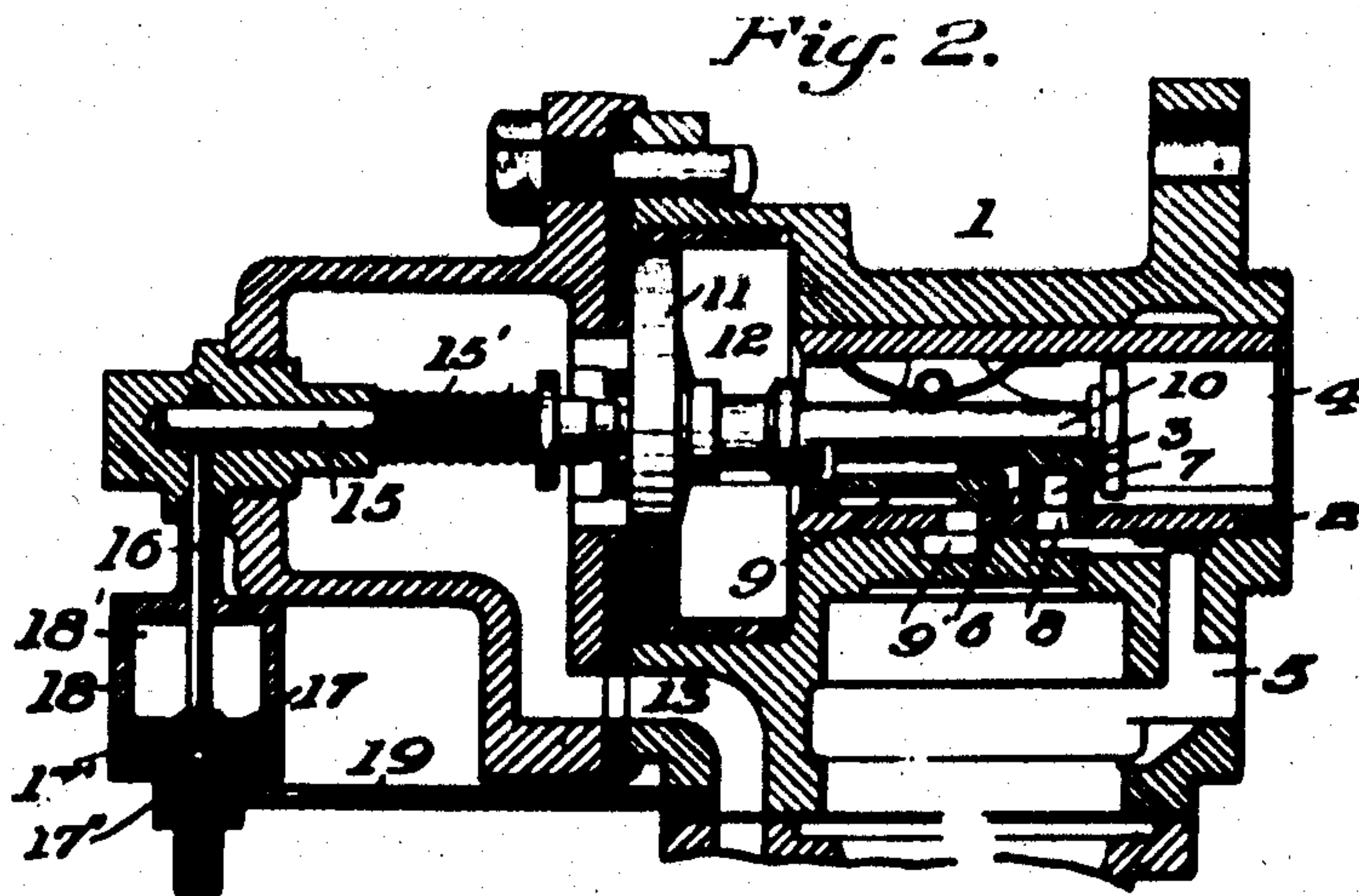
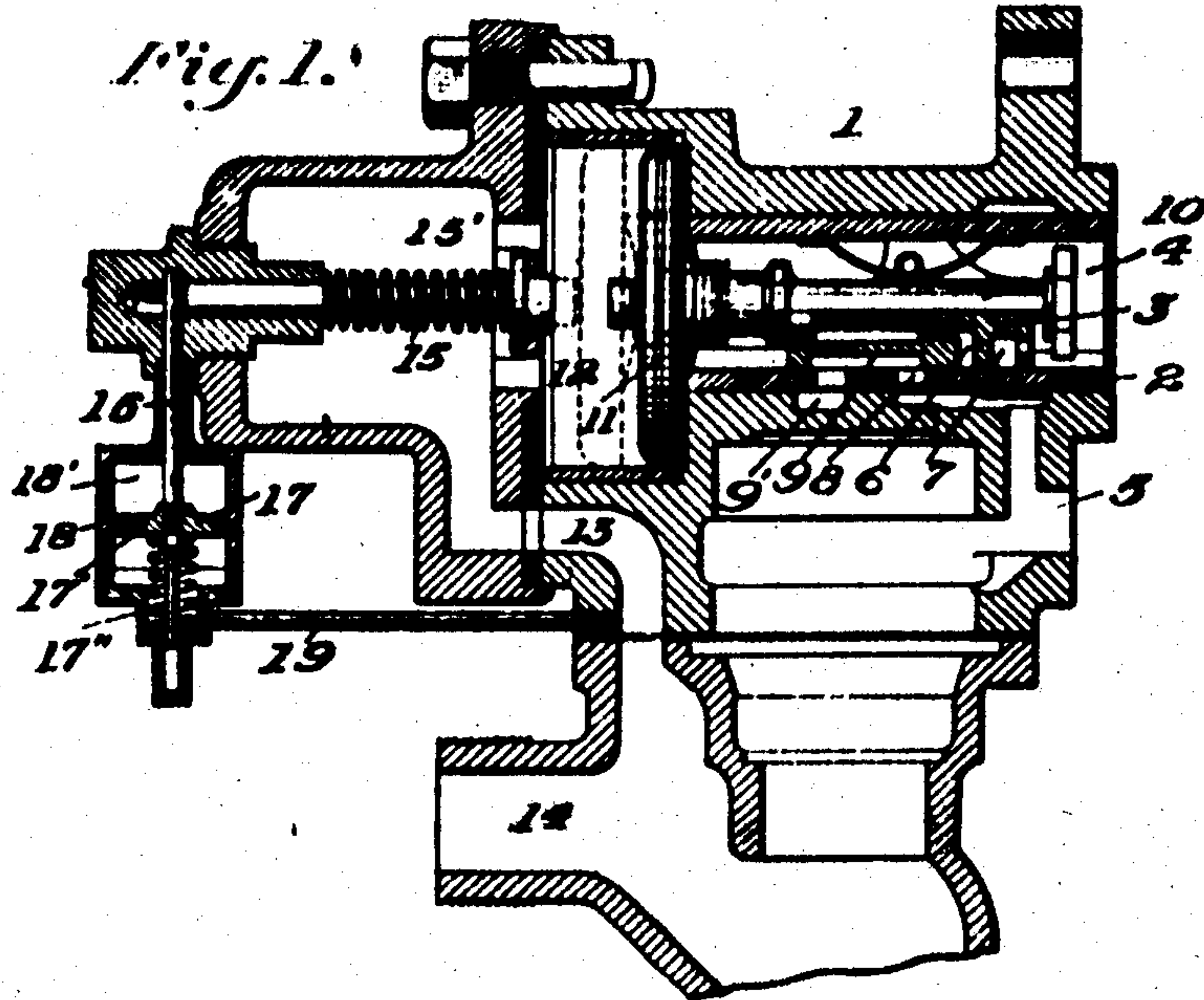


A. V. WESTER.
 AUTOMATIC TRIPLE VALVE FOR AIR BRAKES.
 APPLICATION FILED FEB. 18, 1909.

945,654.

Patented Jan. 4, 1910



WITNESSES
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BEST AVAILABLE COPY
UNITED STATES PATENT OFFICE.

ALBERT V. WESTER, OF GALLITZIN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
ROBERT G. WOODSIDE, OF PITTSBURG, PENNSYLVANIA.

AUTOMATIC TRIPLE VALVE FOR AIR-BRAKES.

945,634.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed February 18, 1909. Serial No. 479,537.

To all whom it may concern:

Be it known that I, ALBERT V. WESTER, a resident of Gallitzin, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Automatic Triple Valves for Air-Brakes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to valve mechanism for air brake systems and has special reference to what are known as triple valves in this class. In these triple valves as generally used at the present time the valve employed is held from the emergency position by a spring, the pressure of which must be overcome when it is desired to operate the emergency brake, and such spring may cause a sudden setting of the brakes by reason of the weakening of said spring, or by reason of the possible variation in the tension of one or more springs in a train the cars may all be emergency set. In case of a sticky slide valve it may require more pressure than usual to throw such valve, and an increased lowering of pressure in the train pipe to overcome such sticking may move the valve so quickly when it finally does move as to throw it to emergency.

The object of my invention is to overcome these objections and to provide a cheap, simple and efficient form of a lock for such mechanism, which will be positive and will be operated by the service line, so that all the valves in the train will be operated alike and at the same time.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved valve mechanism for air brake systems, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 is a sectional view of a triple valve embodying my invention. Fig. 2 is a like view of a portion of said valve showing a different position of the valves therein.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing 1 represents the ordinary type of a triple valve and 2 is

the slide valve seat therein for the slide valve 3 which is operated to admit air from the auxiliary reservoir (not shown) through the port 4 to the brake cylinder (not shown) by means of the port 5, and to these ports respectively the said reservoir and cylinder are suitably connected in the usual manner.

Within the slide valve 3 are the ports 6 and 7 which govern the admission of air from the auxiliary valve (not shown) through port 8 to the brake cylinder, and when the slide valve 3 is in the position shown in Fig. 1, the said port 8 is connected through the cavity 9 in said valve 3 to the exhaust 10, as shown. The slide valve 3 is connected by the spool 11 to the piston head 12 and is normally held in the position shown in Fig. 1 by the pressure of the air in the train pipe (not shown), but which is normally in communication with the chamber 13 for the piston 11 through the passageway 14 and boss 15 and to the latter of which such train pipe or line is connected in the usual manner.

When the pressure is decreased in the chamber 12 from the decrease of pressure in the train pipe, the piston 11 will travel to the left to assume the position as shown in dotted lines in Fig. 1 and will carry the slide valve 3 with it until port 6 on said valve registers with the port 8 to thus allow a slight pressure to be admitted thereby to the brake cylinder to set the brakes in the usual manner. When the piston 11 is in this position it is held by means of the one end of a graduating stem or rod 16 from further movement, as shown by the dotted lines in Fig. 1, and this rod is locked from further movement by the rod or bolt 17 extending at right angles to said rod 16 and engaging with the other end of said rod 16, which rod or bolt 17 is carried by a piston head 18 in the cylinder 19 and normally held in position by the spring 20, and this cylinder is suitably connected with the air from the train pipe as by means of the pipe 21 connecting the end of said cylinder with the passageway 14 of the triple valve 1.

A small leak hole 22 in the piston 18 allows of a very slow leak through the same, so that said piston will not move outwardly unless there is a sudden drop in pressure in train pipe, but when such sudden drop in pressure does occur, as when it is desired to set the emergency brake, the said hole or

opening 17' is not sufficient to permit equalization and the said piston is therefore forced downwardly by the expansion of the air in the inner portion 18' of the cylinder 18, which will thereby withdraw the bolt 16 from the rod 15 to allow the piston 11 to be forced sufficiently outward or to the left to cause port 7 in the valve 3 to register with port 8 and allow a practically unimpeded flow from auxiliary cylinder or reservoir through these ports to the brake cylinder, as shown in Fig. 2. When the brake valve is closed and pressure in the train pipe reaches its normal condition the piston 11 in the chamber 12 will be forced to its normal position as shown in Fig. 1, which will allow the rod 15 to be forced back by the spring 15' around the same, and thus permit the rod or bolt 16 to again assume the position as shown in said Fig. 1 through its spring 17'.

It will thus be seen that my improved triple valve for air-brake systems will provide for a locking of the slide valve employed therein by means of devices connected to the service line and engaging therewith, and by such means which will be conveniently, readily and quickly operated and will not get out of order. The lock can easily and quickly be applied to the ordinary type of quick acting triple valves and without any great expense or addition of complicated parts thereto, and being self-acting requires no attention or care beyond the ordinary such as is given to these valves. The locking device is made in the form of an attachment and can be applied to any triple valve without interfering with any of the parts or adjustment of such valve.

Various modifications and changes in the design, construction and operation of my improved triple valve for air-brake systems may be resorted to, without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as my invention and desire to secure by Letters Patent, is--

1. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, and means exteriorly of the triple valve casing engaging with said rod and operatively connected to the train pipe to positively lock said rod and piston.

2. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, and a rod exteriorly of the triple valve casing engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

3. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, and a rod connected to a piston ex-

teriorly of the triple valve casing for engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

4. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, a cylinder exteriorly of the triple valve casing, a piston within said cylinder, and a rod connected to said last named piston for engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

5. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, a cylinder exteriorly of the triple valve casing, a piston within said cylinder, a pipe connecting said cylinder and the train pipe, and a rod connected to said last named piston for engaging with said first named rod and operated by said cylinder through said pipe and train pipe to positively lock said first named rod and piston.

6. In a triple valve for air brakes, the combination with the slide valve and its piston, of a rod adapted to be engaged by said piston, a cylinder exteriorly of the triple valve casing, a piston within said cylinder, a pipe connecting said cylinder and the train pipe, said last named piston having a leak hole therein, and a rod connected to said last named piston for engaging with said first named rod and operated by said cylinder through said pipe and train pipe to positively lock said first named rod and piston.

7. In a triple valve for air brakes, the combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, and means exteriorly of the triple valve casing engaging with said rod and operatively connected to the train pipe to positively lock said rod and piston.

8. In a triple valve for air brakes, the combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, and a rod exteriorly of the triple valve casing engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

9. In a triple valve for air brakes, the combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, and a rod connected to a piston exteriorly of the triple valve casing for engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

10. In a triple valve for air brakes, the combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, a cylinder exteriorly

of the triple valve casing, a piston within said cylinder, and a rod connected to said last named piston for engaging with said first named rod and operatively connected to the train pipe to positively lock said first named rod and piston.

11. In a triple valve for air brakes, the combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, a cylinder exteriorly of the triple valve casing, a piston within said cylinder, a pipe connecting said cylinder and the train pipe, and a rod connected to said last named piston for engaging with said first named rod and operated by said cylinder through said pipe and train pipe to positively lock said first named rod and piston.

12. In a triple valve for air brakes, the

combination with the slide valve and its piston, of a spring operated rod adapted to be engaged by said piston, a cylinder exteriorly of the triple valve casing, a piston within said cylinder, a pipe connecting said cylinder and the train pipe, said last named piston having a leak hole therein, and a rod connected to said last named piston for engaging with said first named rod and operated by said cylinder through said pipe and train pipe to positively lock said first named rod and piston.

In testimony whereof I, the said ALBERT V. WESTER, have hereunto set my hand.

ALBERT V. WESTER.

Witnesses:

JAMES L. WHEEN,
J. N. COOK.