

No. 832,214.

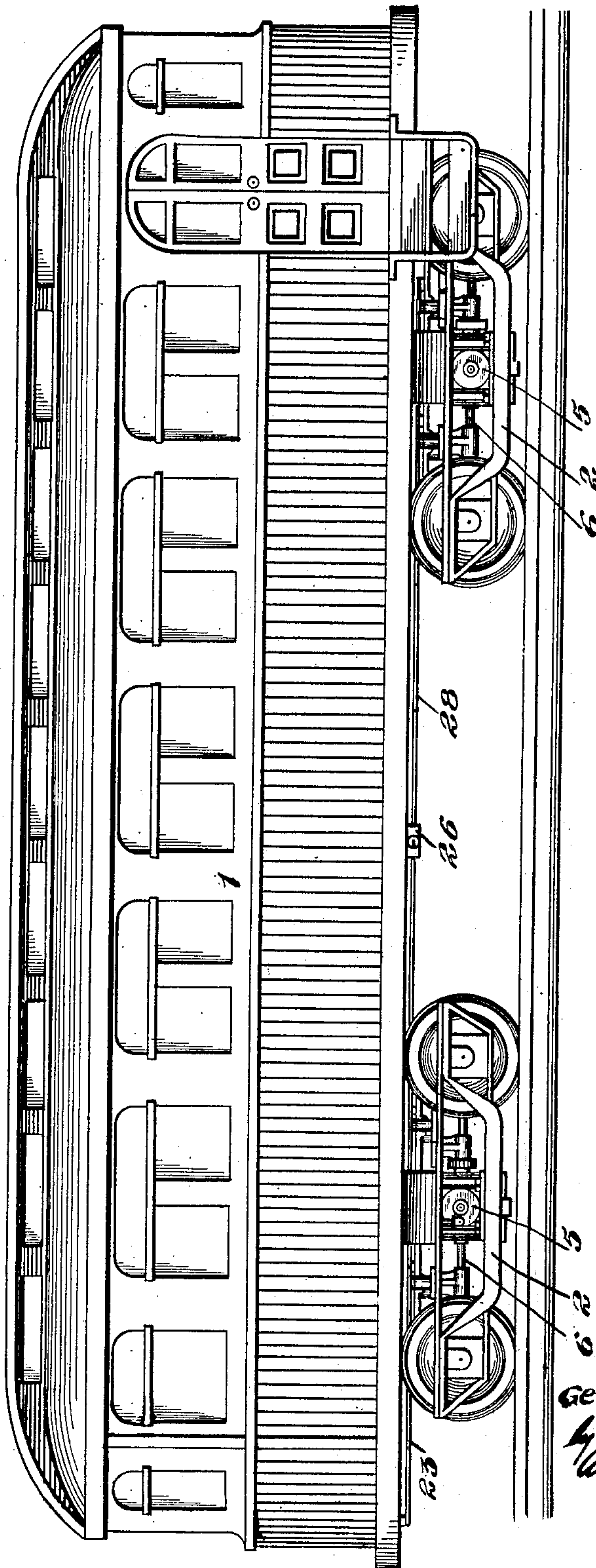
PATENTED OCT. 2, 1906.

G. G. SCHROEDER.
MOTIVE POWER FOR TRACTION VEHICLES.

APPLICATION FILED AUG. 22, 1905.

5 SHEETS—SHEET 1.

Fig. 1



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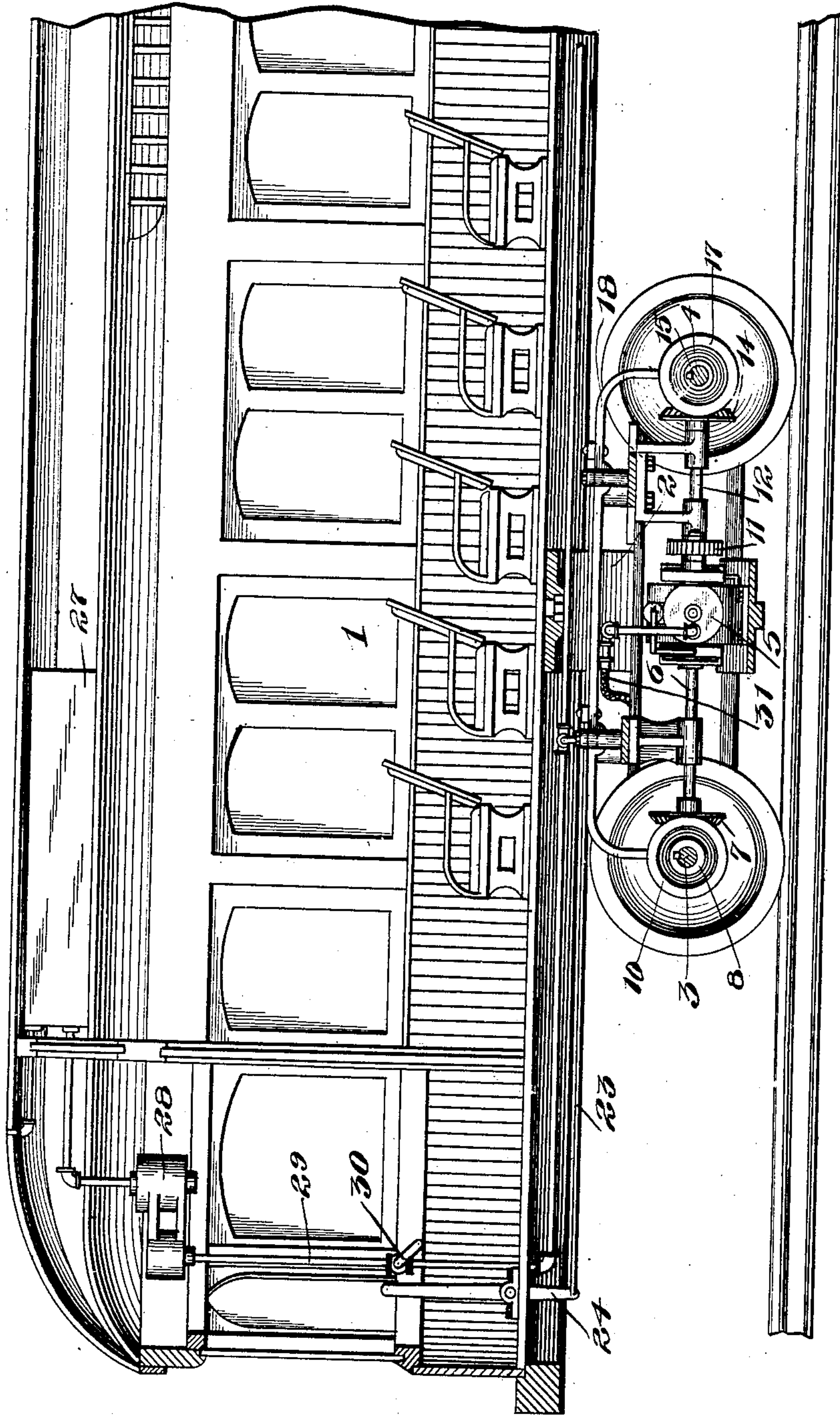
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5 SHEETS—SHEET 2.

Fig. 2.



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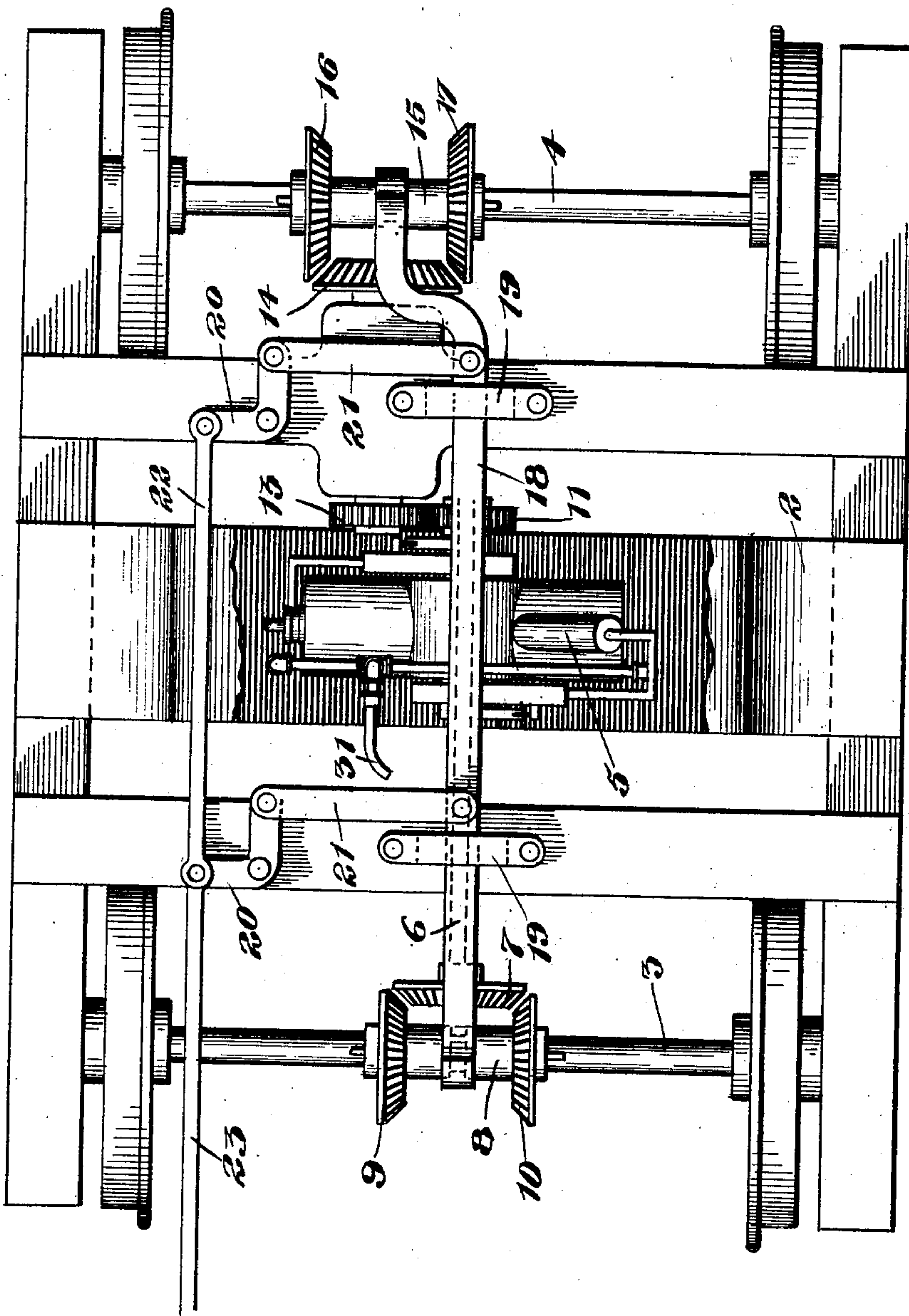
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5 SHEETS—SHEET 3.

Fig. 3.



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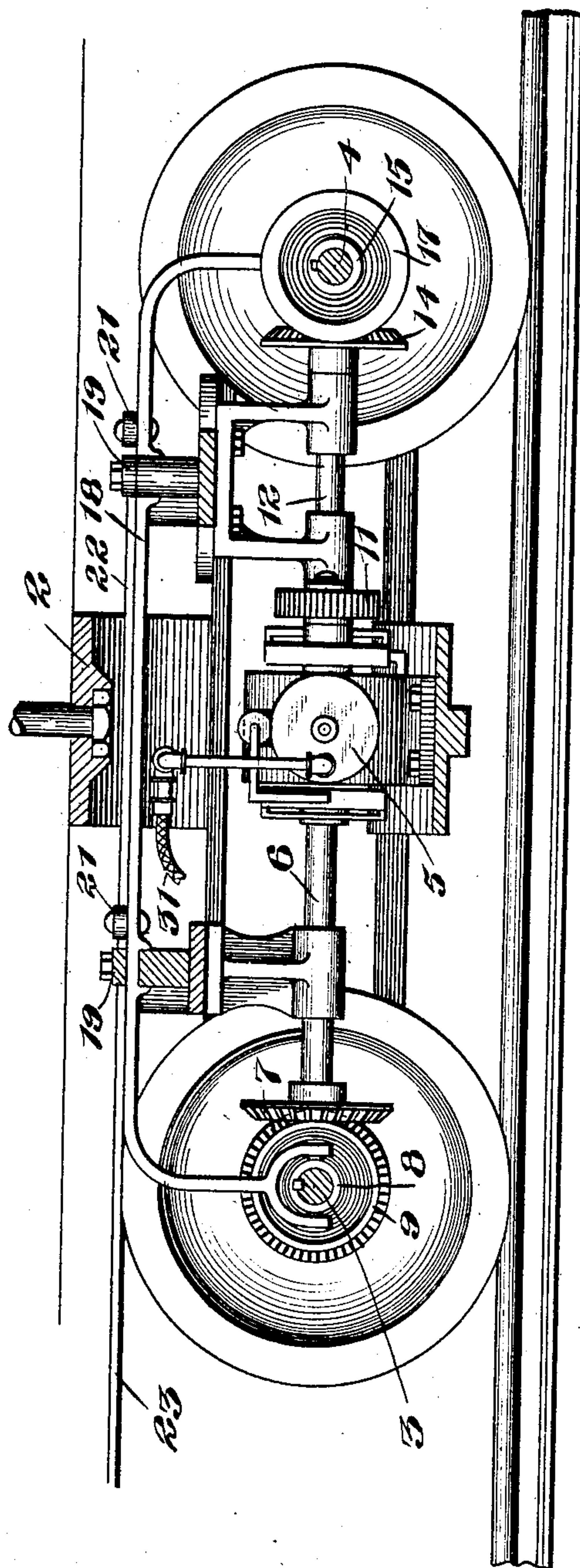
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5 SHEETS—SHEET 4.

Fig. 4.



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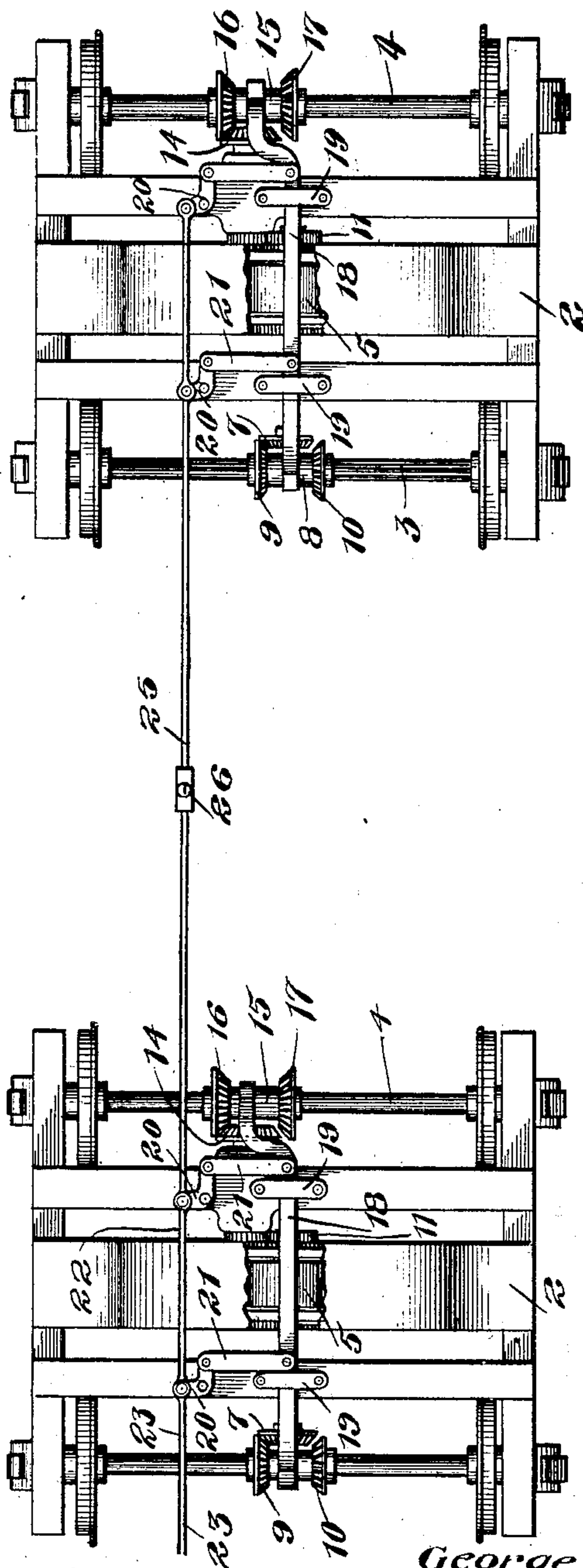
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

GEORGE G. SCHROEDER, OF WASHINGTON, DISTRICT OF COLUMBIA.

MOTIVE POWER FOR TRACTION-VEHICLES.

No. 832,214.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed August 22, 1905. Serial No. 275,332.

To all whom it may concern:

Be it known that I, GEORGE G. SCHROEDER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Motive Power for Traction-Vehicles, of which the following is a specification.

This invention has relation to motive power for traction-vehicles; and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of this invention is to provide a motive power for traction or street cars or other vehicles that have trucks pivoted to the bodies thereof. The said trucks are usually so pivoted as to swing in a horizontal plane with relation to the body of the vehicle in going around curves, and in the present invention the engine which constitutes the motive power is mounted upon the truck and moves with the same. The fuel-supply for the engine is mounted upon the body of the car and moves therewith. There is a suitable connection between the engine and the source of fuel-supply whereby the engine may be furnished the necessary fuel while the car is going around a curve or traveling upon straight track. The engine is operated from the body of the car. Preferably each truck of the car is equipped with an engine, so that all of the wheels of the car may be made tractors, if desired, or the car may be run with one engine alone, if one engine is sufficient for propulsion at the required speed.

The engine is so mounted and connected with the axles of the truck as to permit the car to move in either direction. The gearing between the engine-shaft and the axles is such that the power of the engine is applied to both of the axles of the truck at the same time.

In the accompanying drawings, Figure 1 is a side elevation of a car provided with my present system of motive power. Fig. 2 is a vertical sectional view of the forward end of a car provided with the motive power. Fig. 3 is a top plan view of a truck, showing the location of the propelling-engine thereon. Fig. 4 is a vertical sectional view of the truck, showing the location of the engine thereon; and Fig. 5 is a top plan view of the front and rear trucks of the car, showing parts thereof broken away.

The car-body 1 is pivotally mounted upon the trucks 2 2 in the usual manner. Each said truck 2 is provided with a front axle 3

and a rear axle 4. The rotary hydrocarbon-engine 5 is mounted upon the truck and is located between the axles 3 and 4. The shaft 6 of the said engine is in the same horizontal plane as the said axles and extends at right angles thereto. One end of the said engine-shaft 6 is provided with a beveled gear-wheel 7, which is located in alinement with the middle of the forward axle 3. The sleeve 8 is feathered on the axle 3 and is provided at each end with a beveled gear-wheel, such as 9 and 10. The beveled gear-wheel 7 is adapted to mesh with either of the beveled gear-wheels 9 or 10, or the last said wheels may be so moved as to leave the gear-wheel 7 in such a position as to be in mesh with either of the wheels 9 or 10, as indicated in Fig. 3.

The opposite end of the engine-shaft 6 is provided with a gear-wheel 11. The short shaft 12 extends back parallel to the shaft 6, but is located to one side of the same. The forward end of the shaft 12 is provided with a gear-wheel 13, which meshes with the gear-wheel 11. The rear end of the said shaft 12 is provided with a beveled gear-wheel 14. The sleeve 15 is feathered upon the rear axle 4 and is provided at each end with a beveled gear-wheel, such as 16 and 17. The said sleeve 15 and the gear-wheels 16 and 17 may be so shifted upon the axle as to bring either of the wheels 16 or 17 in mesh with the gear-wheel 14, or the said wheels 16 and 17 may be so moved as to bring both of them out of engagement with the gear-wheel 14, as shown in Fig. 3. The bar 18 is located above the truck 2, and one end of said bar extends down and engages the sleeve 8, and the other end of said bar extends down and engages the sleeve 15. The said bar is adapted to move laterally under the guides 19 19, carried by the truck, and as the said bar is moved in such manner either the gear-wheels 10 and 17 are brought into mesh with the gear-wheels 7 and 14 or the gear-wheels 9 and 16 are brought into mesh with the said gear-wheels 7 and 14.

The shaft 6 of the engine 5 rotates in one direction only, and when the vehicle is going in a forward direction the gear-wheels 10 and 17 are brought into mesh with the gear-wheels 7 and 14. When the vehicle is moved in the opposite direction, the gear-wheels 9 and 16 are brought into mesh with the gear-wheels 7 and 14. When the engine-shaft 6 is in rotation and it is desired that the axles 3

and 4 remain at rest, the sleeves 8 and 15 are moved into the positions as shown in Fig. 3, when none of the said gear-wheels are in mesh.

5 The bell-crank levers 20 20 are fulcrumed upon the truck 2, and one end of each said lever is connected by a link 21 with the bar 18. The rod or link 22 connects the other ends of the said bell-crank levers together, 10 and the rod 23 extends forward from the front bell-crank lever 20 and is connected at its forward end to the lower end of the lever 24, which is fulcrumed to the body 1 of the car or vehicle. By the manipulation of the 15 said lever 24 the bar 18 and its attachments are operated as above indicated.

The above description applies to the forward truck of the vehicle and its attachments. The rear truck of the vehicle is provided with similar parts and is of the same 20 arrangement. The bell-crank levers of the rear truck are connected with the bell-crank levers of the forward truck by means of the rod 25, so that the engine of the rear truck 25 may be reversed at the same time as the engine of the forward truck is reversed. The rod 25 is provided with a joint or knuckle 26, which allows for the difference of alignment of the two trucks when going around curves.

30 The oil-tank 27 is located, preferably, in the roof of the body 1 of the car. The said oil-tank is suitably connected with the carbureter and mixer 28, which is also carried by the body of the car. The pipe 29 extends 35 down from the carbureter and mixer 28 and is provided with a valve 30. The said pipe then extends under the floor of the body 1 of the car and is connected with each engine 5 by means of the flexible pipe 31. In this 40 manner the fuel-supply is carried by the body of the car and is transmitted to the engines upon the trucks.

The arrangement thus shown and described leaves the body of the car virtually 45 clear for carrying capacity, either passengers or freight, and so mounts the engines and fuel-supply as not to be in the way and at the same time to be so located as to be of great efficiency.

50 Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A traction-vehicle having a pivoted truck, an engine located upon the truck, and 55 geared to the axle thereof, and means located upon said axle for reversing the rotary movement from the engine to the axle, and a fuel-

supply located upon the body of the vehicle, and being connected with said engine.

2. A traction-vehicle having a pivoted 60 truck, an engine located upon the truck, and geared to the front and rear axles thereof, and a means located upon said axles, whereby the rotary movement from the engine-shaft to the said axles may be reversed simultaneously, and a fuel-supply located upon 65 the body of the vehicle, and being connected with said engine.

3. A traction-vehicle having a pivoted truck, a rotary engine located upon the truck, 70 and geared to the axle thereof, and means located upon said axle for reversing the rotary movement from the engine to the axle, and a gas-fuel supply located upon the body of the vehicle. 75

4. A traction-vehicle having a pivoted truck, a rotary engine located upon the truck, and geared to the front and rear axles thereof, and a means located upon said axles 80 whereby the rotary movement from the engine-shaft to the said axles may be reversed simultaneously, and a gas-fuel supply located upon the body of the vehicle, and being connected with said engine.

5. A traction-vehicle having a plurality of 85 trucks each provided with axles, an engine mounted upon each truck, gearing connecting each engine with the axles of its respective truck, and means for shifting a portion of the connecting-gearing of each truck to simultaneously reverse the movement of the 90 axles of all of said trucks.

6. A traction-vehicle having a plurality of pivoted trucks each provided with axles, an engine mounted upon each truck, gearing 95 connecting each engine with the axles of its respective truck, and means for shifting a portion of the connecting-gearing of each truck to simultaneously reverse the movement of the axles of all of the trucks. 100

7. A traction-vehicle comprising a truck having axles, an engine mounted upon the truck, gearing mounted upon each axle, gears on the engine-shaft for imparting motion to the axle-gearing, a bar connected to 105 the axle-gearing, and means for shifting said bar, whereby said axle-gearing is shifted to reverse the movement of the axles.

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

GEORGE G. SCHROEDER.

Witnesses:

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