

(No Model.)

H. P. HOLT.

BRAKE APPARATUS FOR GAS TRACTION CARS.

No. 545,362.

Patented Aug. 27, 1895.

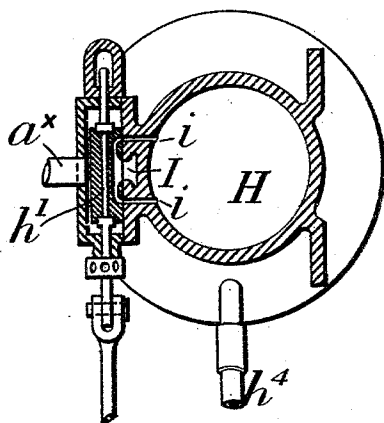
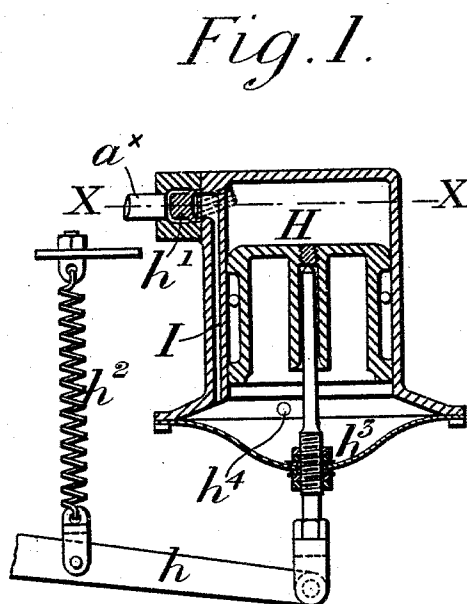


Fig. 2.



Witnesses:
Henry S. ...
Thos. A. Gunn

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UNITED STATES PATENT OFFICE.

HENRY P. HOLT, OF LONDON, ENGLAND.

BRAKE APPARATUS FOR GAS TRACTION-CARS.

SPECIFICATION forming part of Letters Patent No. 545,362, dated August 27, 1895.

Application filed April 20, 1895. Serial No. 546,585. (No model.) Patented in England November 1, 1893, No. 20,677; in France August 4, 1894, No. 240,557, and in Belgium August 4, 1894, No. 111,251.

To all whom it may concern:

Be it known that I, HENRY PERCY HOLT, a citizen of England, residing at 22 Chancery Lane, London, in the county of London, England, have invented certain new and useful Brake Apparatus for Gas Traction-Cars, (for which I have obtained Letters Patent in Great Britain, dated November 1, 1893, No. 20,677; in France, dated August 4, 1894, No. 240,557, and in Belgium, dated August 4, 1894, No. 111,251,) of which the following is a specification.

My invention relates to brake apparatus for a gas traction-car so constructed and arranged that the pressure of the compressed gas which is stored in reservoirs on the car is utilized for putting on the brakes, and the gas thus employed goes to supply the engine when the brakes are taken off, as I shall describe, referring to the accompanying drawings.

Figure 1 is a longitudinal section, and Fig. 2 is a sectional plan on the line X X of Fig. 1, of a brake-cylinder according to my invention, suited for operating as above set forth.

The cylinder H is fitted in the usual way with a piston connected to a lever h, which has connections of any usual suitable kind to the brake-blocks. At the upper part of the cylinder H there is a slide-casing, in which is fitted a slide-valve h', having its rod connected to a lever or handle in some convenient part of the car, to be moved by the driver or conductor. The slide-case communicates by a pipe a^x with a small reservoir, which is supplied through a reducing-valve from the main reservoir with gas at a moderate pressure, suitable for supplying the engine-cylinder. From the middle port of the slide-facing a passage I leads to the space beyond the piston, covered by a flexible diaphragm h², attached by its middle to the piston-rod and by its edge to the cylinder-flange. From this space a pipe

h⁴ leads to the gas-valve for supplying the cylinder. When the slide-valve h' is in the middle position, (shown in Fig. 2,) the brake-piston, being under equilibrium of pressure, is raised by a spring h², the brakes being thus taken off. When it is desired to put on the brakes, the valve h' is moved in either direction, so as to uncover one of the ports i and cover the other. Gas under moderate pressure then acts on the piston, which moves, putting on the brakes and straining the spring h². For taking off the brakes the valve h' is moved back to the middle position, putting both the ports i in communication with I, so that the gas which acted on the one side of the piston passes to the other side and thence by the pipe h⁴ to supply the engine.

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

In a gas traction car, a brake cylinder and piston, the cylinder having at its one end ports governed by a slide valve in a case which communicates with a reservoir of gas under pressure and having at its other end a space covered by a flexible diaphragm this space communicating by a lateral passage with the middle port of the slide facing, and by a pipe with the gas supply of the engine, arranged and operating substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of April, A. D. 1895.

HENRY P. HOLT.

Witnesses:

OLIVER IMRAY,
JNO. P. M. MILLARD.