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A. P. DODGE.

CONTROLLER FOR MOTOR CARS.

(Application filed Dec. 30, 1897.)

(No Model.)

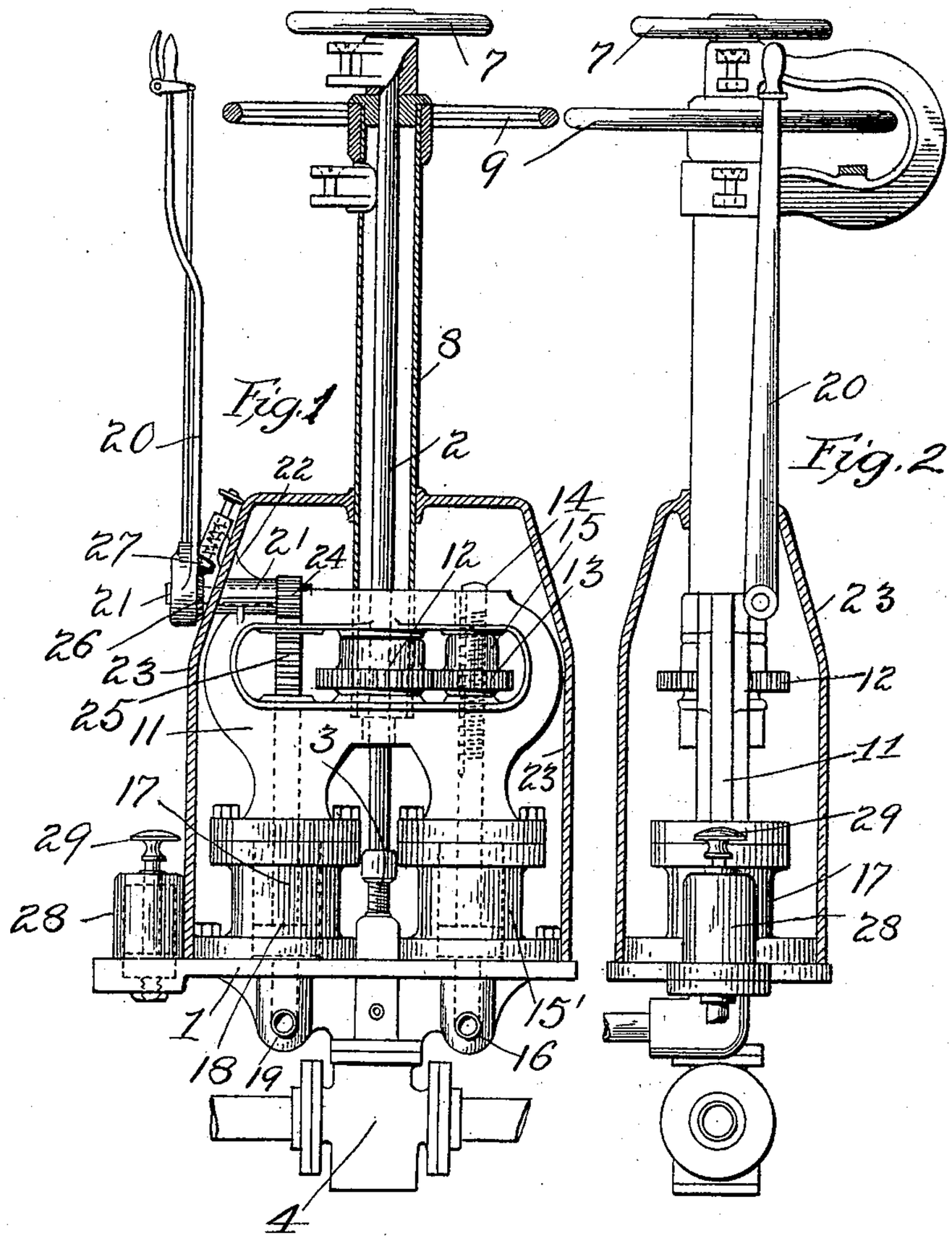

Fig. 1

Fig. 2

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CONTROLLER FOR MOTOR-CARS.

SPECIFICATION forming part of Letters Patent No. 616,089, dated December 20, 1898.

Application filed December 30, 1897. Serial No. 664,604. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR PILLSBURY DODGE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Controllers for Motor-Cars, of which the following is a specification.

My invention relates to a controlling system for motor-cars and involves the use of hydraulic means extending from the cabs to the brake system, to the cylinder-cocks, and to the link-motion or reversing-gear, said means being actuated and controlled by a group of devices or controllers arranged at the ends of the car.

In the accompanying drawings, Figure 1 is a detail view, partly in section, of the controller. Fig. 2 is a similar view to Fig. 1, taken from a point at a quarter-turn therefrom.

The controlling devices of this invention are intended for use in connection with motors of the "Dodge" type, in which a boiler and driving-engines are arranged beneath the car-bottom, the same being controlled by devices preferably at the ends of the car. These controlling devices are grouped upon a main frame 1, and they comprise a central shaft 2, having a screw-threaded lower end 3, forming a part of a steam-controlling or pressure-reducing valve 4 below the main frame and the car-platform, which valve controls the pressure of the steam passing to the cylinders. This central shaft 2 is operated by a hand-wheel 7. Surrounding the shaft is a sleeve 8, having a hand-wheel 9 and having at its lower end a bearing in a yoke on the main frame. The gear-wheel 12 is fixed to this sleeve and meshes with a pinion 13, having a nut 15 attached thereto, engaging a screw-threaded portion of a rod 14, adapted to slide in the yoke, the lower end of the rod carrying a piston moving in a cylinder 15′, which cylinder is held between the yoke 11 and the main frame or casting 1. From this cylinder the hydraulic connection 16 extends to the reversing mechanism or link-motion, so that by turning the hand-wheel 9 the hydraulic medium between the cylinder 15 and the link-motion will be actuated to set the latter as desired.

The cylinder 15′ is located to one side of shaft 2, and upon the other side a similar cylinder 17 is located, being likewise bolted between the yoke 11 and the main frame or casting 1. This cylinder has a piston 18 therein, and from the lower end of the cylinder a hydraulic pipe connection extends to the brake mechanism, so that by the movement of this piston the brake may be set or let off, and these actions are controlled by a hand-lever 20, fixed on a spindle 21, journaled in a bracket 22 of the casing 23, the said spindle carrying at its inner end the pinion 24, meshing with a rack 25, formed on the upper end of the piston-rod of the piston 18. The brake-lever has a ratchet 26 formed about its pivotal connection, and a detent 27 passes through the bracket 22 and engages therewith. This detent 27 can be withdrawn by a single movement, thus releasing the piston and pressure and letting off the brake instantly. The brake-lever extends up in close proximity to the hand-levers 7 and 9, controlling, respectively, the pressure-regulating valve and the link-motion, so that the motorman can conveniently operate these three sets of mechanisms. The yoke 11 is of symmetrical form, and it together with the cylinders 15′ and 17 and the depending fluid connections 16 and 19 form a symmetrical structure which is inclosed within the casing 23. This casing is adapted to be lifted upward along the sleeve 8, whereby the parts below are made accessible. To one side of this casing a small cylinder 28 is supported on a lateral extension of the base-casting 1, and the piston of this cylinder has its rod provided with a foot-piece 29, within easy reach of the motorman's foot. This cylinder is connected by a fluid-pressure conduit with the cylinder-cocks.

The motor is controlled as to speed by the operation of the hand-wheels 7 and 9, the former controlling the reducing-valve and insuring a known initial pressure, while the latter controls the reversing mechanism or link-motion.

I claim as my invention—

1. In a motor operated by steam or like pressure, a boiler, a controller comprising a valve, a central shaft, a hand-wheel connected therewith, a piston and a cylinder on one side thereof connected with brake mechanism by a hy-

draulic column, a piston and cylinder on the opposite side similarly connected with a reversing mechanism, the sleeve surrounding the shaft and connected so as to operate the reversing-piston and the hand-lever with geared connections with the piston of the first-named brake-cylinder, substantially as described.

2. In combination in a motor operated by steam or like pressure, a valve, a hand-wheel and shaft for controlling or adjusting the same, a reversing mechanism, a piston, a cylinder and means for operating said piston consisting of a sleeve surrounding the shaft 2, a nut threaded on the piston-rod, a pinion secured to the nut, a gear on the sleeve and meshing with the pinion and means for turning the sleeve, the said cylinder being arranged parallel with the shaft, with means for supporting the parts, substantially as described.

3. In combination, a controller for steam or like motors, consisting of a valve, a central shaft connected therewith, a cylinder on each side of said shaft and parallel therewith, a yoke bolted to the tops of said cylinders, a sleeve surrounding the shaft, gearing extending laterally therefrom within the yoke and connected with the piston of one of the cylinders, a hand-lever, the bracket pivotally supporting the same, the pinion-and-rack connection between the hand-lever and the other piston and means for supporting the parts, substantially as described.

4. In combination in a controller for steam-motors and the like, a pressure-reducing valve, the brake and reversing cylinders arranged adjacent to and parallel with the shaft which operates the valve, the sleeve surrounding the shaft and having connection with the piston of the reversing-cylinder, the hand-lever connected with the piston of the brake-cylinder, the casing inclosing the cylinders, a cylinder outside of the casing having a foot-piece whereby its piston may be operated, said cylinder having connection with the cylinder-cocks with means for supporting the parts, substantially as described.

5. In combination in a steam or like motor, a valve and means of operating the same, reversing mechanism, brake mechanism and cylinder-cocks, fluid-pressure regulating connections leading to the brake mechanism, reversing mechanism, and cylinder-cocks and controlling devices in the car comprising pistons and cylinders for controlling said fluid-pressure, said cylinders being arranged adjacent and parallel with each other and means for supporting the cylinders, substantially as described.

6. In combination in a motor for steam or like power, a valve, a cylinder having liquid connection with a reversing mechanism, a second cylinder having liquid connection with the brake mechanism, hand-operated devices for operating the pistons of said cylinders, fluid-pressure connections leading to the cylinder-cocks and the foot-piston for controlling the pressure in said connections, the said cylinders being set vertically and parallel to each other and having vertically-operating pistons, substantially as described.

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

ARTHUR PILLSBURY DODGE.

Witnesses:
HORACE F. HODGES,
W. W. THOMAS, Jr.