

No. 714,747.

C. O. ROWLEY.
VALVE.

Patented Dec. 2, 1902.

(Application filed July 14, 1902.)

(No Model.)

Fig. 1.

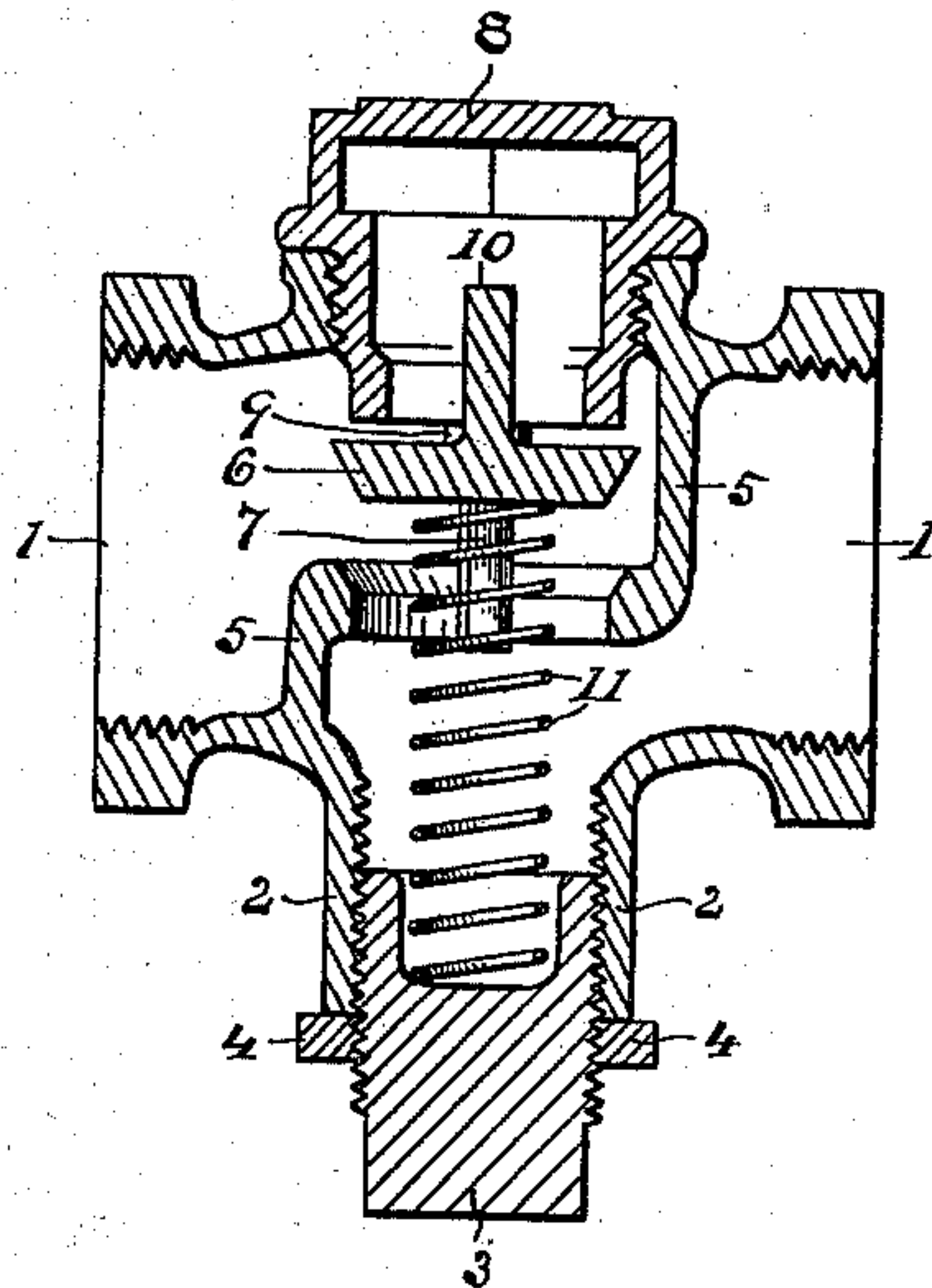


Fig. 2.

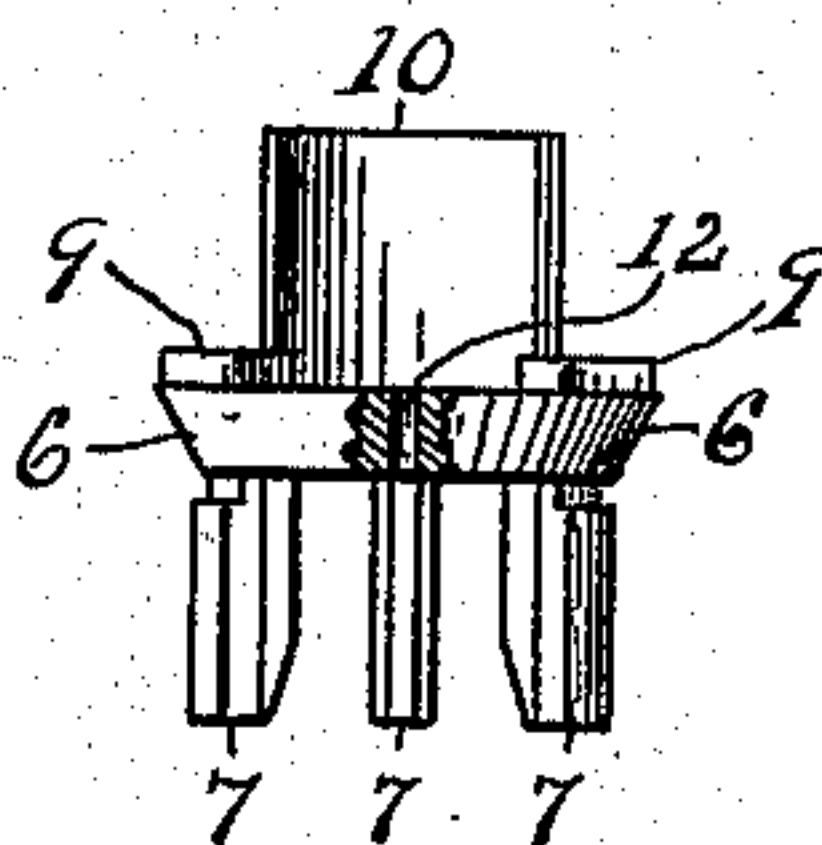
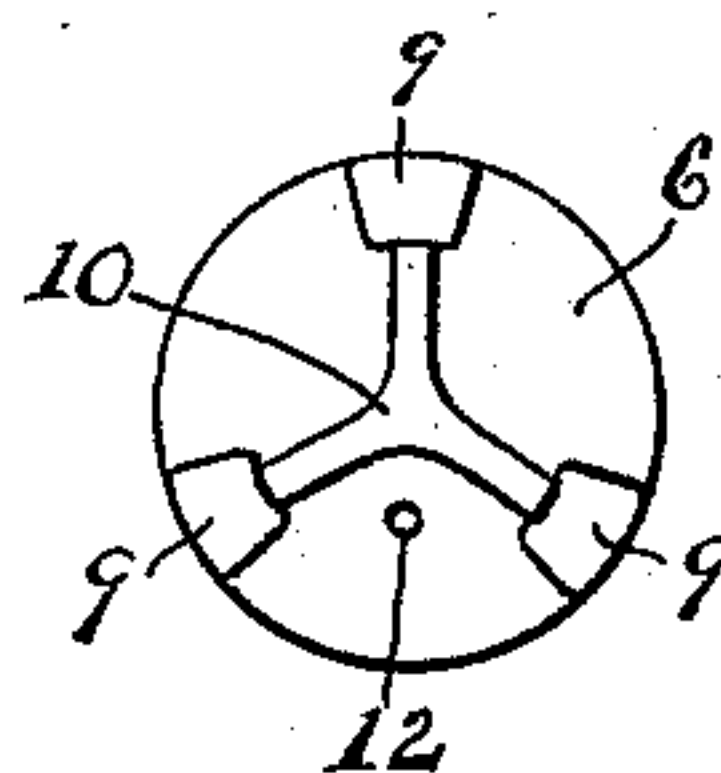


Fig. 3.



WITNESSES.

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VALVE.

SPECIFICATION forming part of Letters Patent No. 714,747, dated December 2, 1902.

Application filed July 14, 1902. Serial No. 115,417. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. ROWLEY, a citizen of the United States of America, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to safety check-valves for use in connection with fluid-pressure brake mechanism; and its object is to prevent the sudden setting of the brakes when an accident occurs—such as the dividing of the train, separation of the hose-coupling, or bursting of the hose—and to provide an adjustment to regulate the amount of reduction in pressure which will be required to close the valve, so that the valve may be set to operate as soon as there is a reduction of pressure below the ordinary fluctuations caused by leakage, &c., and so that the same valve may be used in connection with systems operating under different pressures and conditions.

It is also an object of this invention to so arrange and construct the same that a comparatively long spring for actuating the valve may be used, thus providing for a greater throw of the valve and the free passage of the air therethrough, and to provide certain other new and useful features, all as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a device embodying my invention; Fig. 2, a side elevation of the valve detached, and Fig. 3 a top plan view of the valve.

As shown in the drawings, 1 is the casing, similar in form to that of a globe-valve, having screw-threaded openings to receive the ends of the train-pipe and provided with a downwardly-extending portion 2 at its lower side, which is internally screw-threaded and closed by a screw-plug 3, held adjusted by a lock-nut 4. Within the casing is a wall 5, which divides the same into two parts and forms a seat extending longitudinally thereof for the valve 6, which valve is provided with downwardly-extending lugs 7 to engage the opening in the wall forming the seat and guide the valve. Opposite the valve-seat and

in axial line therewith and with the portion 2 of the casing is an opening in the top of the casing closed by a hollow screw-cap 8, which extends into the casing and forms a stop to engage the projection 9 on the top of the valve and also forms a guide to receive the upwardly-extended portion or valve-stem 10 of said valve. To normally hold the valve away from its seat and in contact with the cap 8, a coiled spring 11 is provided which engages the valve at one end and extending downward within the portion 2 of the casing engages a recess provided therefor in the plug 3 at its opposite end. A small hole 12 is provided in the valve, so that when the valve is seated by the parting of the train-pipe or other accident, causing a great reduction in the pressure at the lower side of the valve, the air will escape through said hole and, reducing the pressure above the valve, slowly set the brakes.

The tension of the spring 11 may be increased or diminished, so that the valve will seat with a greater or less reduction in the pressure by screwing the plug 3 in or out, and the device is thus made adaptable for use in brake systems where a very high pressure is carried or in those carrying a lower pressure, and by forming the casing with the extension 2, thus providing for the use of a comparatively long spring, the throw of the valve may be increased to increase the opening for the passage of the air. In this construction the valve is normally held away from the cap by the thin projections 9, and thus the air-pressure can act on the top of the valve to force it to its seat only through the narrow passages between the projections, and as said valve is also held some distance from its seat it is not affected by the fluctuations in pressure caused by leakage, &c., as readily as it would be if the valve were raised but a short distance and the air had free access to its upper side, and therefore a spring which acts with a less reduction in pressure may be used.

It is very desirable that the valve be operated by as small a reduction in pressure as may be and not be operated by the ordinary fluctuations caused by leakage, &c., for the reason that if the valve closes early the brakes

are prevented from being set before the valve closes to hold the pressure and set them gradually. It is therefore imperative that some means for adjusting the tension of the
5 spring be provided, especially as springs of the same size and form seldom have the same strength and after long use become weaker.

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

10 1. In a check-valve for brake systems, the combination with the casing having a valve-seat and an opening below the seat, of a valve provided with an opening therethrough adapted to engage the seat, a spring to engage the
15 valve and normally hold the same away from its seat, and a screw-plug within said opening in the casing and engaging the lower end of the spring.

20 2. In a check-valve for brake systems, the combination with the casing provided with a wall formed with a valve-seat and an opening above the seat in axial line therewith and

an extension below the seat open at its lower end and internally screw-threaded, a valve to engage the seat and provided with an open- 25 ing for the slow escape of the air, lugs on said valve engaging the seat-opening to guide the valve, a hollow screw-cap in the opening above the valve, a valve-stem on the valve engaging the cap and guiding the valve, pro- 30 jections on the valve to engage the inner end of the cap, a spring engaging the lower side of the valve and extending downward in the extension of the casing, a screw-threaded plug within the lower end of the extension and en- 35 gaging the lower end of said spring, and a lock-nut on said plug.

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

CHARLES O. ROWLEY.

Witnesses:

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