

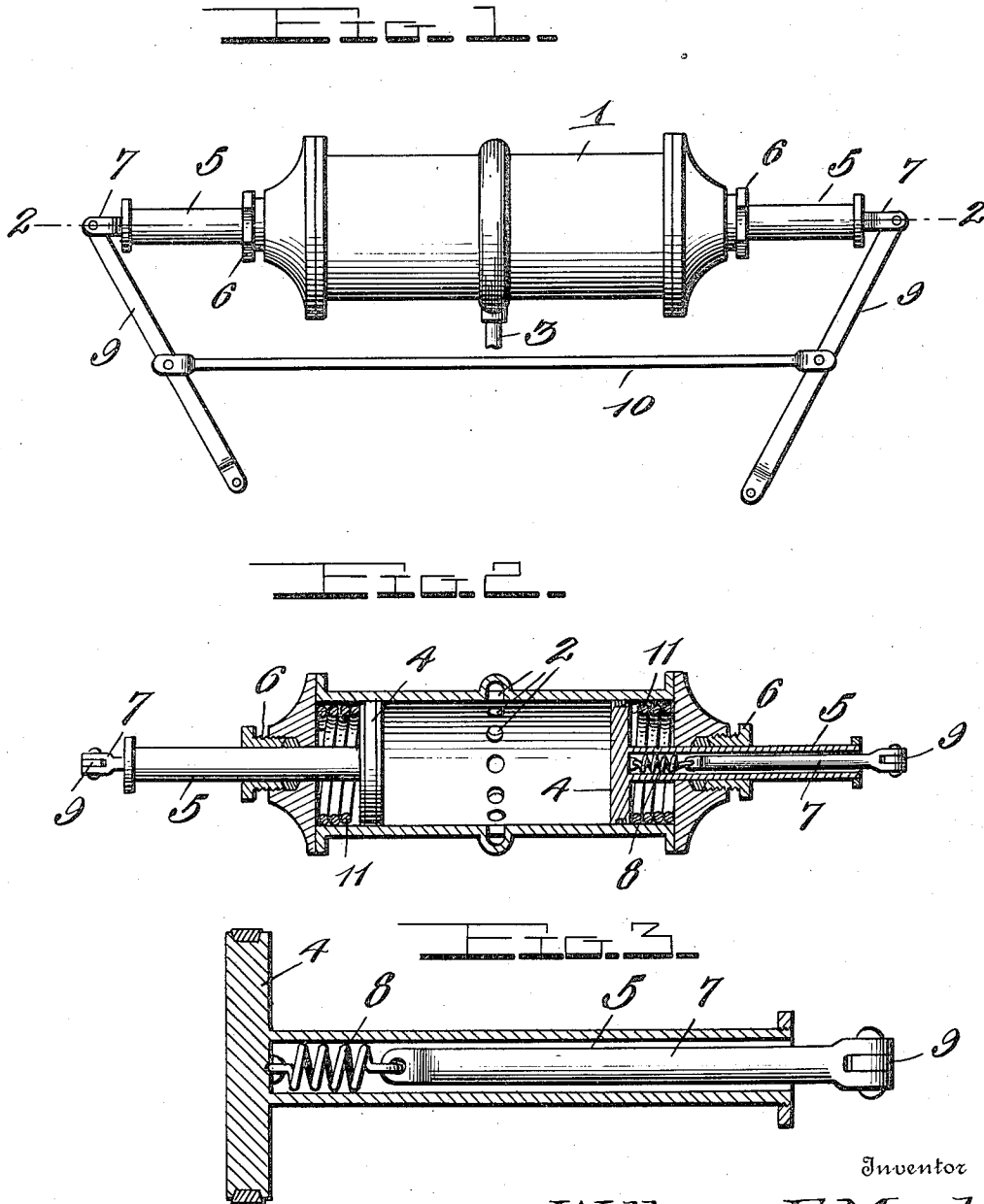
W. E. MEAD.

AIR BRAKE.

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1,017,011.

Patented Feb. 13, 1912.



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WILLIAM E. MEAD, OF MARSHALL, TEXAS.

AIR-BRAKE.

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To all whom it may concern:

Be it known that I, WILLIAM E. MEAD, a citizen of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented certain new and useful Improvements in Air-Brakes, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to fluid pressure brakes in general and more particularly to improvements in and about the cylinder that actuates the brake system when the fluid under pressure is permitted to flow therein.

15 The object of this invention is to provide a device which will cause the brakes to act positively on the wheels and yet have a certain amount of resilient action which will eliminate greatly the jerking action of the present systems, because it is well known that in the ordinary types of brakes used in every day life on trains and the like that the brakes act so suddenly on the wheels that they are given a somewhat chattering
20 action which is detrimental to the brake shoe and also to the wheel.

Another object of this invention is to have the brake arranged so that it will apply the brake shoes simultaneously to the various
30 wheels, and with an equal amount of pressure.

Other objects of this invention will become apparent as it is more fully set forth.

In the accompanying drawings which
35 illustrate by way of example an embodiment of this invention; Figure 1 represents a view in elevation of the cylinder and brake parts embodying this invention. Fig. 2 is a sectional view of Fig. 1; Fig. 3 is a detail of
40 the piston and piston rod.

Similar reference characters refer to similar parts throughout the drawings.

In the drawings which illustrate this invention 1 represents a main casing of a
45 brake cylinder which is provided in its central portion with a number of holes 2 that are connected with the supply pipe 3 that supplies air from the pump or the like to actuate the pistons 4 of the brake cylinder,
50 which are disposed on either side of the central portion of the casing, as is clearly shown in the drawings.

The piston heads 4 are provided with hollow piston rods 5 that are arranged to reciprocate in stuffing boxes 6 disposed at
55 either end of the cylinder. Disposed within

the piston rods 5 are rods 7 having springs 8 disposed at their inner end portions and suitably secured to the piston as is clearly shown in the drawings, so that the
60 actuation of the rods 7 will cause the pistons to move also.

Fastened to the end of the rods 7 are the levers 9 that are arranged to actuate the brake system and apply the brake shoes on
65 the wheels, and have arranged a connecting bar 10 which suitably pivots them and permits their action in the ordinary manner.

In operation, assuming that the pistons are in their central position, air is admitted in the ordinary manner into the supply pipe 3, and thence to the holes 2 into
70 the cylinder. The pressure exerted on the piston heads causes them to move outwardly, but the rods 7 will not be immediately actuated thereby because their springs
75 8 will be compressed slightly and take up a portion of the motion until the springs are sufficiently compressed to cause the rods 7 to move. This slight compression of the
80 springs gives a resilient action to the brake, so that when the brake shoes are applied to the wheels in the ordinary manner their action will not be too sudden thereon.

The use of an extra cylinder 5 as shown
85 and described permits a larger wearing surface to be presented to the stuffing box parts, while not reducing the friction, will tend to reduce the heat per unit area that is developed on the sleeves, which of course in-
90 creases the life of these parts. By having the rods 7 that actuate the piston, within the sleeves 5, arrangement is provided whereby any inaccuracies in the adjustment, or attachment of the levers 9 will be taken
95 care of, because a certain amount of movement is permitted to the rods 7 in the sleeve 5, which leeway does not effect the proper action of the brake system.

Obviously while there is shown but one
100 modification of the construction of this invention in the drawings, it is not desired to limit this application to that one construction in any way, otherwise than necessitated by the prior art, as many modifications in
105 the construction of this invention can be made without departing from the principles thereof.

In order to provide means whereby the pistons will be forced back to their normal
110 positions, when the pressure of air is removed from the interior of the cylinder, the springs

11 are provided and disposed between the piston heads 4 and cap of the cylinder as is clearly shown in the drawings.

Having thus described this invention it is
5 claimed:

1. In a fluid pressure brake apparatus the combination with a cylinder having a plurality of holes circumferentially drilled in the middle portion thereof, a plurality of
10 pistons disposed on either side of the middle portion of said cylinder and arranged to be actuated by the fluid pressure therein, a plurality of sleeves disposed on said pistons for guiding the same, stuffing boxes for
15 guiding said sleeves, a plurality of springs disposed within said sleeves and secured to said pistons a plurality of rods within said sleeves and attached to said springs and arranged to be actuated thereby, and a lever
20 system pivoted to said rods for actuating the brake shoes.

2. In a fluid pressure brake apparatus the combination of a cylinder casing having a

plurality of holes circumferentially disposed in the central portion of said cylinder 25 for the admission of air therein, means for supplying air to said holes, a pair of pistons disposed on either side of said holes and arranged to be actuated therein, sleeves attached to said pistons and arranged to be actuated thereby, springs disposed within said sleeves and attached thereto, rods secured to said springs and arranged to be actuated thereby, when the same are actuated by said
30 pistons, guides for said sleeves, a lever system pivoted to said rods for actuating the brake shoes, and springs disposed within said cylinder for returning the piston heads to their central position when the air pressure is removed from the cylinder.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

WILLIAM E. MEAD.

Witnesses:

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