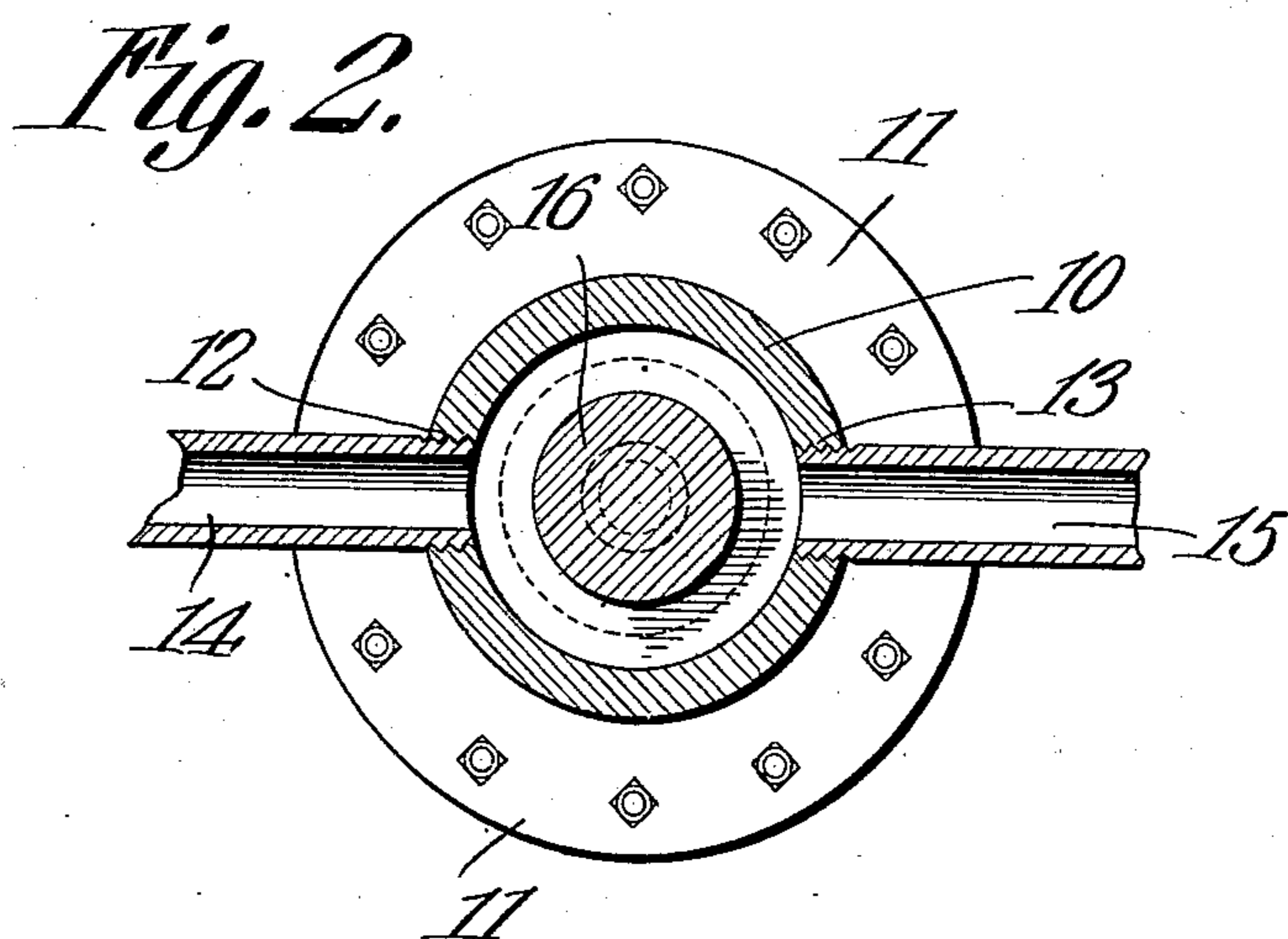
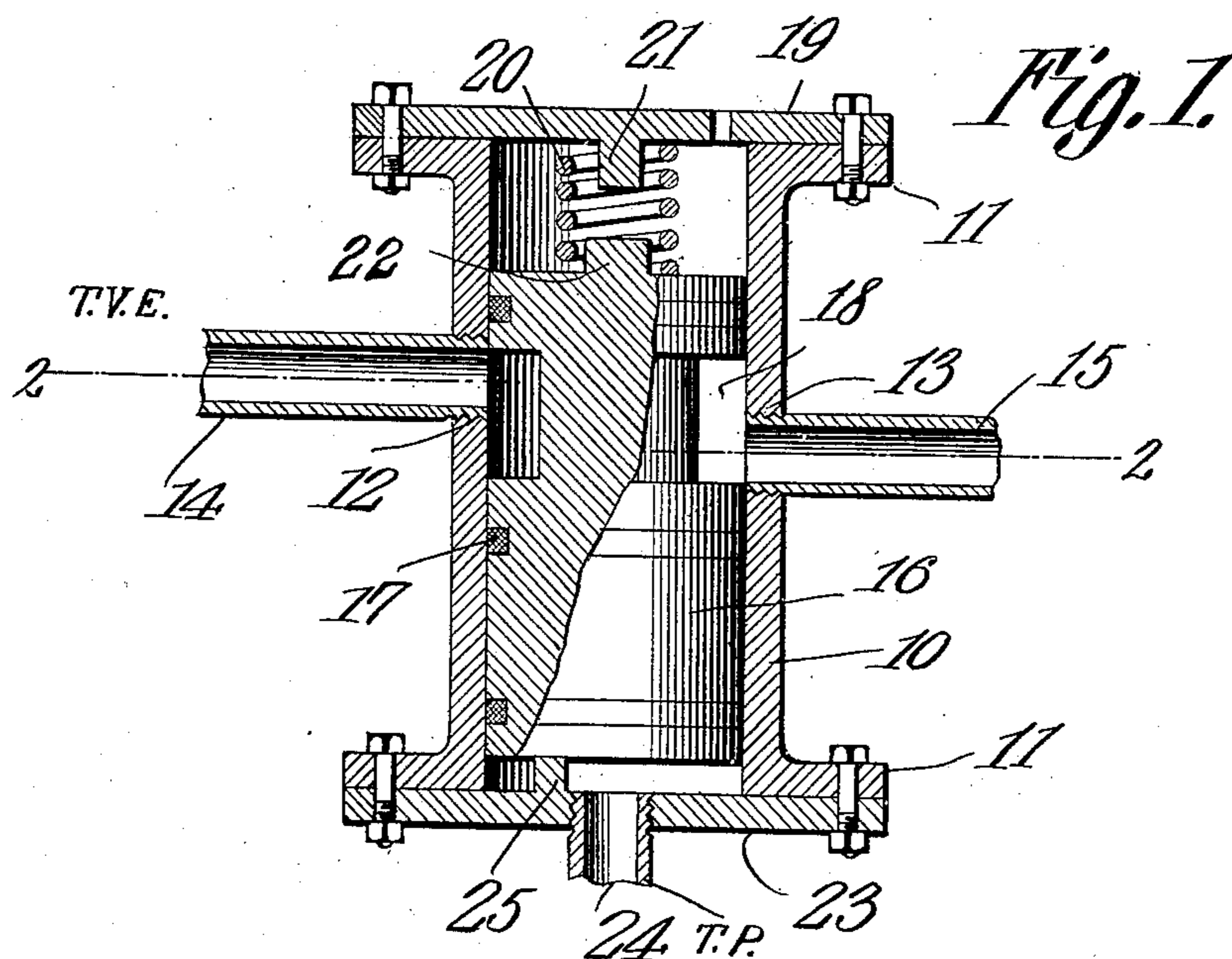


C. H. HUGHES.
 TRIPLE VALVE GOVERNOR.
 APPLICATION FILED JULY 16, 1908.

917,946.

Patented Apr. 13, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES HORNING HUGHES, OF OGDEN, UTAH.

TRIPLE-VALVE GOVERNOR.

No. 917,946.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed July 16, 1908. Serial No. 443,852.

To all whom it may concern:

Be it known that I, CHARLES H. HUGHES, a citizen of the United States, residing at Ogden, in the county of Weber and State of Utah, have invented a new and useful Triple-Valve Governor, of which the following is a specification.

This invention relates to valves and more especially to a certain valve designed to govern the triple valves of air brakes in a train.

One object of the invention is to provide a simple valve which will automatically govern the exhaust of the triple valve of a car brake in such manner that the brakes at various parts of the train will be released at substantially the same time, thus avoiding the present inconvenience arising from the greater pressure in the train line at the front end of the train releasing the brakes at the front end first and at the rear of the train afterward. As is well known when the air is thrown back through the train line the triple valve of the first car momentarily receives a greater pressure than that of the second and so on. The reason for this is that each auxiliary reservoir is being filled with this air thus robbing the train line as the air blows back therethrough.

The object of the invention is to prevent the brakes of the cars nearest the engine from relieving sooner than those on the rear end of the train, thus avoiding the parting of the train and other damage to cars and their contents.

The invention consists in a valve casing wherein a peculiar valve is mounted arranged to automatically regulate the exhaust from the triple valve, these parts being of simple and improved construction.

The invention further consists of certain novel details of construction and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings like characters of reference indicate like parts in the several views, and; Figure 1 is a vertical section through the valve a portion of certain parts being shown in elevation. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

The numeral 10 indicates the valve casing preferably cylindrical in form and open at each end. The valve casing 10 is preferably provided with flanges 11 and also

has a pair of ports 12 and 13 disposed diametrically opposite the casing but staggered so as to be entirely out of alinement with each other vertically. To the port 10 is connected a pipe 14 communicating with the triple valve of an air brake and the port 13 is connected to the retaining pipe 15 so as to permit the use of a retainer when desired, or it may communicate directly with the exhaust.

A cylindrical valve is held to slide within the valve casing 10 being provided with suitable flax or other suitable packing 17. An annular port 18 is formed around this valve and when the valve is in the position indicated in Fig. 1, one edge of the port is in alinement with the lower edge of the opening through the pipe 15 while the other edge of the port is in alinement with the upper edge of the opening through the pipe 14. In this manner this port 18 is of such length that the port 12 will constantly remain open while the port 15 may be partly closed by moving the valve, full closing being prevented by interengaging stops on the piston valve and the head of the cylinder. In order to normally hold the valve in the position shown in Fig. 1 there is provided a cover 19 secured to the flange by means of bolts passing through a series of spaced holes around both flange and cover. A spring 20 is held between the cover and the valve 16, thus normally keeping the same to the position shown in Fig. 1. In order to retain the spring in proper position within the valve casing, there is provided on the cover a lug 21 and on the valve a lug 22, these lugs being so arranged as to limit the motions of the valve upward and prevent the pipe 15 from being entirely closed at any time. A bottom head or cover 23 is also provided and has therein a threaded opening to receive the end of a pipe 24 which is connected to the train pipe. A small lug 25 formed on this head serves to limit the downward movement of the valve 16. This head is held upon the body in the same manner as the top head or cover. When in the position indicated in Fig. 1, the tension of the spring is preferably about 55 pounds, that being the usual pressure commonly adopted in air brake systems for the train line, although it may be more or less than 55 pounds. It is to be understood that by this is meant the minimum pressure allowable in such a line and not

the pressure commonly found in the cars at the front of the train. If, now, pressure be admitted to the train line of a long train it will, as has been heretofore noted, be
 5 greater at the front of the train than at the rear. This will cause each of the valves 16 on the forward cars to move upward to a certain amount and the greater the pressure the greater the upward movement will be.
 10 In this manner the different exhaust pipes 15 are partly closed and this closure, depending as it does upon the pressure, will be of such nature as to simultaneously cause all the triple valves to exhaust. The brakes
 15 will thus be simultaneously released.

Attention is especially called to the fact that this regulator contains but a single moving part and one spring. By reason of this the construction of such devices is
 20 greatly simplified as the complicated structures usually adopted have been rendered unnecessary.

Having thus described the invention, what is claimed as new, is:—

25 1. In a device of the class described, a valve casing comprising a cylindrical body having a pair of ports arranged at different points in the length of the casing, a valve mounted in the casing and provided with an
 30 annular port for placing the two casing ports in communication with each other, means for admitting air under pressure to one end of the casing to force the valve to-
 35 ward closed position, a spring arranged at the opposite end of the casing and resisting

closing movement of the valve, and means for limiting the valve movement and preventing the valve from assuming full closed position.

2. In a device of the kind described, a 40 valve casing comprising a cylindrical body having a pair of ports diametrically opposite but in staggered relation longitudinally, the amount of said staggering equaling more than one diameter of the port, a valve 45 held in said casing provided with an annular port having a width equal to the longitudinal displacement between the farthest point of the ports in the casing, a head on said casing, a spring held between 50 said valve and said head, lugs on said casing and head to retain the spring in position and limit the upward movement of the valve in the casing, a second head having an open- 55 ing therein, a pipe held in said opening to afford communication with a train pipe, a stop on the second head to limit the downward movement of the valve in the casing, a second pipe held in the upper port to af- 60 ford communication with the triple valve exhaust port of an air brake, and a third pipe held in the lower port of the casing to afford communication with the atmosphere.

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

CHARLES HORNING HUGHES.

Witnesses:

CHARLES H. THAYER,
 VALENTINE GIDEON.