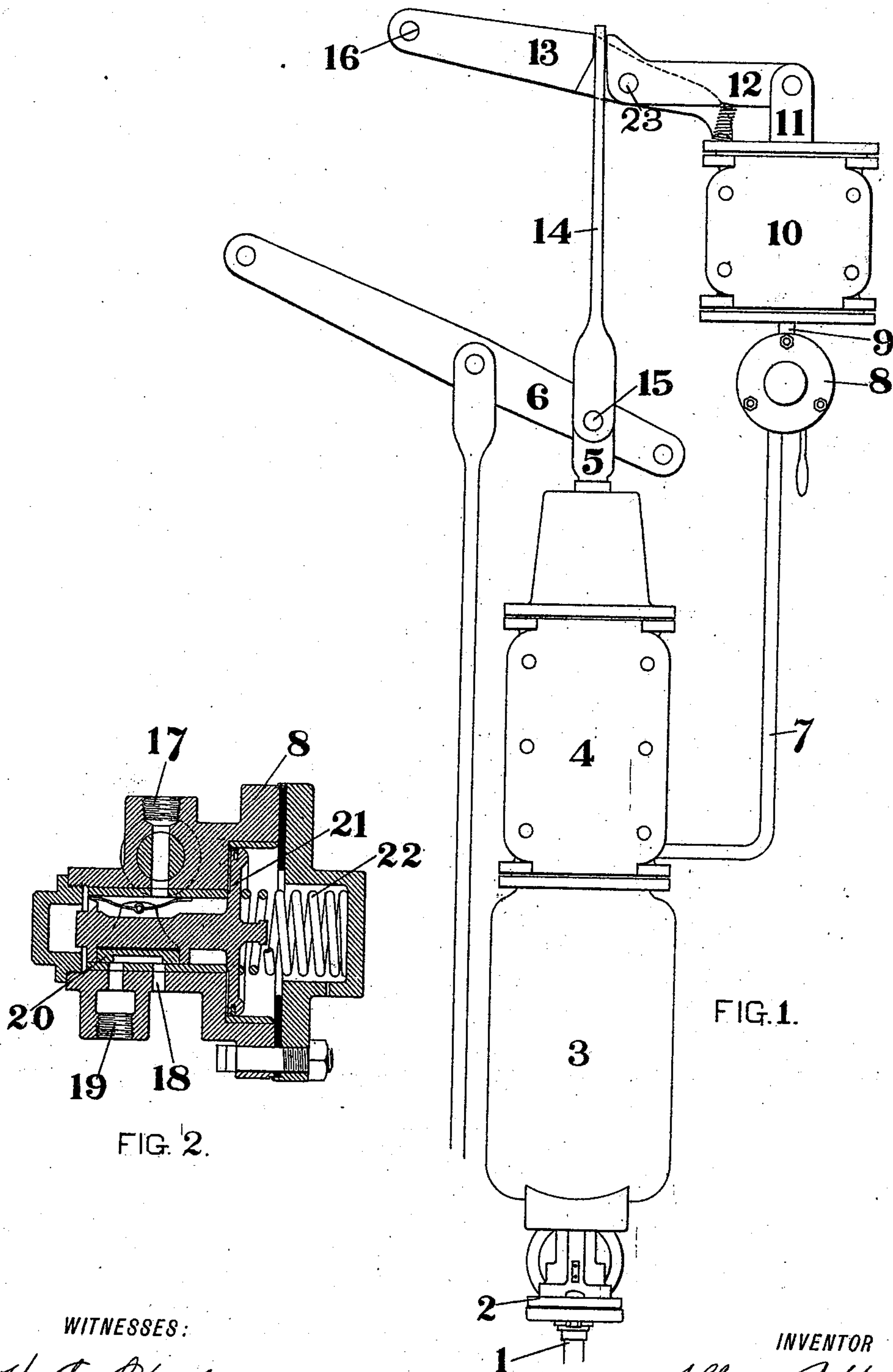


(No Model.)

A. P. MASSEY.
CAR BRAKE.

No. 501,017.

Patented July 4, 1893.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ALBERT P. MASSEY, OF WATERTOWN, NEW YORK.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 501,017, dated July 4, 1893.

Application filed May 16, 1892. Serial No. 433,073. (No model.)

To all whom it may concern:

Be it known that I, ALBERT P. MASSEY, a citizen of the United States, and a resident of Watertown, county of Jefferson, State of New York, have invented a new and useful Improvement in Car-Brakes, of which the following is a specification.

The object of my invention is to add to the braking power on cars by using a supplemental cylinder to increase the force after the slack is taken up. This device is similar to the one for which I have already applied for a patent, filed April 18, 1892, Serial No. 429,561. In that application the additional cylinder is connected to the train pipe and actuated by air from the train-pipe. In this device the additional cylinder is connected to the main brake cylinder and actuated by air from there.

Figure 1 is a plan of the device connected to the ordinary automatic brake system. Fig. 2 is a sectional view of the actuating valve.

In the drawings 1 represents a train-pipe which is connected to suitable means for actuating an automatic brake system.

2—3 and 4 are the well known triple-valve, auxiliary reservoir and brake cylinder now in use. The power of cylinder 4 is applied to the brake rigging as usual through the push rod 5 and lever 6. The pipe 7 connects the valve 8 with the main brake-cylinder 4. The passage 9 connects valve 8 with additional cylinder 10. The power of this additional cylinder is communicated to the brake rigging by means of the piston-rod 11, jointed lever 12—13 and pull rod 14 which is attached to the brake rigging by pin 15. The jointed lever 12—13 turns upon a fixed fulcrum 16.

Fig. 2 is an enlarged section of valve 8, the opening 17 connects the interior of the valve case with the brake cylinder 4 by means of pipe 7. The opening 19 is connected to additional cylinder 10 by passage 9, port 18 is open to the atmosphere; 20 is a valve controlling port 19.

21 is a piston for actuating valve 20.

22 is a spring to move the piston and valve one way.

The operation is as follows: In the normal condition the train-pipe 1 triple valve 2 and reservoir 3 are charged with air at consider-

able pressure, say seventy pounds. A reduction of pressure in the train-pipe causes the triple valve to act and open communication between reservoir 3 and main brake-cylinder 4, thereby forcing out piston rod 5 and applying the brakes, in a manner well known in the art. With this device added, as soon as the pressure in main brake-cylinder, which is connected to inside of the valve-case 8, exceeds the pressure of the spring 22 upon the piston 21 it causes piston 21 to shift valve 20 and open a passage through 19 from main brake-cylinder 4 to additional cylinder 10, whereupon the piston rod 11 is forced outward, causing the arm 12 of the jointed lever to revolve about pin 23 and seize rod 14 between the two jaws of the jointed lever; farther motion of the piston-rod 11 produces a stress on pull-rod 14 proportionate to the distances from the fulcrum 16 of rod 14 and piston rod 11. This stress is communicated to the brake-rigging through rod 14 additional to the stress of the main piston rod 5. The spring 22 should be of sufficient strength to resist movement of piston 21 until the piston in cylinder 4 has completed its stroke and taken up all the slack in order that the stroke of the piston in 10 may be limited and therefore require but little air.

What I claim as new, and desire to secure Letters Patent therefor, is—

In a fluid pressure brake system the combination of a main brake cylinder and piston; an additional brake cylinder and piston; a clutch mechanism connecting the piston of the additional brake cylinder with the brake rigging; a passage connecting the two brake cylinders; and an automatic valve set to open only at a desired fluid pressure in that passage; all combined and operating substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 13th day of May, 1892.

ALBERT P. MASSEY.

Witnesses:

HENRY W. BOYER,
MICHAEL J. MORKIN.