strains acting horizontally at the outer ends of the said front portion, such as arise when one front wheel encounters an obstruction. I dispense with brace-rods, while at the same time my frame is practically rigid horizontally. The forward extremities of the perches connect with the intermediate cross-pieces 4 4 of the front portion of the frame at the same height as the outwardly-projecting spindles 8 8 of the wheel-mountings 7 7. The axis of revolution of the front wheels therefore intersects the said front extremities. The bearings for the rear axle 17, however, are hung below the rear ends of the perches, as has been described. For the purpose of preventing the front portion of the frame from becoming tilted forwardly in consequence of the greater elevation of the rear extremities of the perches, which tilting would occur if measures were not taken to prevent it, I form the greater portion of the length of the perches intermediate the front portion 1 of the frame and the blocks 12 at a slight incline to the extreme forward and rear portions of the perches, the inclination being just enough to compensate for the elevation of the rear portions of the perches above the rear axle.

The body (not shown) of the vehicle will in practice usually be mounted upon a transversely-extending spring 20, secured to the front portion 1 of the frame, and two springs 21 21, secured to the rear cross-bar 14, the said springs being indicated by dotted lines in Fig. 1.

What I claim is—

1. The improved frame for motor-vehicles, &c., comprising essentially, the front portion adapted to have connected therewith the front wheels of the vehicle and composed of upper and lower members and connecting-pieces, the perches connected with the connecting-pieces of said front portion adjacent the middle of

the latter and at opposite sides of said middle by joints permitting transverse swiveling movement, whereby vertical flexibility is secured and the frame is braced horizontally, and the cross-bar connecting the said perches adjacent their rear ends, substantially as described.

2. The improved frame for motor-vehicles, &c., comprising, essentially, the front portion adapted to have connected therewith the front wheels of the vehicle and composed of upper and lower members and connecting-pieces, the perches connected with connecting-pieces of the said front portion adjacent the middle of the latter and at opposite sides of the said middle by joints permitting transverse swiveling movement, whereby flexibility vertically is secured and the frame is braced horizontally, the rear ends of the perches having connected therewith bearings for the rear axle, and the cross-bar connecting the said perches adjacent their rear ends, substantially as described.

3. The improved frame for motor-vehicles, &c., comprising the front portion composed of upper and lower members and connecting-pieces, and the perches converging toward their forward extremities and pivotally connected at the latter with said connecting-pieces adjacent the middle of the said front portion, substantially as described.

4. The improved frame for motor-vehicles, &c., comprising the front portion composed of upper and lower members and the intermediate and end cross-pieces connecting the said members, the perches connected at their forward extremities by horizontal pivots with the said intermediate cross-pieces, the cross-bar connecting the rear extremities of the said perches, and the blocks applied to the said rear extremities, substantially as described.

5. The improved frame for motor-vehicles, &c., comprising the front portion composed of upper and lower members united by intermediate and end cross-pieces, wheel-supporting means applied to the end cross-pieces, the perches connected at their forward extremities with the middle portions of the intermediate cross-pieces, having the upwardly-inclined intermediate portions, and also having the blocks hung from their rear extremities, and the cross-bar connecting the said rear extremities, substantially as described.

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

RALPH O. HOOD.

Witnesses:

CHAS. F. RANDALL,
WM. A. MACLEOD.