

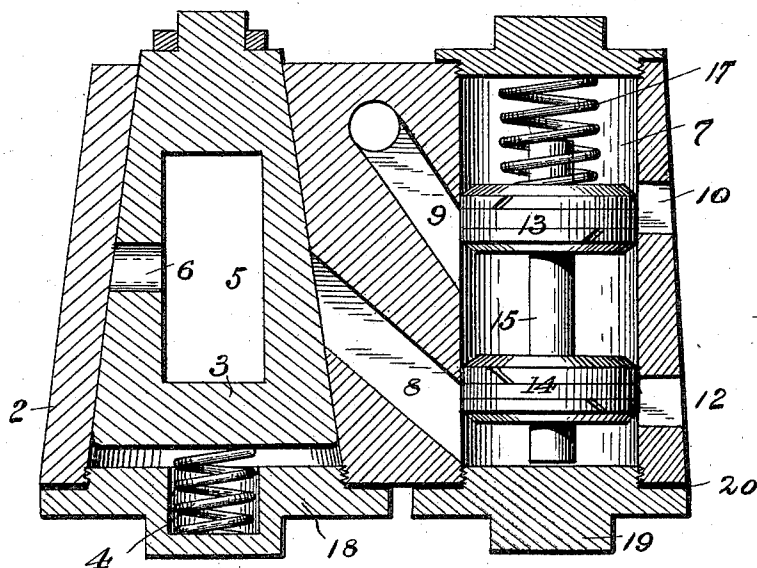
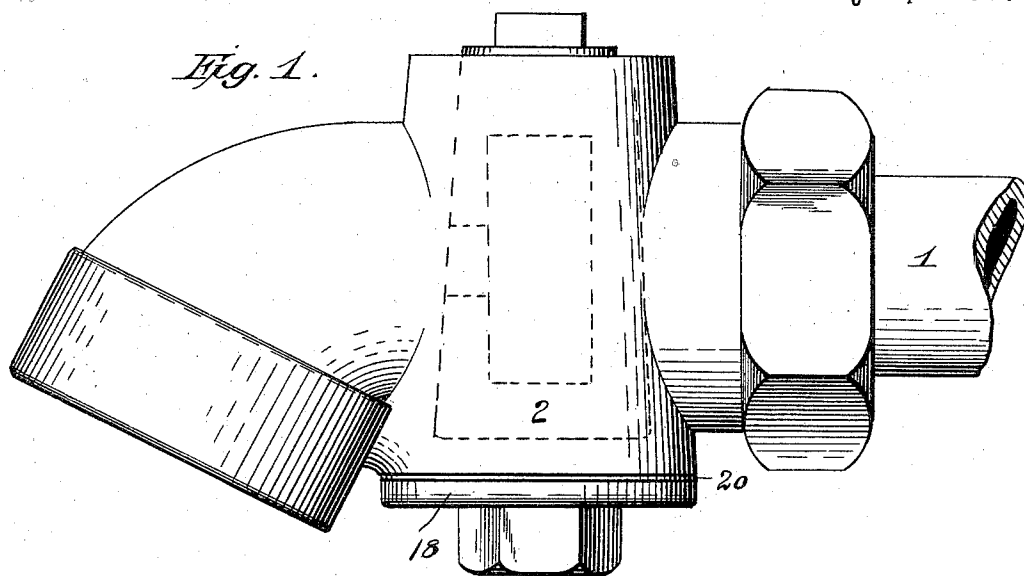
(No Model.)

2 Sheets—Sheet 1.

M. C. GLENN.
ANGLE COCK FOR AIR BRAKE PIPES.

No. 582,053.

Patented May 4, 1897.



Witnesses:
Frank L. Ouraud.
J. L. Coombs

Inventor:
Miles C. Glenn,
G. Louis Bagge & Co.
Attorneys.

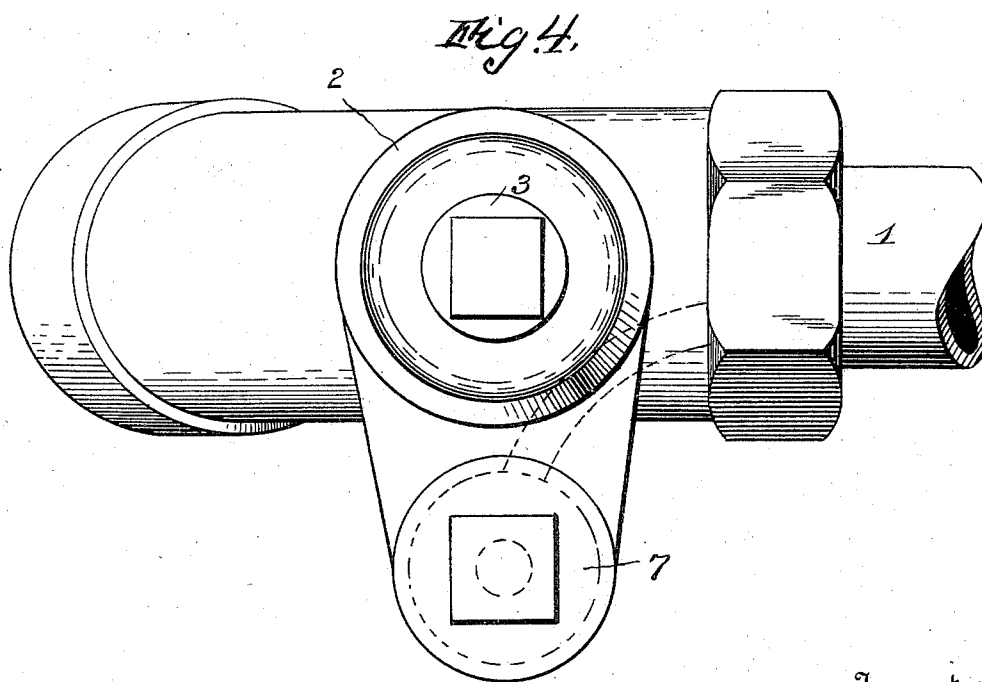
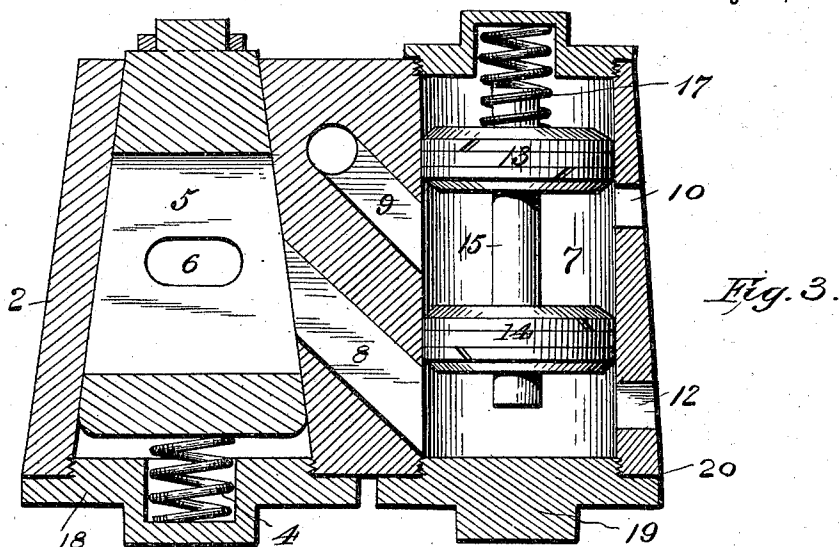
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2 Sheets—Sheet 2.

M. C. GLENN.
ANGLE COCK FOR AIR BRAKE PIPES.

No. 582,053.

Patented May 4, 1897.



Witnesses:
Frank L. Ourand
J. L. Clemons

Inventor:
Miles C. Glenn,
by Louis Dugga & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

MILES CICROE GLENN, OF DURHAM, NORTH CAROLINA.

ANGLE-COCK FOR AIR-BRAKE PIPES.

SPECIFICATION forming part of Letters Patent No. 582,053, dated May 4, 1897.

Application filed December 23, 1896. Serial No. 616,697. (No model.)

To all whom it may concern:

Be it known that I, MILES CICROE GLENN, a citizen of the United States, and a resident of Durham, in the county of Durham and State of North Carolina, have invented certain new and useful Improvements in Angle-Cocks for Air-Brake Pipes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in angle-cocks for the train-pipes of fluid-pressure air-brakes of that class or description in which the brakes are set by reducing the pressure in the train-pipe.

The object of the invention is to provide an improved construction of the same, whereby should any of the angle-cocks of the train be closed by unauthorized persons or through accident or carelessness the brakes of the entire train will be set and the train be stopped.

The invention consists in the novel construction and combination of parts herein-after fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of an angle-cock constructed in accordance with my invention. Fig. 2 is a transverse section of the same, showing the valve open. Fig. 3 is a similar view showing the valve closed. Fig. 4 is a plan view.

In the said drawings the reference-numeral 1 designates the train-pipe, which contains the air under pressure by which the brakes are set by decreasing the pressure therein through the engineer's valve in the locomotive-cab, as usual.

The numeral 2 designates the valve-casing, having a tapering bore, in which is seated a correspondingly-tapered plug-valve 3, which is operated by the usual handle. (Not shown.)

The numeral 4 designates a coiled spring bearing against the lower end of the valve. The said valve is formed with a port or opening 5, which when the valve is open is alined with the train-pipe, so as to allow a free passage of the air. At one side the valve is formed with a port or opening 6, intersecting or communicating with the opening or port 5.

Cast integral with said valve-casing is a cylinder 7, provided with an inclined port 8, communicating with the lower end thereof and with the tapering bore of the valve-casing. Also communicating with said cylinder, above port 8, is an inclined port 9, leading to the train-pipe and communicating therewith. (See dotted lines, Fig. 4.) The cylinder is also provided with outlet-openings 10 and 12, leading to the atmosphere. Located in said cylinder are two pistons 13 and 14, connected together by means of a valve-stem 15, and against the upper piston 13 abuts a coiled spring 17.

The numerals 18 and 19 designate screw-caps, closing the lower ends of the cylinder and valve-casing, respectively. The said pistons are provided with packing-rings 20.

The operation is as follows: The brakes having been coupled up and tested and the train-pipe charged as usual, the valve is opened and will occupy the position shown in Fig. 1, so that air can pass through the large port 5 to the cars that may be behind it. No air can pass through port 8, as this port is blanked or closed by the plug-valve. It will also be observed that no air can escape or pass through small port 6 in the valve, as it is closed or blanked by the valve-casing. Now, if the plug-valve is turned one-quarter of a turn, which is the cut-off portion, it will bring port 6 into the same position with respect to the train-pipe which port 5 previously occupied and cause said port to register or communicate with port 8. The air from the train-pipe will now rush through ports 6 and 5 to port or passage 8 to the under side of piston 14 and, overcoming the tension of spring 17, will raise the latter and pistons 14 and 13 and escape through exhaust or outlet opening 12 to the atmosphere. Air will also escape from the train-pipe through passage or port 8 and out of the cylinder. Thus the pressure in the train-pipe will be relieved, causing the brakes to be set.

As before stated, the passage or port 9 communicates with the train-pipe, and so long as there is any pressure in the train-pipe it has a free passage through said port into the cylinder between the said pistons, thus maintaining the same pressure in the cylinder that

there is in the train-pipe. These pistons are of the same diameter, and consequently their areas are the same, so that they are balanced, and therefore the spring 17 is employed to
5 force them down and almost close the outlet-openings 10 and 12. It will be seen that when said pistons are in normal position the openings 10 and 12 are partially opened above and below the pistons, respectively, so that in
10 case any air should leak from the plug-valve or around the packing-rings of the pistons it can escape.

It will be noticed that when the cock is turned as described the pressure is reduced
15 in the train-pipe on both sides of the plug-valve, so that the brakes of the entire train are set.

It will be understood that the valve of the last car of the train is closed, and as port 6
20 will then be open to the atmosphere the pistons will not be elevated and the pressure in the train-pipe will be maintained.

When the pressure under piston 14 has been

reduced below the resistance of spring 17, the said spring will reseal the pistons, so as to prevent waste of air from the train-pipe.

Having thus fully described my invention, what I claim is—

In an angle-cock for fluid-pressure brakes, the combination with the train-pipe, the
30 valve-casing, the plug-valve having a port extending through the same, and a port intersecting the same, of the cylinder having a passage communicating with said casing, and a passage leading to the train-pipe and
35 with outlet-openings, the piston-rod, the pistons connected therewith and the coiled spring for seating said pistons; all constructed and operating substantially as described.

In testimony that I claim the foregoing as
40 my own I have hereunto affixed my signature in presence of two witnesses.

MILES CICROE GLENN.

Witnesses:

W. J. HOLLOWAY,
W. B. HURLY.