

No. 810,261.

PATENTED JAN. 16, 1906.

P. L. CANTELOU.
STEERING GEAR FOR TRACTION ENGINES.

APPLICATION FILED JUNE 26, 1905.

2 SHEETS—SHEET 1.

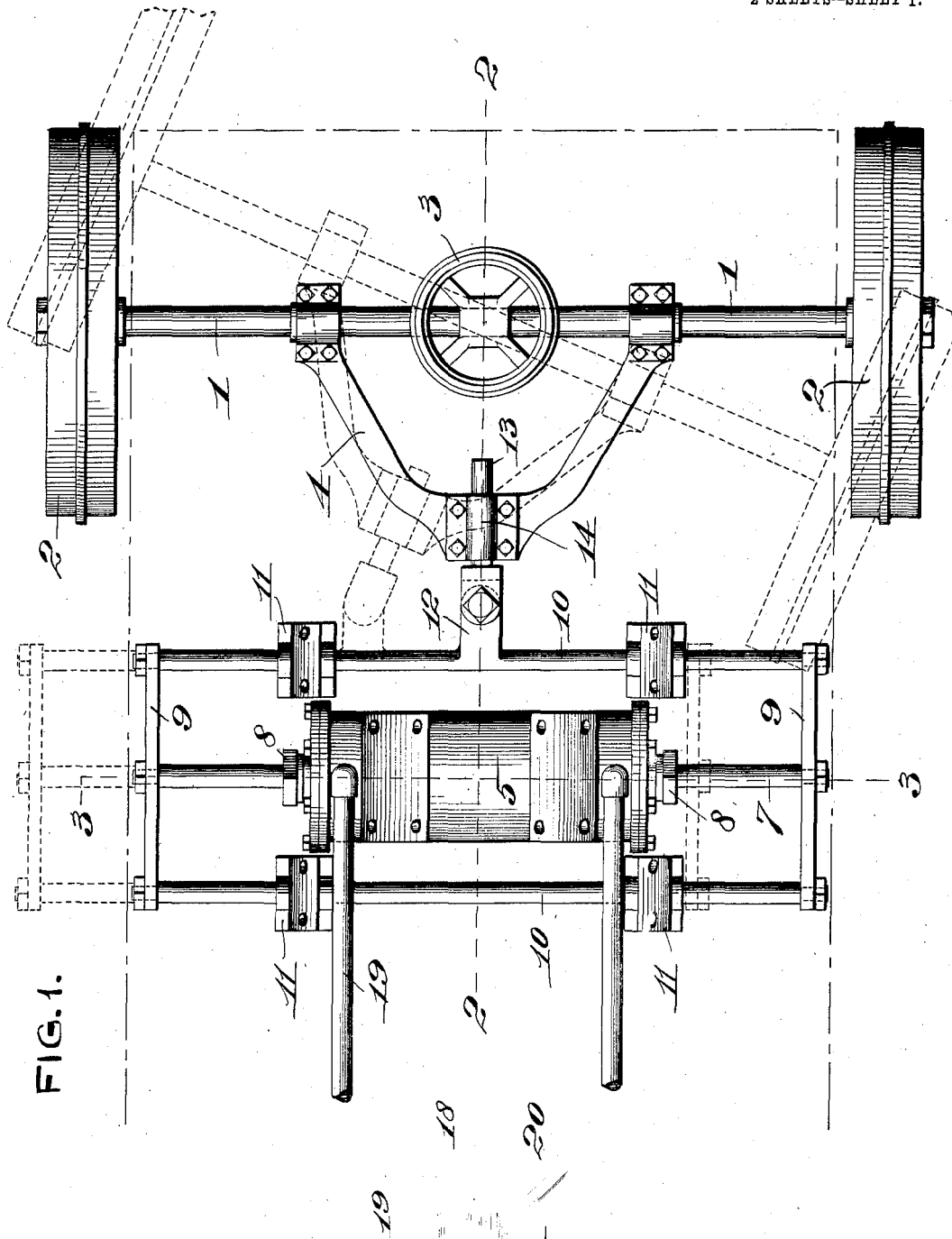


FIG. 1.

WITNESSES:—

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INVENTOR:—

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ATTY'S

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FIG. 2.

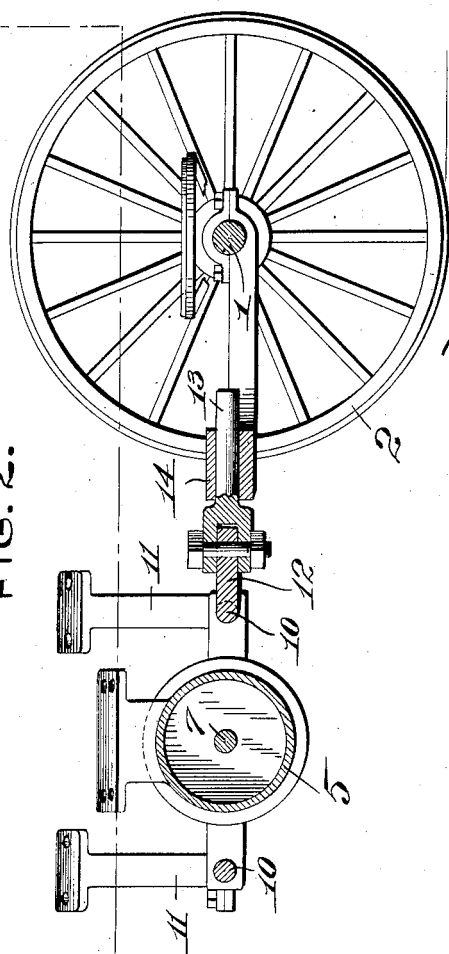


FIG. 4.

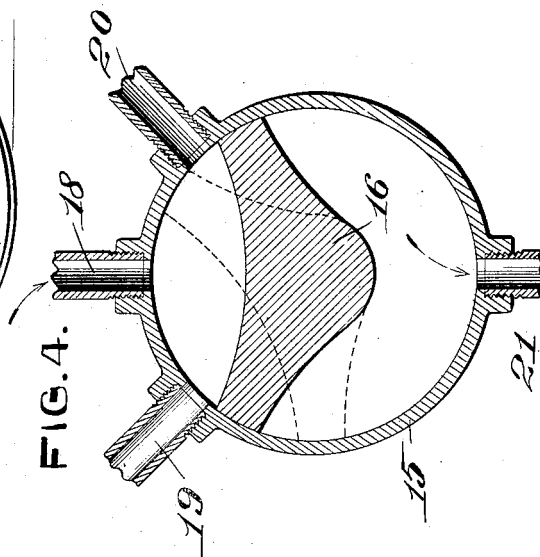
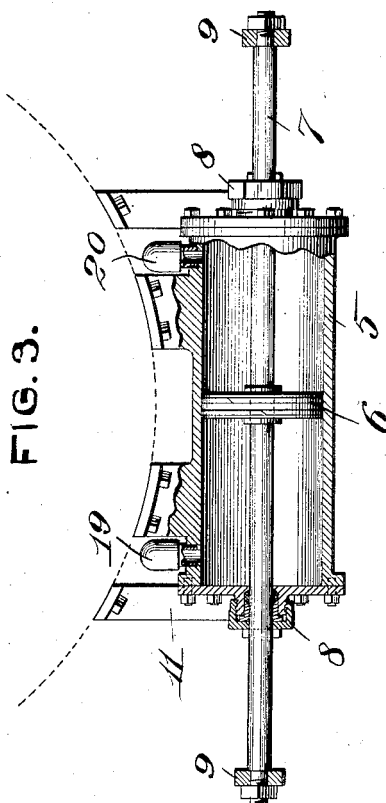


FIG. 3.



ATTEST:—

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UNITED STATES PATENT OFFICE.

PETER LOUIE CANTELOU, OF HILLSBORO, TEXAS.

STEERING-GEAR FOR TRACTION-ENGINES.

No. 810,261.

Specification of Letters Patent.

Patented Jan. 16, 1906.

Application filed June 26, 1905. Serial No. 267,161.

To all whom it may concern:

Be it known that I, PETER LOUIE CANTELOU, a citizen of the United States, and a resident of Hillsboro, Hill county, Texas, have
5 invented certain new and useful Improvements in Steering-Gear for Traction-Engines, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying
10 drawings, forming a part hereof.

My invention relates to a steering-gear for traction-engines; and the object of my invention is to construct a simple, inexpensive, and easily-operated steering-gear for traction
15 or road engines, road-rollers, and all self-propelling vehicles driven by steam and adapted for use on roads and highways.

My invention consists in a steam-cylinder rigidly secured to the under side of the boiler
20 to the rear of the front axle of the traction-engine and suitable connections from said cylinder to said axle.

My invention further consists in a suitable valve located convenient to the operator and
25 connections from said valve to the steam-cylinder, whereby steam is admitted to each end of the cylinder for shifting the gearing that is connected to the front axle to the engine.

30 My invention further consists in certain novel features of construction and arrangement of parts, that will be hereinafter more fully shown, described, and claimed.

In the drawings, Figure 1 is a plan view of
35 the front wheels and axle of a traction-engine and showing my improved steering-gear attached thereto, and the front end of the boiler being shown in dotted lines. Fig. 2 is a longitudinal section taken on the line 2 2
40 of Fig. 1. Fig. 3 is a transverse section taken on the line 3 3 of Fig. 1. Fig. 4 is an enlarged section of the three-way valve I make use of in my improved steering-gear.

Referring by numerals to the accompanying
45 drawings, 1 indicates the front axle of a traction-engine or similar vehicle, on the ends of which are arranged the traction-wheels 2. To the center of the axle 1 is secured the usual fifth-wheel 3, and secured to said axle on each side of this fifth-wheel are
50 the forward ends of a yoke 4. Bolted to the under side of the boiler of the traction-engine immediately behind the axle 1, is a transversely-arranged cylinder 5, in which operates a piston 6, and the piston-rod 7 therefor

projects outwardly through stuffing-boxes 8, located in the heads of the cylinder 5. Bolted to the end of the piston-rod 7 are cross-heads 9, that are bolted at either end to the
60 transverse rods 10, that occupy positions immediately in front of and behind the cylinder 5. These rods 10 are arranged to slide through bearings 11, that are bolted to the under side of the boiler. The forward one of these rods 10 is provided with a centrally-
65 arranged integral arm 12, that is pivotally secured to the rear end of a pin 13, that is arranged to slide through a bearing 14, formed in the rear end of yoke 4.

15 indicates a cylinder-valve casing, in
70 which is arranged to rotate a valve 16, the same being operated by a handle 17. Leading into the center to the front side of the valve-casing 15 is a steam-supply pipe 18, that leads the steam from the boiler to the
75 valve. Leading from the cylinder 15 on each side of the pipe 18 are the steam-pipes 19 and 20, that lead to the ends of the cylinder 5. Leading outwardly from the cylinder
80 15, opposite from the inlet-pipe 18, is an exhaust-pipe 21.

The valve 16, that operates within the cylinder 15, is so connected that the inlet 18 and the pipes 19 and 20 are open at the same
85 time, so that steam entering through the pipe 18 passes in both directions through the pipes 19 and 20 into the cylinder 5 on opposite sides of the piston 6 therein.

When the valve 16 is rotated the proper distance in either direction, the ends of the
90 wings of the said valve will pass by either one of the pipes 19 and 20, and as a result the opposite pipe will be in communication with the inlet-pipe 18, while the cut-off pipe is in communication with the exhaust-pipe 21.
95

The operation of my steering-gears are as follows: When the traction-engine is moving in a straight line, the handle 17 of the valve is held in a central position in order that
100 steam entering through the pipe 18 will pass through the pipes 19 and 20 to the ends of the cylinder 5 on each side of the piston 6 therein. The pressure of the steam upon the piston side of the piston being equal, said piston
105 will be held in the center of cylinder 5, and as a result the rods 10 will be held in a central position relative to the body of a traction-engine, and the axle 1 will be correspondingly held, and thus the engines will move forwardly or rearwardly in a straight line. When
110

the operator of the engine desires to change the direction of travel, or, for instance, wishes to turn to the right, the valve-handle 17 is so manipulated that the inlet-pipe 18 and pipe 20 are in communication, and this movement opens communication between the pipe 19 and the exhaust-pipe 21. The steam now entering through the pipe 18 will pass through the pipe 20 into the right-hand end of the cylinder 5, and as a result the piston 6 will be moved to the left-hand end of said cylinder, while the pressure on the left-hand side of the piston 6 will exhaust through the pipes 19 and 21. The piston-rod 7 will necessarily be carried to the left with the piston 6, likewise the rods 10 in their bearings 11, and as a result the pin 13 is shifted to the left, and in so doing it slides a short distance through the bearing 14 and at the same time turns upon the pin that hinges it to the arm 12. This action shifts the yoke 4 to the left in the position shown by dotted lines in Fig. 1, and as a result the axle is swung out of its transverse position and the wheels upon said axle are so shifted as that the engine is guided toward the right in its forward movement.

The movements just described are necessarily reversed when it is necessary to shift the front axle and wheels to guide the engine toward the left.

The steering-gear of my movement construction is simple, strong, and durable, is adapted for all classes of traction-engines and

road-rollers, and but very little mechanism is required to accomplish the desired result.

I claim—

1. The combination with a traction-engine, of a cylinder arranged beneath the body of the engine, a piston in said cylinder, piston-rods projecting through each end of the cylinder, a frame connected to the ends of the piston-rods and arranged to slide therewith, a yoke rigidly fixed to the front axle of the traction-engine, and a pivoted sliding connection between the frame and the yoke; substantially as specified.

2. In a steering-gear for traction-engines, a cylinder arranged beneath the body of the traction-engine, a piston operating in said cylinder, a piston-rod extending through each end of the cylinder, a frame carried by the ends of the piston-rod, a yoke rigidly secured to the front axle of the engine, a bearing at the apex of the yoke, a pin pivoted to the center of the frame of the piston-rod and arranged to slide in the bearing of the yoke, and means whereby fluid-pressure is admitted to each end of the cylinder; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

PETER LOUIE CANTELOU.

Witnesses:

H. G. HART,
J. E. CLARKE.