

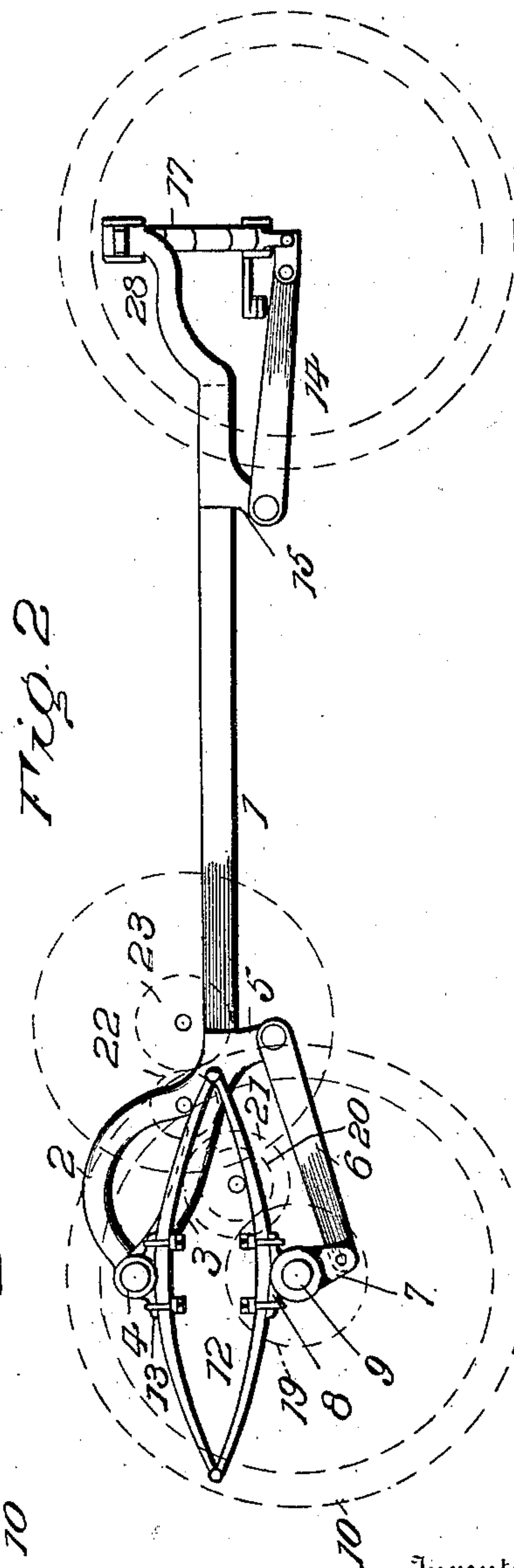
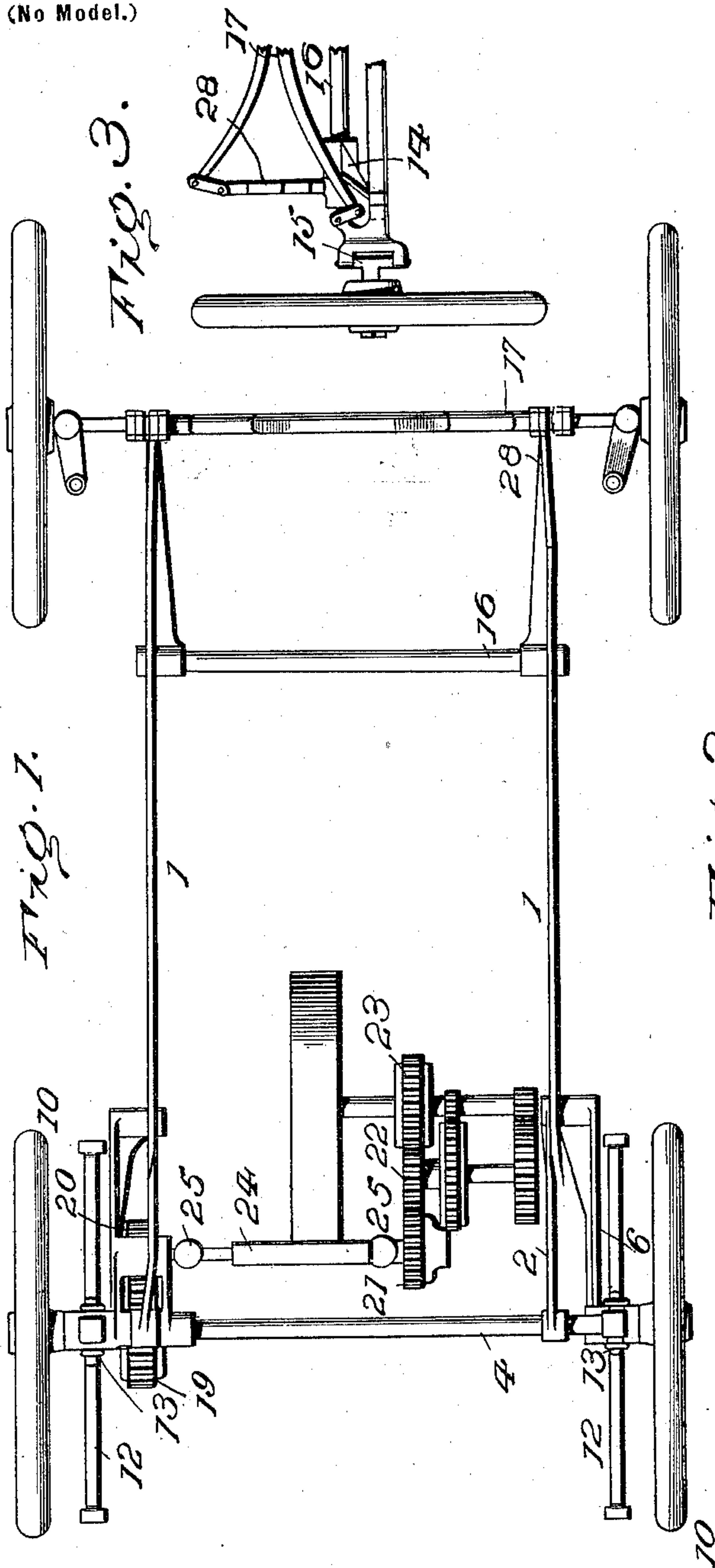
No. 692,064.

Patented Jan. 28, 1902.

J. F. McNUTT.
MOTOR VEHICLE.

(Application filed July 3, 1901.)

(No Model.)



Witnesses

John F. McNutt
John F. McNutt

Inventor
John F. McNutt

By

John F. McNutt
Attorney

UNITED STATES PATENT OFFICE.

JOHN FRANKLIN McNUTT, OF CINCINNATI, OHIO.

MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 692,064, dated January 28, 1902.

Application filed July 3, 1901. Serial No. 67,049. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANKLIN McNUTT, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain
5 new and useful Improvements in Motor-Vehicles; and I do hereby 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
10 use the same.

This invention relates to automobile frames and the connection between the equalizing-gear and the transmission-train.

The primary object is to so construct the
15 frame that it will be strong and durable without using braces or direct connections between the axles, and the gearing-wheels will be kept in proper and certain alinement, preventing any displacement by the torque of
20 the pinion driving the differential.

A further object is to provide a connection between the equalizing-gear and the transmission-train which will be strong and substantial and avoid all noise, jerk, or sudden
25 pull on the driving mechanism as the carriage-frame rises and falls in going over rough roads.

The invention will be hereinafter fully set forth, and particularly pointed out in the
30 claims.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a side elevation, parts being shown in dotted lines. Fig. 3 is a front end view with parts broken away.

Referring to the drawings, 1 designates the
35 two side bars of the frame, each at its rear end having an upper overhanging downwardly-curved arm 2 and a lower upwardly-extended arm 3. Through the ends of these
40 two arms is passed a tube or rod 4, which is arranged transversely of the frame. To a lower short arm 5 is jointed a brace-bar 6, which at its other end is pivoted to an arm 7, depending from a bearing-block 8. Within
45 the two bearing-blocks fits the axle 9 of the rear carrying-wheels 10.

12 designates the rear springs, of elliptical formation, bolted to blocks 13 on the ends of
50 tube 4 and to the bearing-blocks 8 in direct vertical line.

At the front of the frame each side bar is equipped with a brace-bar 14, corresponding

to the brace-bars 6. They are jointed to short depending arms 15 by a cross-tube 16 and at their lower forward ends are pivotally con- 55 nected to the front axle, to which also is connected the lower branch of the front spring 17, this latter being in the form of a reversed elliptic arranged transversely of the frame. The extreme forward end of each side bar is 60 carried upward at 28 and secured to the ends of the upper branch of spring 17. By this construction the alinement of the wheels is made certain, and the frame is strong and durable and is free from all braces or connections 65 directly between the axles of the front and rear carrying-wheels. The brace-bars 6 and springs 12 provide against any undue strain by the torque of the pinion driving the differential, which is taken up by the bearing- 70 block 8 adjacent thereto.

19 is the differential or equalizing gear-wheel on the rear axle. It is driven by the spur-pinion 20, and 21 is a gear-wheel driven by the gear-wheels 22 and 23 of the transmis- 75 sion-train of the motor. The shafts of pinion 20 and wheel 21 are substantially parallel with the rear axle and are connected by a flexible shaft 24, having suitable universal joints 25, by which the said pinion and wheel 80 are positioned in line when the carriage has its normal load; but the joints and flexible shaft will allow of any elevation or depression or other displacement of the gear-wheel 21 within the range of movement allowed by the 85 springs. Thus in lieu of the ordinary chain or beveled gear universal-joint device I employ strong and substantial spur-gearing, thereby eliminating all jerks or sudden pull on the driving mechanism as the carriage- 90 frame moves up and down in traveling over rough ground.

I claim as my invention—

1. In a motor-vehicle, the combination with the carrying-wheels, their axles, and the 95 springs, of the longitudinal side bars, forward and rearwardly extended brace-bars secured each at one end to one of the side bars and at its other end having a pivot connection with one of the axles, said side bars being 100 connected to said springs in vertical line with the connections between the brace-bars and axles, substantially as set forth.

2. In a motor-vehicle, the combination with

the carrying-wheels, their axles, and the springs mounted above the latter, of the frame having longitudinal side bars, forward and rearwardly extended brace-bars secured to
5 said side bars, connections between said brace-bars, the axles and the springs, and connections between said side bars and the springs, substantially as set forth.

3. In a motor-vehicle, the combination with
10 the carrying-wheels, their axles, and the springs mounted above the latter, of the longitudinal side bars having forward and rearward extensions connected at their ends to said springs, forward and rearwardly extended brace-bars secured to said side bars,
15 and connections between said brace-bars, the axles and the springs in vertical line with the connections between the side bars and the springs, substantially as set forth.

4. In a motor-vehicle, the combination with the carrying-wheels, their axles, the two rear springs and the front spring mounted above the latter, of the side bars, a cross rod or tube secured to said side bars and to the two rear
20 springs, a second cross rod or tube between said side bars, said latter cross rod and the side bars being connected to the front spring, substantially as set forth.

5. In a motor-vehicle, the combination with
30 the carrying-wheels, their axles, and the rear springs, of the side bars having rearwardly-extended arms, connections between said arms and the rear springs, rearwardly-extended brace-bars secured to said side bars, and
35 means pivotally connecting said brace-bars to said springs in line with the connection of the rearwardly-extended arms, substantially as set forth.

6. In a motor-vehicle, the combination with
40 the carrying-wheels, their axles, and the rear springs, of the side bars having rearwardly-extended arms, a cross-rod to which said arms are secured, means connecting said cross-rod to said springs, rearwardly-extended brace-
45 bars secured to said side bars, and bearings for the rear axle having depending arms to which said brace-bars are pivotally connected, substantially as set forth.

7. In a motor-vehicle, the combination with
50 the carrying-wheels, their axles, the two rear springs and the front spring, of the side bars having rearwardly-extended arms, a cross-rod to which such arms are secured, said cross-rod being attached to said rear springs, the rear-
55 wardly-extended brace-bars secured to said side bars, bearings for said rear axle having depending arms to which said brace-bars are pivoted, and connections between said side

bars, the front spring and the front axle, substantially as set forth. 60

8. In a motor-vehicle, the combination with the carrying-wheels, their axles, and the front and rear springs, of the side bars having forward extensions secured to said front spring, forwardly-extended brace-bars secured to
65 said side bars and the front axle and the front spring, and means connecting said side bars to said rear springs and to the rear axle, substantially as set forth.

9. In a motor-vehicle, the combination with
70 the carrying-wheels, their axles, the rear springs, and the front spring, of the side bars having rearwardly-extended arms, a cross-rod secured to such arms and to said rear springs, rearwardly-extended brace-bars secured to
75 said side bars, bearings for the rear axles having depending arms to which said brace-bars are pivoted, said side bars at their forward ends being secured directly to said front spring, a forward cross-rod, forwardly-ex-
80 tended brace-bars secured to said latter cross-rod and at their free ends to the front axle and the front spring, substantially as set forth.

10. In a motor-vehicle, the combination with the rear carrying-wheels, their axle, and
85 the bearing-blocks therefor having depending arms, of the side bars having rearwardly-extended brace-bars pivoted to said depending arms, the equalizing gear-wheel on such axle adjacent to one of said bearing-blocks,
90 the transmission-train and gearing between the latter and said equalizing gear-wheel, substantially as set forth.

11. In a motor-vehicle, the combination with the carrying-wheels, their axles, and the
95 springs, of the longitudinal side bars, means connecting such side bars to the springs and to the axles, the equalizing spur gear-wheel on the rear axle adjacent to the point of connection of one of the side bars, the transmis-
100 sion-train having the shaft of the transmission gear-wheel thereof substantially parallel with said axle, the operating spur gear-pinion meshing with the equalizing spur gear-wheel and having its shaft paralleling said
105 axle, and the flexible shaft connecting the shafts of the spur gear-pinion and the driven gear-wheel, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib-
110 ing witnesses.

JOHN FRANKLIN McNUTT.

Witnesses:

W. R. WOOD,
OLIVER B. KAISER.