

A. O. CURRY.  
CONTROLLING VALVE.  
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1,155,217.

Patented Sept. 28, 1915.

Fig. 1.

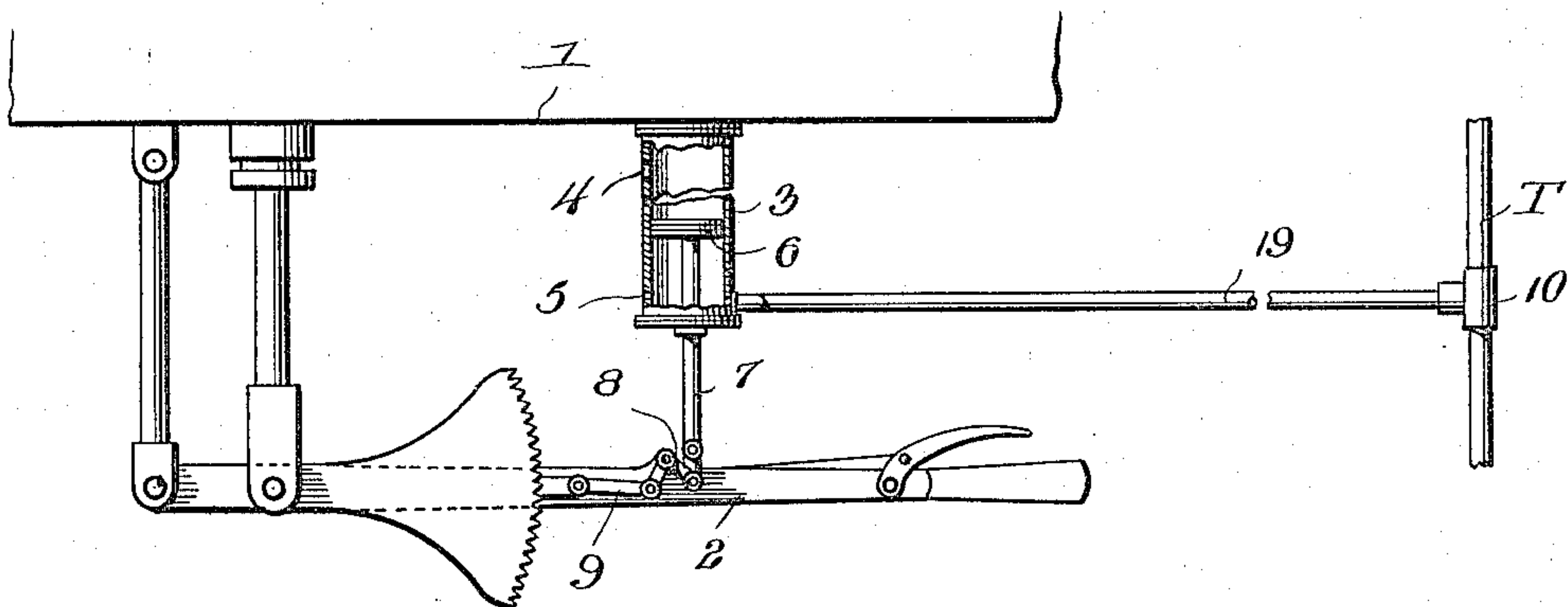


Fig. 2.

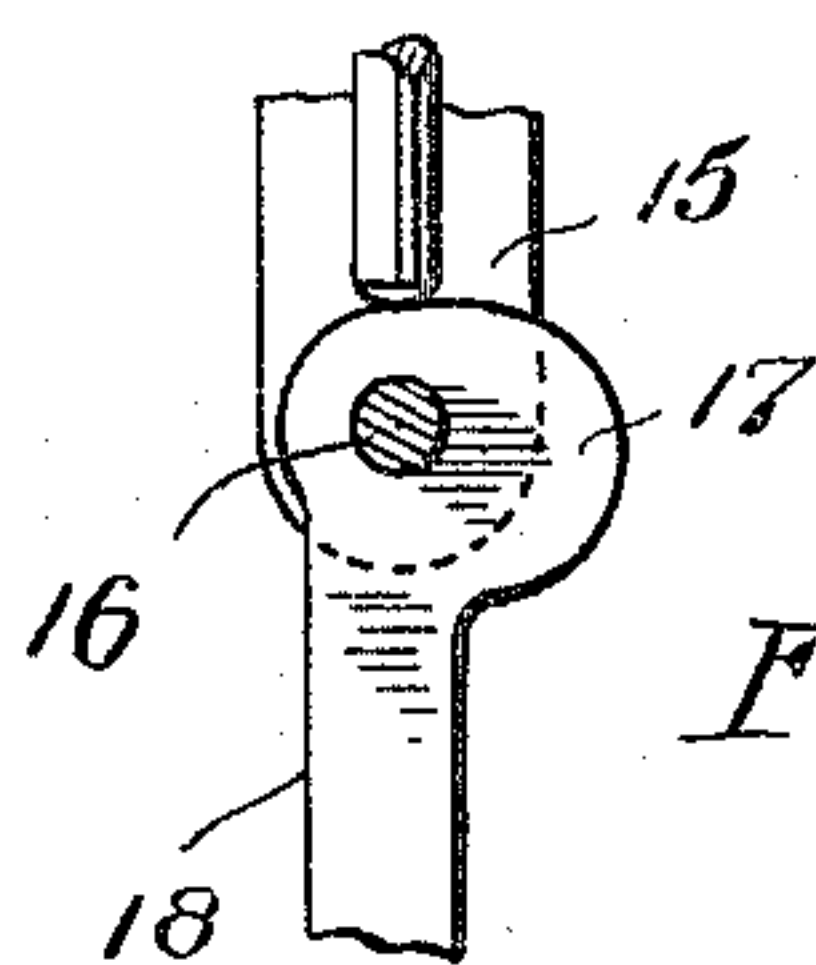
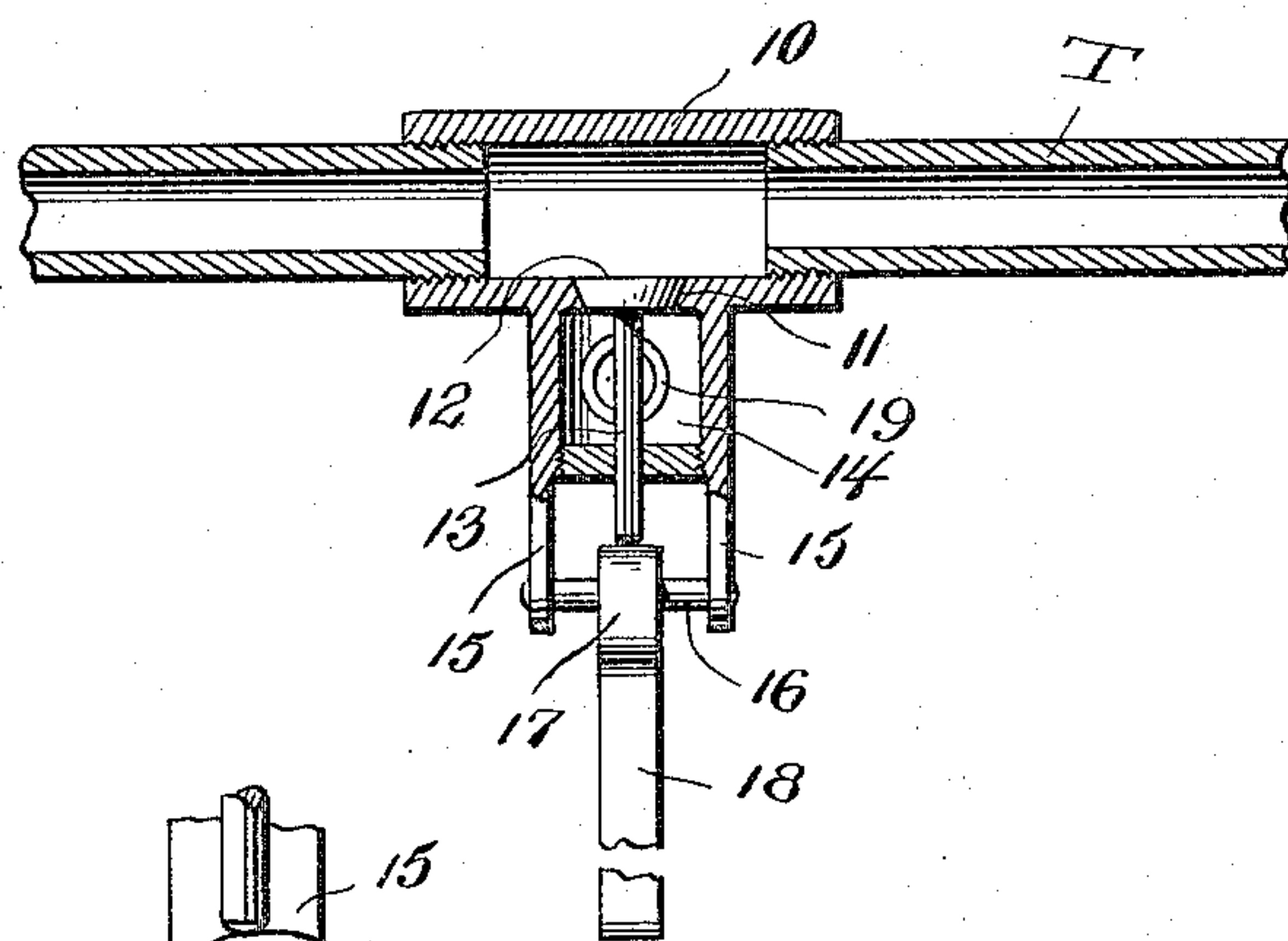


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## CONTROLLING-VALVE.

1,155,217.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, ARTHUR O. CURRY, a citizen of the United States, residing at San Bernardino, in the county of San Bernardino and State of California, have invented new and useful Improvements in Controlling-Valves, of which the following is a specification.

This invention relates to certain novel and useful improvements in fluid controlling valves and has particular application to an automatically operated valve for use in connection with train stopping apparatus.

In carrying out the present invention, it is my purpose to improve and simplify the general construction of fluid controlling valves for use in conjunction with fluid operated train stopping apparatus and to provide a valve wherein the component parts will be so correlated and arranged as to reduce the possibility of derangement to a minimum.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claim.

In the accompanying drawing; Figure 1 is a diagrammatic view of an automatic train stop constructed in accordance with the present invention, parts being shown in section. Fig. 2 is a longitudinal sectional view through the controlling valve. Fig. 3 is a fragmentary transverse sectional view therethrough.

Referring now to the drawing in detail, 1 designates the cab end of a locomotive boiler, while 2 indicates the usual throttle valve lever by means of which the flow of steam from the steam dome of the boiler to the engine cylinders is controlled. Suitably fastened to the boiler within the engine cab is a cylinder 3 formed adjacent to the inner end of which is an exhaust port 4 and adjacent to the outer end a vent opening 5, while slidably mounted within the cylinder is a piston 6 normally disposed adjacent to the outer end of the cylinder and provided with a piston rod 7 connected with one limb of a bell crank lever 8 pivoted upon the throttle valve lever and having the opposite limb thereof connected through the medium of a link 9 with the locking dog of the lever 2.

T designates the brake pipe or train line air pipe of the air brake system of the car

or train. Connected in the train line air pipe T is a controlling valve comprising a cylindrical casing 10 coaxial with the brake pipe and in open communication therewith and having the lower wall thereof formed with a valve seat 11 engaged by a valve disk 12. The valve disk 12 is held normally against the seat 11 under the pressure of the air within the brake pipe and is provided with a depending stem 13, while formed integral with the casing 10 and depending therefrom is a stem forming a chamber 14 surrounding the valve stem 13 and adapted to communicate with the casing 10 by way of the valve seat 11. The lower end of the valve stem 13 extends below the bottom wall of the chamber 14 and depending from such wall of the chamber at opposite sides of the lower extremity of the valve stem are pivot ears 15, 15 carrying a horizontal pivot pin 16 upon which is rotatably mounted a cam 17 equipped with a depending trip lever 18 and adapted, when moved to active position, to engage the lower end of the valve stem 13 and so elevate the disk 12 to establish communication between the train line air pipe and the chamber 14. Leading from the chamber 14 is a conduit 19 connected with the forward end of the cylinder 3 so that when the valve 12 is opened, the air will flow into the cylinder 3 behind the piston 6 therein and actuate the latter to swing the throttle valve lever to closed position.

In practice, suitable obstacles are arranged along the trackway and spaced apart appropriate distances and are capable of movement to active and inactive positions and when active are adapted to engage the lever 18 to swing the cam 17 about the pivot pin 16 thereby opening the valve 12 against the pressure of the air in the brake pipe so that such air will flow into the cylinder and operate the piston therein. In the initial movement of the piston the latching dog of the throttle lever is released and in the continued movement of such piston under the action of the air the throttle valve lever is swung to close the throttle valve. As the piston passes the exhaust port 4 in the cylinder 3 the air from the train line bleeds into the atmosphere thereby effecting an application of the brakes to the wheels succeeding the closing of the throttle valve.

To restore the parts to normal position, the valve 12 is moved into engagement with



the seat 11 thereby cutting off communication between the brake pipe and the cylinder, while the air within the cylinder discharges to the atmosphere by way of the vent 5. By means of the vent 5 in one end of the cylinder and the exhaust port 4 in the opposite end the piston is freely movable within the cylinder in the normal manual operation of the throttle valve so that under ordinary conditions the engineer has complete control of the throttle.

I claim:

A controlling valve of the class described comprising a T-shaped casing adapted to have the head thereof in open communication with a source of fluid supply and having the stem thereof formed to provide a chamber formed with an outlet port adapted to communicate with the interior of the head, the head of said casing being formed

with a valve seat contiguous to the inner end of said chamber, a valve engaging said seat, a stem depending from said valve and extending through the lower wall of the chamber formed by said casing stem, pivot ears depending from said casing at diametrically opposite sides of the valve stem, a pin carried by said ears, a cam on said pin engaging the lower end of said valve stem and rotatable to elevate the stem to move the valve disk out of engagement with the seat, and a trip arm depending from said cam to operate the latter.

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

ARTHUR O. CURRY.

Witnesses:

F. R. NEFF,

E. T. DRANGA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."