

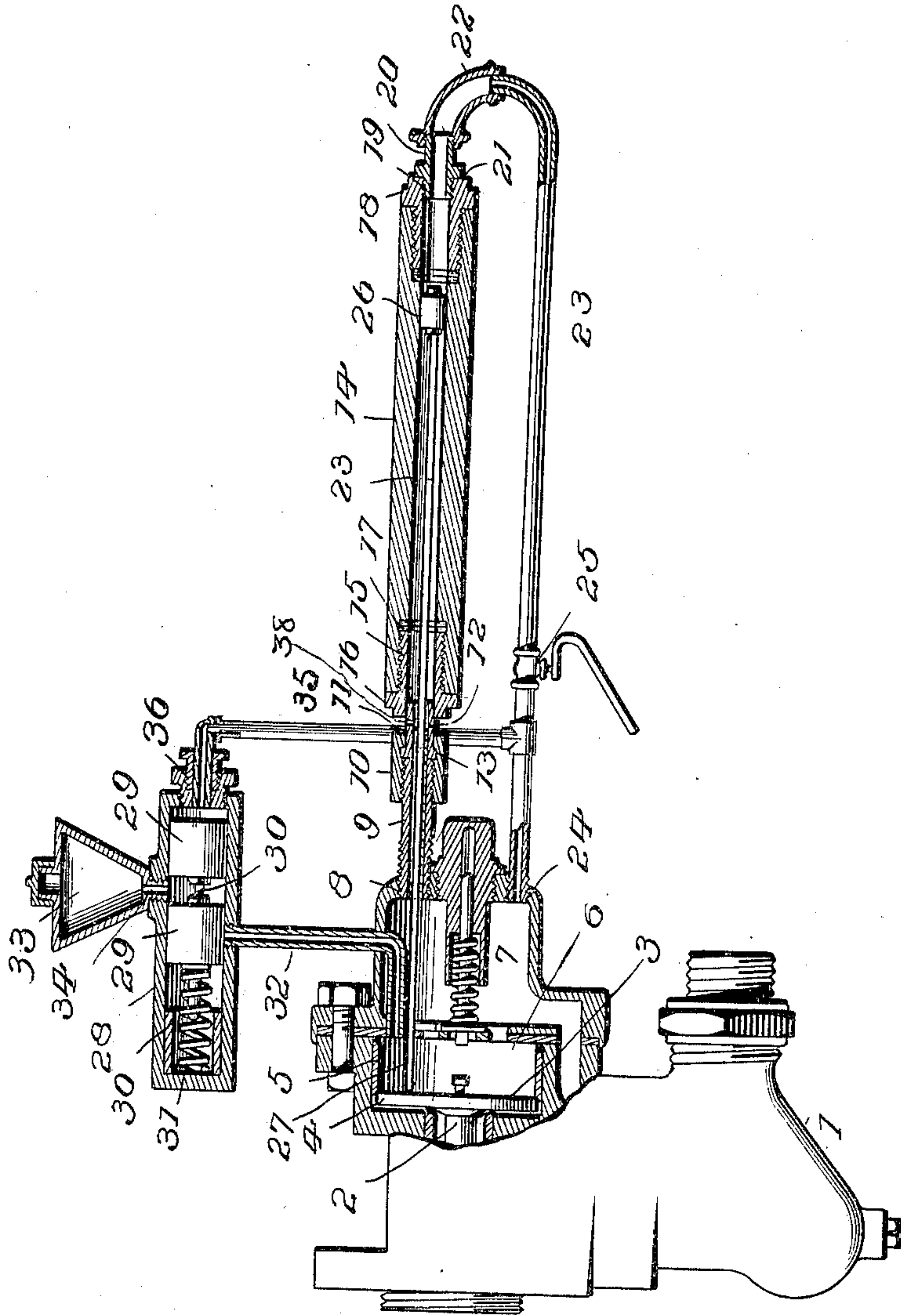
No. 682,499.

Patented Sept. 10, 1901.

J. W. SHAFER.
TRIPLE VALVE.

(Application filed Feb. 11, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN WILLIAM SHAFER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
TO BELLE BRADICK, OF SAME PLACE.

TRIPLE VALVE.

SPECIFICATION forming part of Letters Patent No. 682,499, dated September 10, 1901.

Application filed February 11, 1901. Serial No. 46,928. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM SHAFER, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Triple Valves, of which the following is a full, clear, and exact description.

My invention relates to certain improvements in air-brakes; and it consists of means whereby the triple valve is prevented from sticking in releasing the brakes, thereby obviating "flat wheels;" and with this and minor objects in view my invention consists of the parts and combination of parts, as will be hereinafter more fully set out.

The drawing illustrating my invention is an elevation of a triple valve, partly in section, with my invention embodied.

1 represents the well-known triple-valve body.

2 is the piston working in the slide-valve chamber, having the head 3, which is provided with the usual packing 4.

5 is a packing secured in the chamber 6, against which the head 3 works.

7 is the drain-cup. The top of the drain-cup is tapped at 8, and a short section of pipe 9, threaded at both ends, is secured in said tap.

10 is a union having internal screw-threads adapted to mesh with the threads on one end of the said pipe 9. The said union 10 is provided on one end with an annular inwardly-extending flange 11.

12 is a coupling having an annular rib or projection 13, adapted to work freely in the union 10 under the annular lug or projection 11 of said union, said coupling being held in position in the union by reason of its abutting one end of the pipe 9.

14 is a cylinder provided with interior screw-threads at each end.

15 is a plug having a central bore and provided with exterior screw-threads adapted to mesh with the screw-threads in one end of the cylinder 14, said plug having an annular projection 16.

17 represents washers of approved construction and material secured between the lower

end of the plug 15 and cylinder 14, thereby making a tight joint.

18 is a plug having a central bore and substantially of the same construction as the plug 15, the one difference being that the outer end of said plug is provided with screw-threads 19.

20 is another coupling having a central bore and provided with an annular rim or projection 21, below which are formed screw-threads adapted to mesh with the threads 19 of the plug 18.

22 is an elbow firmly secured to the coupling 20 by means of suitable screw-threads, and 23 is a pipe suitably secured to said elbow, said pipe 23 extending down to the drain-cup 7, into which it is tapped at 24, said pipe 23 being provided with a suitable cut-off 25.

26 is a piston adapted to work within the chamber or cylinder 14 and provided with a rod 27, extending through said cylinder, the coupling 12, the pipe 9, and drain-cup 7 and adapted to be in contact with the piston-head 3, as shown in the drawing. It will be noticed in the drawing that a packing is placed in the coupling 12 and pipe 9 around the piston-rod 27, whereby the rod fits snugly therein fluid-tight.

28 is a cylinder in which are mounted pistons 29, suitably connected by means of the rod 30. 31 is a coil-spring secured around said rod, one end of which is seated against one of the pistons, while the other end is seated against one end of said cylinder 28. 32 is a pipe leading from the said cylinder through the drain-cup 7 into the chamber 6.

33 is an oil cup or receptacle secured on top of the cylinder and having a suitable opening 34 leading into the chamber 28 above the pistons 29.

35 is a suitable pipe or way leading from the pipe 23 and connected to and having communication with the chamber 28 in front of the pistons 29 by means of the coupling 36.

38 is an outlet-port.

In releasing the brakes by increasing the train-pipe pressure heretofore it has been found that the slide-valve and piston-head 3, by reason of wear, &c., become tangent with their bearing, and thus have a tendency to

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 "stick," thus retarding, if not entirely pre-
 venting, their movement, whereby the brakes
 stick on the wheels, causing what is known as
 "flat wheels." This is obviated by my in-
 5 vention, inasmuch as a portion of the fluid
 from the train-pipe passes through the pipe
 23 into the chamber 14, where it strikes the
 piston 26, thereby forcing it down and by rea-
 son of the rod 27 bearing upon the head 3
 10 pushes said head, with its rod and sliding
 valve, into proper position and forces the
 same down. At the same time a portion of
 the fluid passes through the pipe 35 into the
 chamber 28 and forces the pistons 29 to one
 15 end of said chamber, thereby permitting oil
 from the oil-cup to pass through the pipe 32
 into the chamber 6 for lubricating said cham-
 ber every time the valve is operated. When
 the engineer knows that the triple valve is in
 20 perfect working condition, the cut-off is closed,
 as it is unnecessary for the piston 26 with its
 rod to operate upon the valve; but it will be
 seen that the automatic supply of oil to the
 chamber 6 is not interrupted inasmuch as the
 25 oiling mechanism is connected with the pipe
 23 below the cut-off.

What I claim, and desire to secure by Let-
 ters Patent, is—

1. The combination with a triple valve, of
 a cylinder connected with the drain-cup, a 30
 piston adapted to work in said cylinder and
 a piston-rod connected with said piston and
 adapted to operate the piston-rod and slide-
 valve and graduating-valve when the train-
 pipe pressure is increased. 35

2. The combination with a train-pipe valve,
 of a pipe leading from the drain-cup, a cyl-
 40 nder and a piston-rod connected with said
 pipe and the means for connecting said cyl-
 nder and piston-rod with said drain-cup, a
 piston-rod projecting into the piston-chamber
 and moving the piston, a piston, sliding
 valve and graduated valve.

3. The combination with a triple valve, of
 a pipe leading from the drain-cup, a cham- 45
 ber connected with said pipe, another pipe
 leading into the drain-cup, a coupling con-
 necting the last-named pipe and said cham-
 ber, a piston located within said chamber and
 a rod extending from said piston through the 50
 chamber into the triple-valve casing into con-
 tact with the piston-head 3.

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Witnesses:

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