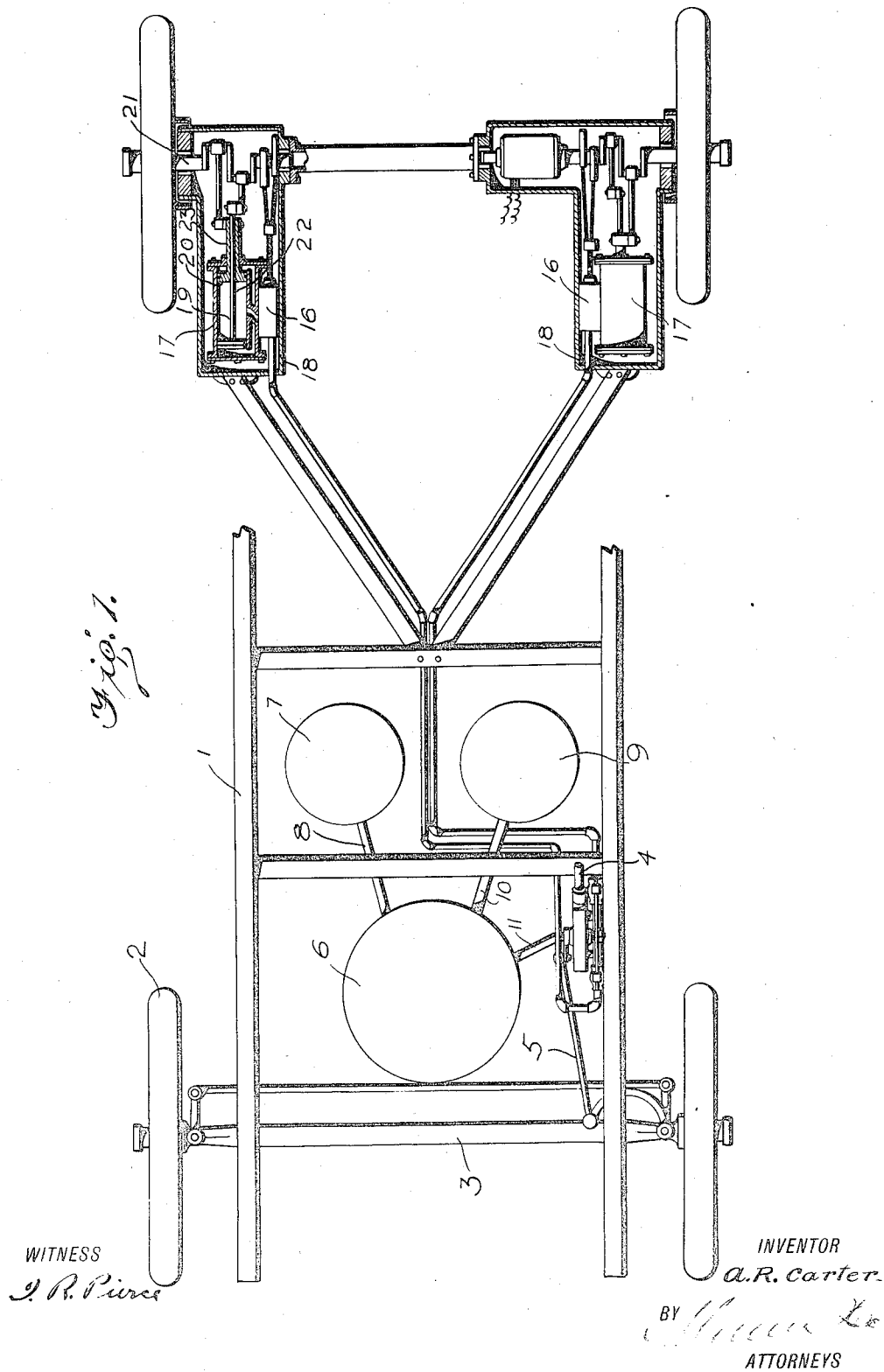


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APPLICATION FILED JULY 12, 1918.

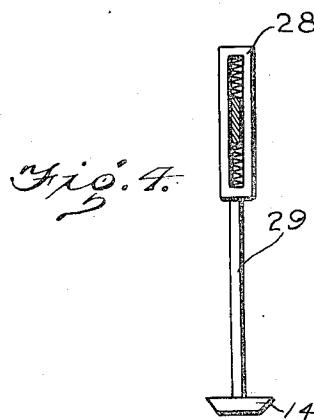
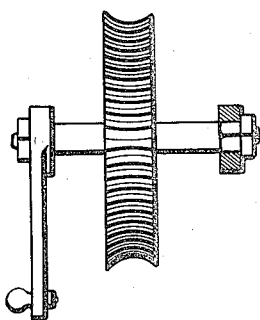
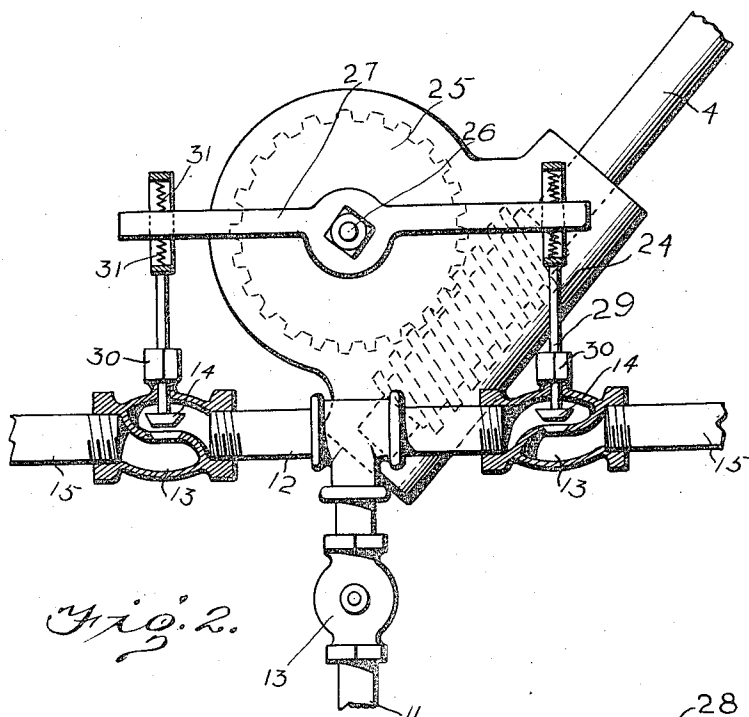
Patented Feb. 11, 1919.
2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MOTOR-VEHICLE.

1,293,702.

Specification of Letters Patent.

Patented Feb. 11, 1919.

Application filed July 12, 1918. Serial No. 244,654.

To all whom it may concern:

Be it known that I, ARTHUR R. CARTER, a citizen of the United States, and a resident of Hammond, in the parish of Tangipahoa and State of Louisiana, have invented certain new and useful Improvements in Motor-Vehicles, of which the following is a specification.

My invention is an improvement in motor vehicles, and relates to vehicles of the steam driven type, wherein each rear wheel is connected directly with a pair of reciprocating pistons, and wherein a boiler is provided for supplying steam to the pistons, the supply being controlled by the steering of the vehicle to enable a differential to be dispensed with.

In the drawings:

Figure 1 is a plan view of the frame of the vehicle provided with the improvement;

Fig. 2 is a vertical section through the controlling mechanism;

Fig. 3 is a front view of the worm wheel;

Fig. 4 is a view of one of the valves and its connections.

The present embodiment of the invention is shown in connection with the frame 1 of a motor vehicle, the said frame having the usual front wheels 2 pivoted to the front axle 3 and arranged to be controlled by a steering shaft 4 which is connected with the front wheels in the usual manner, the connection being indicated at 5.

A boiler 6 is provided, this boiler being supplied with water from a tank 7 by means of a pipe 8, and the boiler is heated by liquid fuel supplied from the reservoir 9 through a pipe 10, the said pipe being suitably controlled to properly feed the fuel. The steam generated passes from the boiler by way of a steam line 11, and this line connects with a section 12 of pipe, having at each end a valve casing 13, the pipe 11 connecting to the section 12 at the center thereof, and a throttle 13 is interposed in the pipe 11 adjacent to the pipe 12 for controlling the flow of steam to the pipe 12.

A valve 14 is arranged in each of the casings 13, and from the outer end of each valve casing 13 pipes 15 lead to the steam chests 16 of cylinders 17 arranged adjacent to the rear axle and perpendicular thereto. Each cylinder and steam chest is supported in a suitable casing 18, and pistons 19 and 20 are arranged in each cylinder, and each piston is

connected to a crank on the adjacent rear axle section 21 by means of links 22 and 23, respectively.

As shown, the link 23 is hollow, and the link 22 extends through the bore of the link 23. A valve (not shown) is provided in each valve or steam chest 16 for controlling the flow of steam to the cylinder, and each valve is operated by a pair of eccentrics on the adjacent axle section, the eccentrics and connections constituting the usual link motion for permitting the engine to be reversed.

The cranks of each axle section are oppositely arranged and the pistons 19 and 20 move in opposite directions. Thus it will be seen that each axle section is driven independently of the other, and mechanism is provided for controlling the supply of steam to the cylinders or engine controlled by the movement of the steering shaft 4. As shown in Fig. 2, the lower end of the steering shaft has a worm 24, and this worm is in mesh with a worm wheel 25 on a shaft 26 journaled adjacent to the steering shaft and in front of the same. To one end of the said shaft is secured a cross head 27 and the ends of the cross head extend through loops 28 connected to the valves 14 by means of stems 29. Each of the stems 29 is slidable through a stuffing box 30 in the top of the valve casing, and a pair of coil springs 31 is arranged between each end of the cross head 27 and the ends of the loops.

In operation, when the driver swings the steering wheel to turn to the left, for instance, the valve controlling the steam supply to the cylinder at the left of the vehicle will be closed, thereby cutting off power to the engine on the left, and the differential effect produced by the absence of power to the wheel on the inside of the curve will result. When turning to the right, it is the steam supply of the engine at the right that is cut off. Hence in whichever direction the steering wheel turns, the steam supply of that wheel toward which the vehicle turns will be cut off.

I claim:

In a motor vehicle, the combination with the sectional rear axle, of a steam engine arranged adjacent to each section and connected therewith to operate the same, a boiler for supplying the steam to the engines and connected with the engines, means

controlled by the steering of the vehicle for
controlling the supply of steam to the en-
gines, said means comprising a valve casing
interposed in each connection between the
5 boiler and the engines, a worm wheel, a worm
on the steering shaft meshing with the
worm wheel, and a cross head secured to the
axis of the worm wheel and connected at its
ends with the valves.

ARTHUR RICHARD CARTER.

Witnesses:

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