

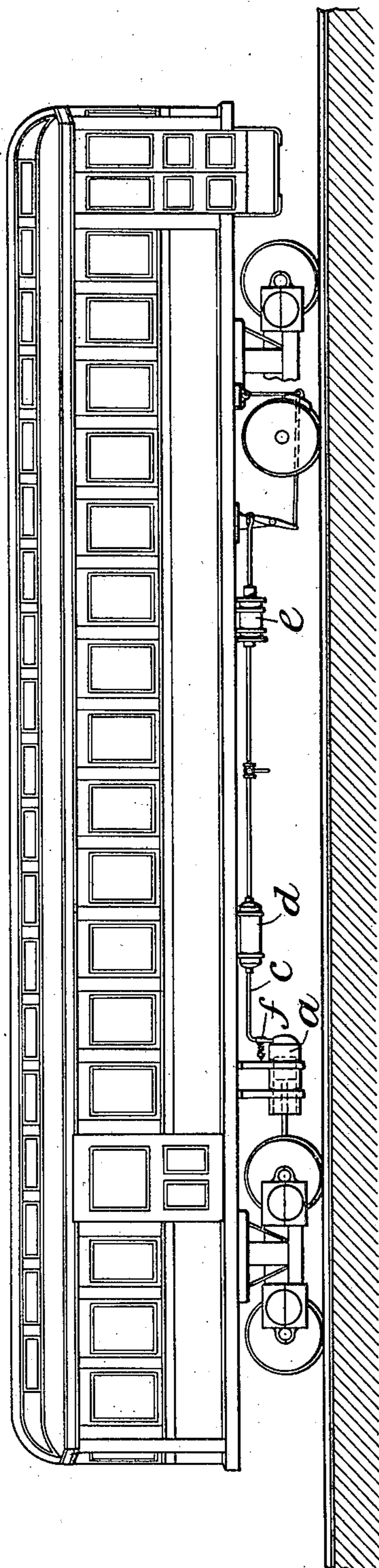
No. 831,550.

PATENTED SEPT. 25, 1906.

L. T. GIBBS.
DRIVING AND BRAKING APPARATUS.
APPLICATION FILED APR. 15, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
Edgeworth
L. E. Varney.

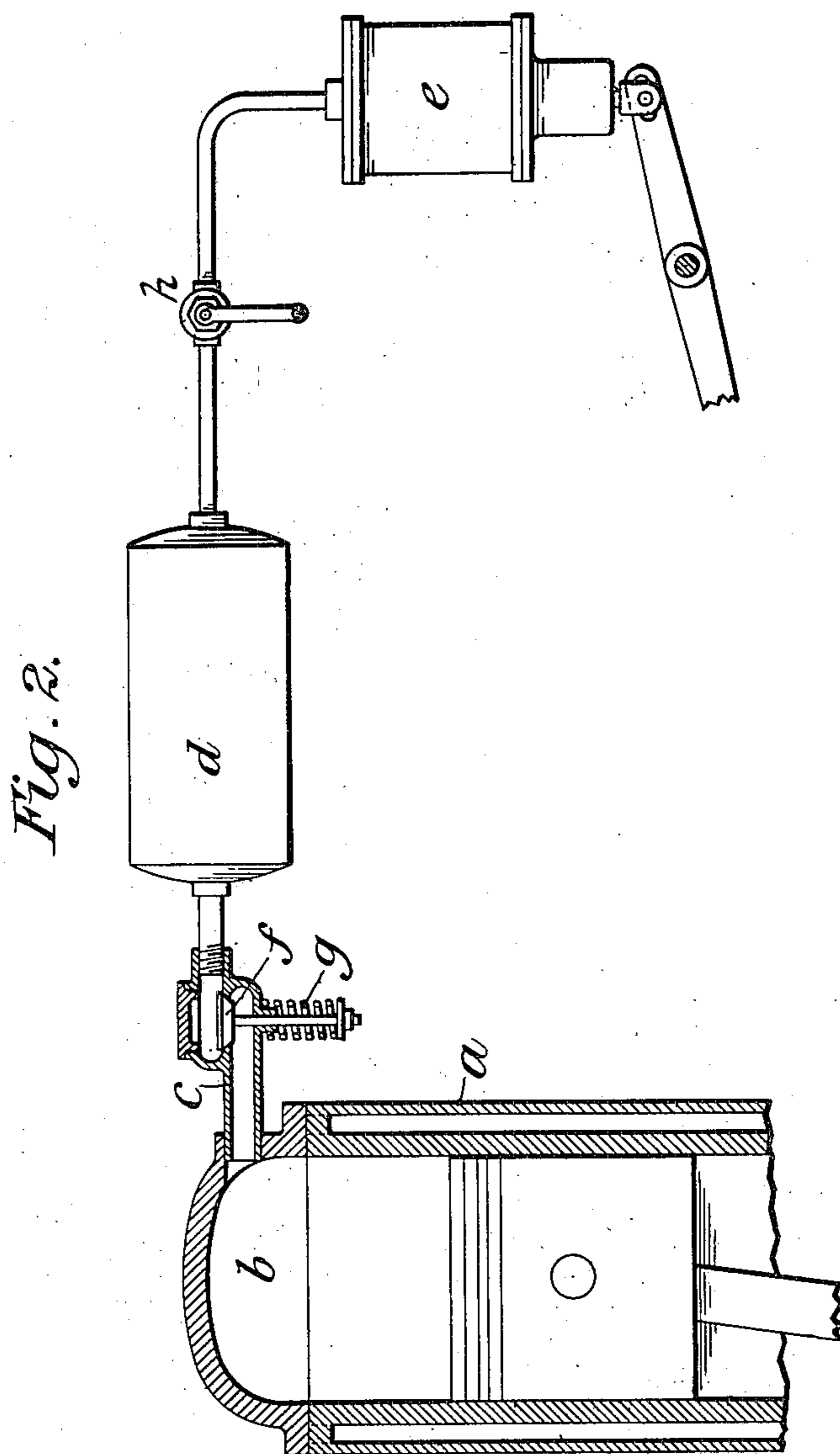
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2 SHEETS—SHEET 2.



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Inventor:
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UNITED STATES PATENT OFFICE.

LUCIUS T. GIBBS, OF NEW YORK, N. Y.

DRIVING AND BRAKING APPARATUS.

No. 831,550.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed April 15, 1904. Serial No. 203,310.

To all whom it may concern:

Be it known that I, LUCIUS T. GIBBS, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Driving and Braking Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

Fluid-pressure for operating the brakes of a train is usually supplied from the general source of power used to drive the train or from a pump operated by the general source of power. In either case the development of the fluid-pressure for the brake system is not necessarily dependent upon the engine or the driving mechanism of the train and as a general rule requires considerable additional mechanism to be provided therefor.

One object of the present invention is to simplify the means for the development of pressure for the brake system whereby a supply of fluid at the standard pressure may be constantly maintained for operating the brakes without a large multiplication of parts.

Another object of the invention is to provide a simple and compact system of driving and braking particularly adapted for use upon cars driven by engines which are located thereupon.

The invention will be more fully set forth hereinafter and with reference to the accompanying drawings, which are in the nature of diagrams of the improved apparatus.

In the accompanying drawings, where for purposes of illustration and explanation one embodiment of the invention is shown, Figure 1 is a view in side elevation of a car having the improvements thereon; and Fig. 2 is in the nature of a diagram showing partly in elevation and partly in section some of the parts detached from the car.

The engine *a* is shown in a conventional way, no particular form of engine being essential to the invention, and various parts of the engine, such as the inlet-port and the exhaust-port, are for simplicity omitted from

the drawings. As the apparatus is employed upon a car of a train, the engine *a* is preferably of the explosive type and is geared or otherwise connected to the driving-wheels to propel the car. As shown in the drawings, the upper part of the engine-cylinder *b* is where the explosion occurs, and this portion of the cylinder communicates, as by means of a pipe *c*, with a storage-tank *d*, which in turn communicates with a cylinder *e* of the brake system. In the pipe *c* is a check-valve *f*, opening toward the tank *d*, and means, such as a spring *g*, is provided to assist in holding the valve upon its seat. There is also preferably a valve *h* between the tank and cylinder *e* to control the passage of fluid from the tank to the brake system.

It will be obvious that as the explosion occurs the valve *f* will be raised to allow a certain portion of the gases of combustion to pass into the tank *d* until the combined force of the back pressure in the tank and the tension of the spring acting upon the valve is equal to the intensity of the explosion or pressure in the engine-cylinder. The tension of the spring accordingly will depend upon the constant pressure desired in tank *d* and upon the pressure in the engine-cylinder. If, for instance, a constant pressure of one hundred and twenty (120) pounds be desired in tank *d* and pressure in the engine-cylinder is two hundred (200) pounds, then the tension of the spring *g* will have to be about eighty (80) pounds and in every case, as will be clear, less than the pressure in the engine-cylinder. In this way the tank *d* acts as a storage-tank in which, as will be obvious, a constant pressure will be maintained and may be used not only to apply the brakes, but as well to start up the engine. If desired, the intensity of the pressure in tank *d* may be changed from time to time by varying the tension of spring *g*.

It will be understood that so far as the invention is concerned the character of the fluid-brake system is immaterial. In the illustration what is known as the "straight air system" is shown; but the invention is

not limited thereto, but may be used with automatic brakes or any other form of fluid-brakes, as may be desired.

I claim as my invention—

5 In a driving and braking apparatus, the combination with an explosive-engine, of a storage-tank, a pipe leading from the cylinder of the engine to the tank having a valve therein to permit gases of combustion to pass
10 from the cylinder to the tank and to prevent

the gases from passing from the tank to the cylinder, a fluid-pressure brake and a pipe leading from the tank to the cylinder of the brake.

This specification signed and witnessed 15
this 14th day of April, A. D. 1904.

LUCIUS T. GIBBS.

In presence of—

ANTHONY N. JESBERA,
LUCIUS E. VARNEY.