

(No Model.)

L. P. LAWRENCE.  
POWER BRAKE.

No. 403,539.

Patented May 21, 1889.

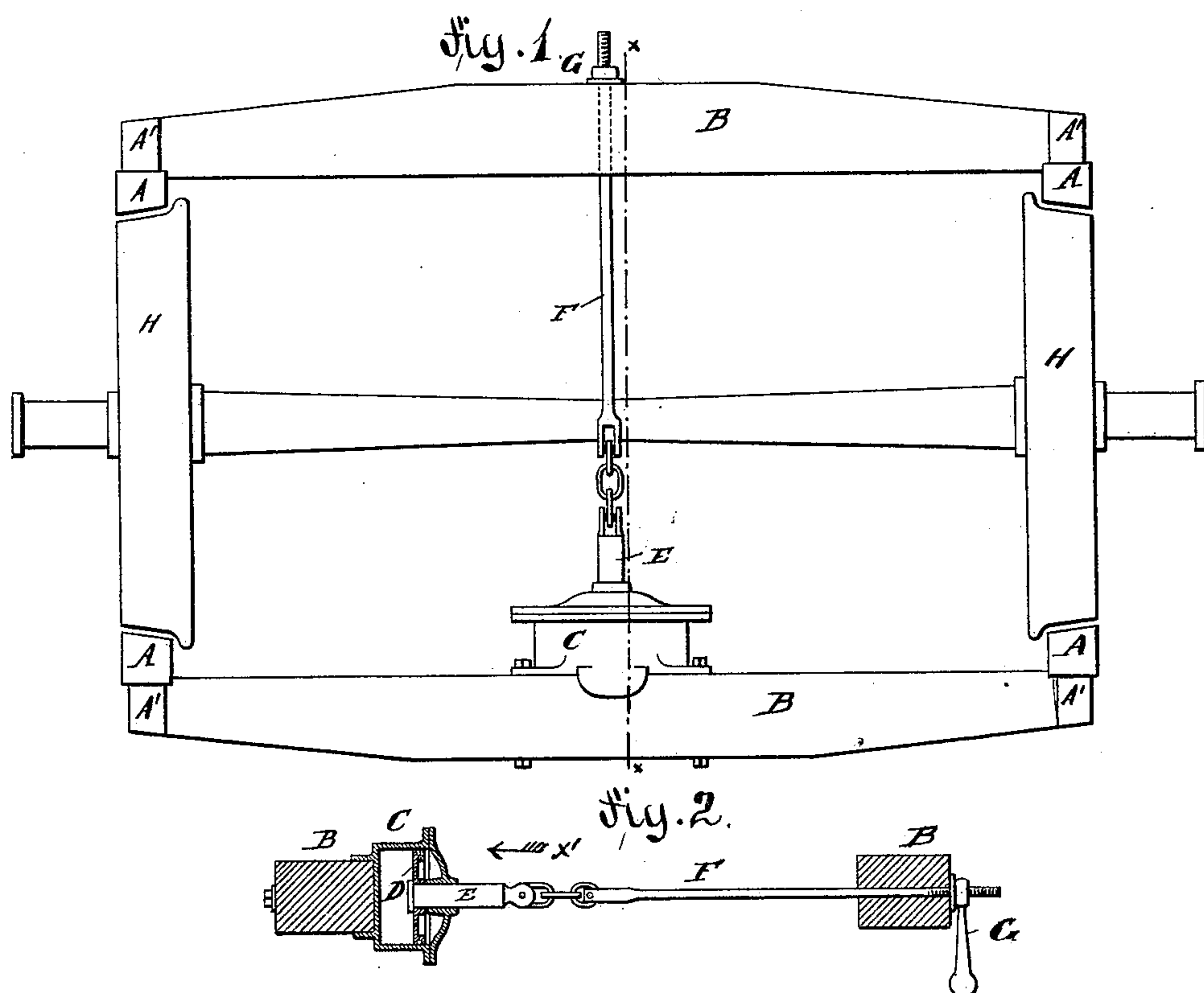
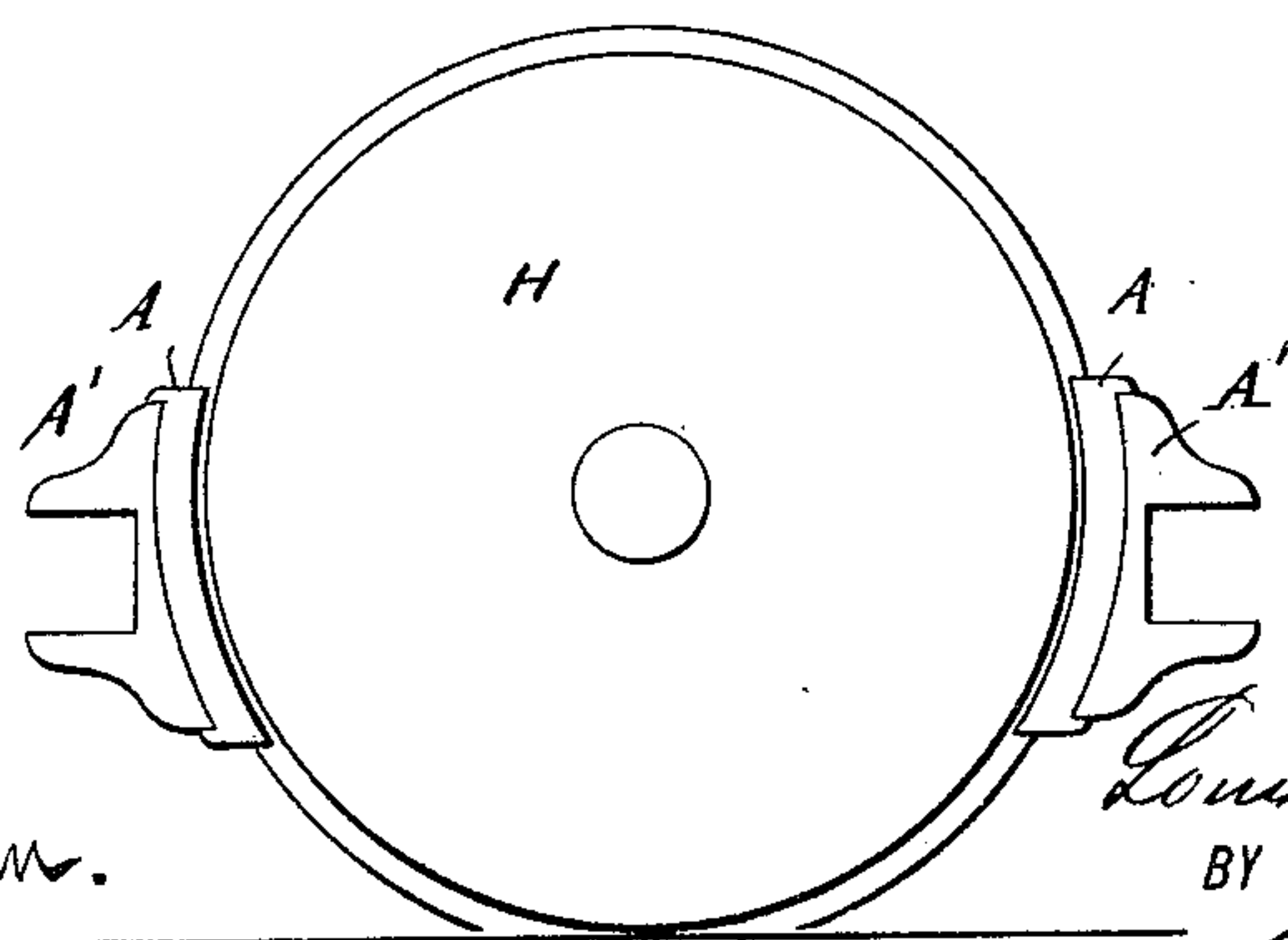


Fig. 3.



WITNESSES:

for W. Rosenbaum.  
Carl Kapp

INVENTOR,

Louis P. Lawrence

BY

James H. Hagerman

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. 403,539, dated May 21, 1889.

Application filed November 22, 1888. Serial No. 291,535. (No model.)

*To all whom it may concern:*

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

The object of my invention is to provide certain new and useful improvements in power-brakes, whereby the construction is simplified, the cost reduced, and the power increased to a very great extent.

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

In the accompanying drawings, Figure 1 is a plan view of my improved power-brake, showing the manner in which it is applied.  
20 Fig. 2 is a vertical transverse sectional view on the line  $x x$ , Fig. 1, parts being omitted. Fig. 3 is a side view.

Similar letters of reference indicate corresponding parts.

25 The brake-shoes A, which may be of any well-known construction, are attached to the saddles A', fastened on the ends of the brake-beams B.

To the inner side of one of the brake-beams  
30 B the vacuum-cylinder C is secured in any well-known manner, said cylinder containing the piston D, provided with the piston-rod E. The cylinder C is longer than it is wide, as shown in Figs. 1 and 2, and its longer axis extends in the direction of the length of the  
35 brake-beam. The cylinder is constructed in this shape, so as to project but slightly from the top and bottom of the brake-beam, but yet have the requisite area to produce the  
40 necessary pressure. If the cylinder were made

circular it would project so far from the top and bottom of the brake-beam as to strike against the projections on the roadway between the rails. The rod F, flexibly connected with the outer end of the piston-rod  
45 E, is passed through an aperture in the other or opposite brake-beam B, and on the projecting end of said rod the nut G is screwed for the purpose of tightening said rod more or less. When by means of an ejector or  
50 other suction device the air is exhausted from the space between the closed end of the cylinder and the piston D, the pressure of the exterior air presses the piston D in the direction of the arrow  $x'$  and pulls the rod F in  
55 the same direction. Thereby the brake-beams B are pressed toward each other and the brake-shoes A are pressed against the rims of the wheels H.

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

The combination, with two brake-beams carrying shoes which are adjacent to the rims of wheels, said beams being mounted to move toward each other when pressing the shoes  
65 against the rims of the wheels, of a brake-cylinder secured to the inner surface of one brake-beam, a piston in said cylinder mounted to move toward the inner edge of the brake-beam to which its cylinder is secured while  
70 operating, and a rod connected with said piston and with the other brake-beam, substantially as set forth.

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

LOUIS P. LAWRENCE.

Witnesses:

OSCAR F. GUNZ,  
CARL KARP.