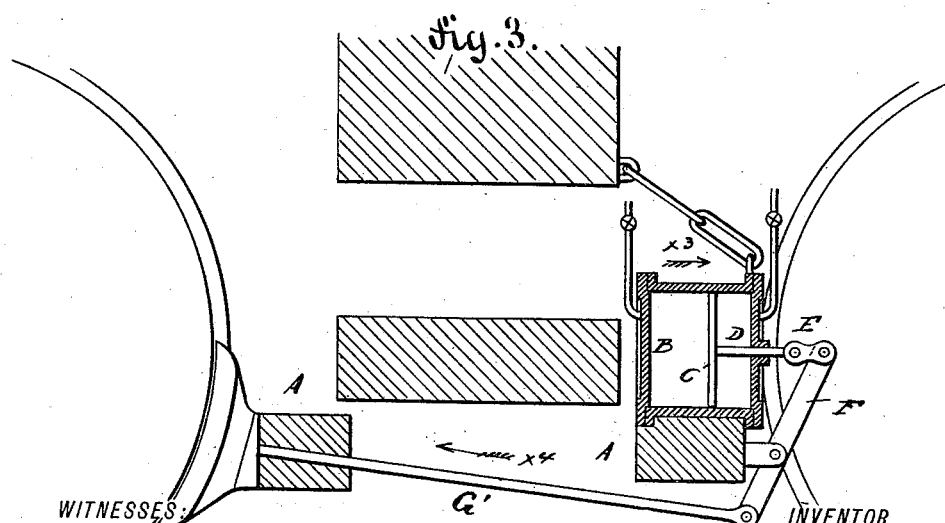
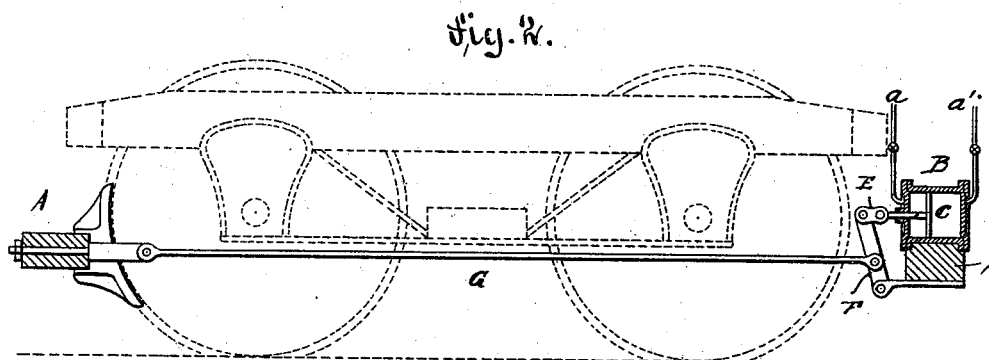
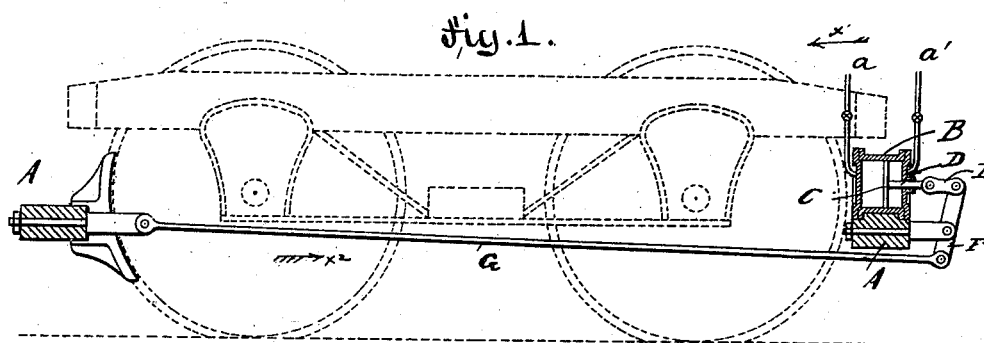


(No Model.)

L. P. LAWRENCE.
POWER BRAKE.

No. 418,574.

Patented Dec. 31, 1889.



WITNESSES:

For. U. Rosenbaum.
Reminders

INVENTOR

Louis P. Lawrence
BY *James H. Raigamer*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LOUIS P. LAWRENCE, OF PASSAIC, NEW JERSEY, ASSIGNOR TO THE LAWRENCE RAILWAY BRAKE COMPANY, OF NEW YORK, N. Y.

POWER-BRAKE.

SPECIFICATION forming part of Letters Patent No. 418,574, dated December 31, 1889.

Application filed May 23, 1889. Serial No. 311,807. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. LAWRENCE, of Passaic, in the county of Passaic, State of New Jersey, a citizen of the United States, have invented certain new and useful Improvements in Power-Brakes, of which the following is a specification.

This invention relates to improvements in that class of power-brakes that are operated by vacuum or compressed air, steam, gas, or any other suitable operating-fluid.

The object of my invention is to provide a brake of this kind which is simple in construction and powerful, and which can be secured on the brake-beams and supported by the same.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical sectional view of a car-truck having the brake-beams at the ends and my improved power-brake on said beams. Fig. 2 is a similar view showing a modified construction. Fig. 3 is a similar view of a truck having the brake-beams at the interior, and also provided with my improved power-brake.

Similar letters of reference indicate corresponding parts.

In the construction shown in Fig. 1 the brake-beams A A are arranged at the ends, as is customary in trucks for passenger, mail, and express cars. On the top edge of one of said brake-beams the cylinder B is fixed, which contains the piston C, having the piston-rod D, which is connected by a link E with the upper end of a lever F, fulcrumed on the outer side of the brake-beam carrying the cylinder. The lower end of the lever F is connected by a rod G with the opposite brake-beam A. The cylinder B has two pipes a a' at its ends.

When the brake is to be operated by compressed air, the same is admitted into the cylinder through the pipe a', and moves the piston in the direction of the arrow x', whereby the rod G is drawn in the direction of the arrow x², and the shoes on the brake-beam, with which said rod G is connected, are pressed

firmly against the corresponding wheels. The shoes on the brake-beam which supports the cylinder are also compressed against the corresponding wheels. By means of the fulcrumed lever G the power is multiplied according to the difference in length of the two arms of said lever.

In case the brake is to be operated by vacuum, the pipe a is connected with the ejector or air-pump, and when the vacuum is created the piston C is also moved in the direction of the arrow x'.

In Fig. 2 the position of the cylinder is reversed and the lever F is fulcrumed on the inner side of the brake-beam. The cylinder is also provided with the pipes a and a', as in Fig. 1.

In the construction shown in Fig. 3 the brake-beams are at the inner sides of the wheels and in the interior part of the truck in contradistinction to the constructions shown in Figs. 1 and 2, which have the brake-beams at the ends. The connecting-rod G is replaced by a push-bar G', connected with the fulcrumed lever F in the manner previously described.

To apply the brake the piston C is moved by compressed air or vacuum in the direction of the arrow x³, and thereby the push-rod G' moved in the direction of the arrow x⁴, and the shoes on the brakes are pressed against the rims of the corresponding wheels.

As the entire brake apparatus is supported by the brake-beam, it accommodates itself to perpendicular and lateral movements of the wheels independent of the bolster-timber which holds the king-bolt. The power of the brake is multiplied and increased, and with a single cylinder for each truck I am enabled to exert sufficient power to effectually brake any car.

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

1. The combination, with two brake-beams, of a cylinder or chamber on one beam, a piston in said chamber, and a lever fulcrumed on the brake-beam carrying the cylinder and having one end connected with the piston in the cylinder, the opposite end part of said lever being connected by a bar or rod with the other brake-beam, substantially as set forth.

2. The combination, with two brake-beams,
of a cylinder or chamber secured on one of
the said brake-beams, a piston in said cylin-
der, and a pivoted lever and a rod or bar for
5 transmitting power from the brake-beam car-
rying the cylinder or chamber to the other
brake-beam, substantially as set forth.

In testimony that I claim the foregoing as
my invention I have signed my name in pres-
ence of two subscribing witnesses.

LOUIS P. LAWRENCE.

Witnesses:

OSCAR F. GUNZ,
JOHN A. STRALEY.