952,794.

B. FARMER.

AIR BRAKE SYSTEM.

APPLICATION FILED SEPT. 7, 1909.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.

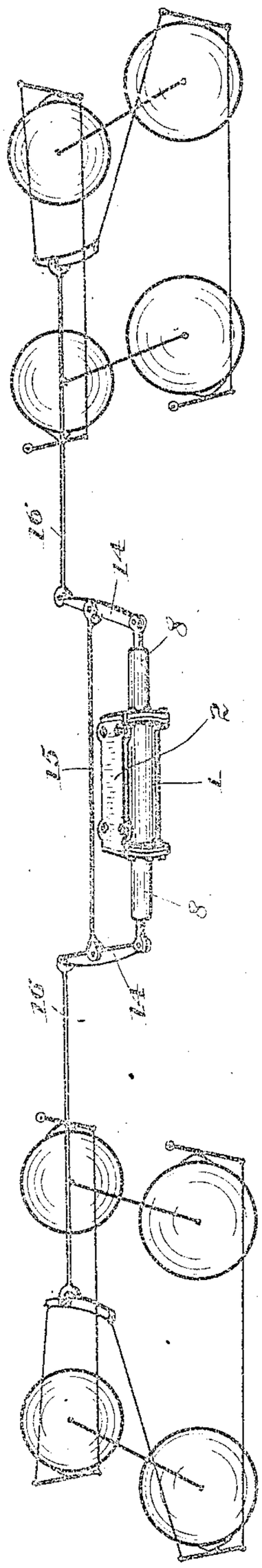

Fig. 1.

Witnesses:

W. C. Smith

B. G. Richards

Inventor:

Bernard Farmer.

By Joshua R. H. Potts

his Attorney.

B. FARMER.

AIR BRAKE SYSTEM.

APPLICATION FILED SEPT. 7, 1909.

952,794.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 2.

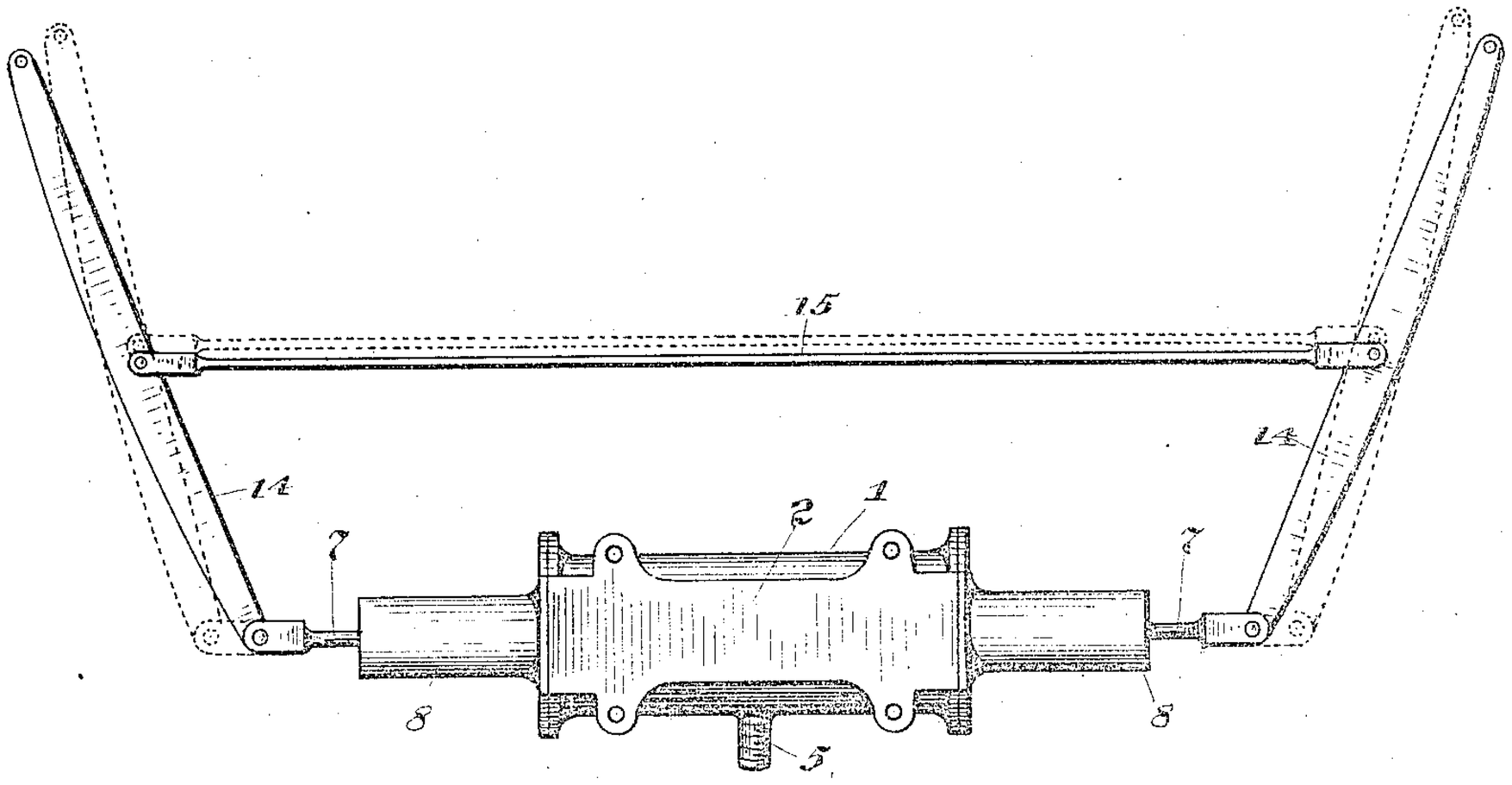

Fig. 2.

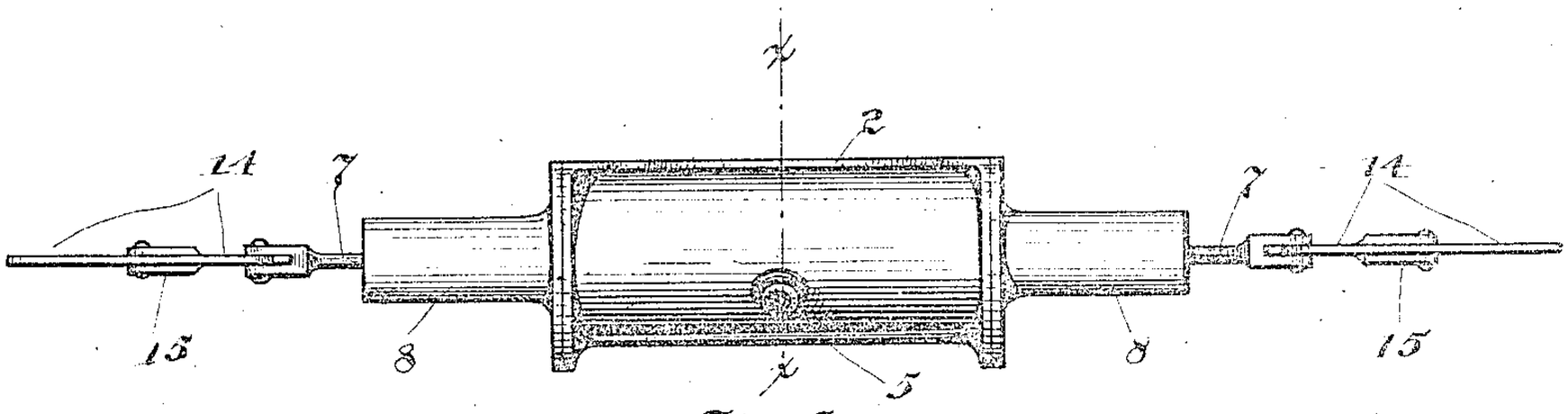

Fig. 3.

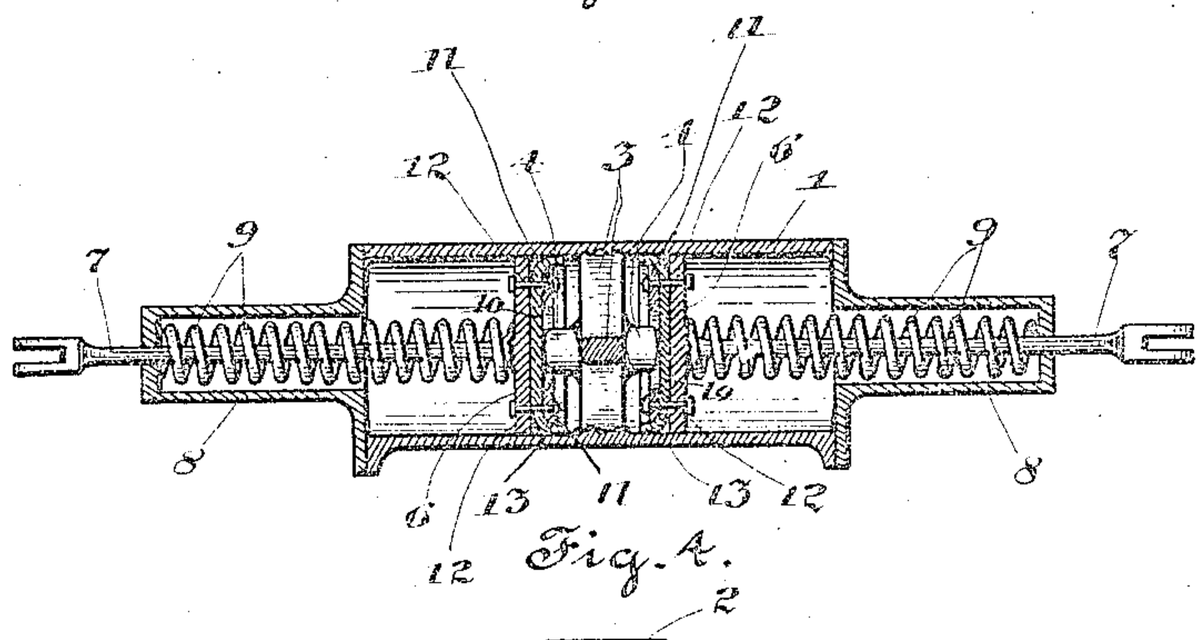

Fig. 4.

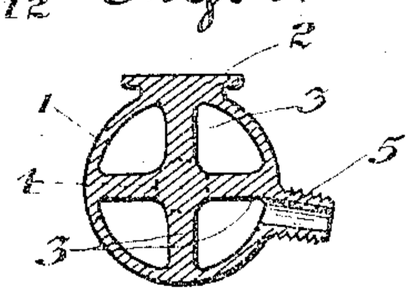

Fig. 5.

Witnesses:

W. C. Smith

B. G. Richards

Inventor:

Bernard Farmer,

By Joshua R. N. Pope

his Attorney.

UNITED STATES PATENT OFFICE.

BERNARD FARMER, OF CHICAGO, ILLINOIS.

AIR-BRAKE SYSTEM.

952,794. Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed September 7, 1909. Serial No. 516,593.

To all whom it may concern:

Be it known that I, BERNARD FARMER, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Air-Brake Systems, of which the following is a specification.

My invention relates to improvements in air brake systems for applying brakes simultaneously to wheels at opposite ends of a car. In such systems it is important that the pressure applied to all brakes shall be exactly equal since otherwise the wheels receiving the greatest pressure are likely to stop rotating and slide on the rails, thus producing "flat" wheels.

The object of my invention is to provide a system in which the pressure applied to the different brakes shall be exactly equal and thus flattening of the wheels avoided.

My invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a diagrammatic perspective view illustrating the application of the system to the brakes of a car, Fig. 2, an enlarged top plan view of the air cylinder employed and the brake levers and connections, Fig. 3, a side elevation of Fig. 2, Fig. 4, a longitudinal section through the air cylinder, and Fig. 5, a section on line *x*—*x* of Fig. 3.

In the preferred form of construction as illustrated in the drawings, I employ an elongated cylinder 1 carrying at its top a supporting plate 2 adapted to be secured to the bottom of the car. At its central portion the cylinder 1 is provided with a spider 3 preferably cast integral therewith and having an elongated central hub 4. A perforated and threaded boss 5 serves as a means for attaching a pipe for the supply and exhaust of the air from cylinder 1. In cylinder 1 on opposite sides of spider 3 are mounted pistons 6 carrying piston rods 7 operating through sockets 8 on either end of cylinder 1. Compression springs 9 are imprisoned between the piston 6 and the ends of sockets 8 and serve to yieldingly press said pistons against the ends of hub 4 which thus serve as a stop for said pistons. A flexible disk 10, preferably of leather, is secured to the opposing faces of pistons 6 by means of annular rings 11 and bolts 12 with the outer edges 13 of said disk bent over against the interior periphery of cylinder 1 to form a packing for piston 6. At their outer ends piston rods 7 are pivoted to brake operating levers 14 which are connected together by means of a link 15 pivoted to said levers at equal distances from their piston rod pivot. The outer ends of levers 14 are pivoted to brake operating rods 16 running to brake operating systems at either end of the car. By this construction it will be seen that upon admission of air to cylinder 1 between piston 6 said pistons will be forced apart uniformly and by exactly the same pressure which will be transmitted through brake levers 14 to brake operating rods 16 with the exact equality, thus insuring that exactly the same force will be transmitted to the brake operating system at either end of the car.

While I have illustrated and described the preferred construction for carrying my invention into effect this may be modified or varied without departing from the spirit of my invention. I, therefore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

In an air brake system, two equal communicating cylinders in alinement with each other; equal pistons operating oppositely in said cylinders; means for admission and exhaust between said pistons; a spider in said cylinder between said pistons and provided with an elongated hub adapted to act as a stop for said pistons; piston rods for said pistons; equal brake operating levers pivoted to said piston rods; a link connecting

said brake levers, the connections between said link and said levers being at equal distances from the connections between said levers and said piston rods; and operative connections between said levers and the brakes of a car, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BERNARD FARMER.

Witnesses:
HELEN F. LILLIS,
JOSHUA R. H. POTTS.