

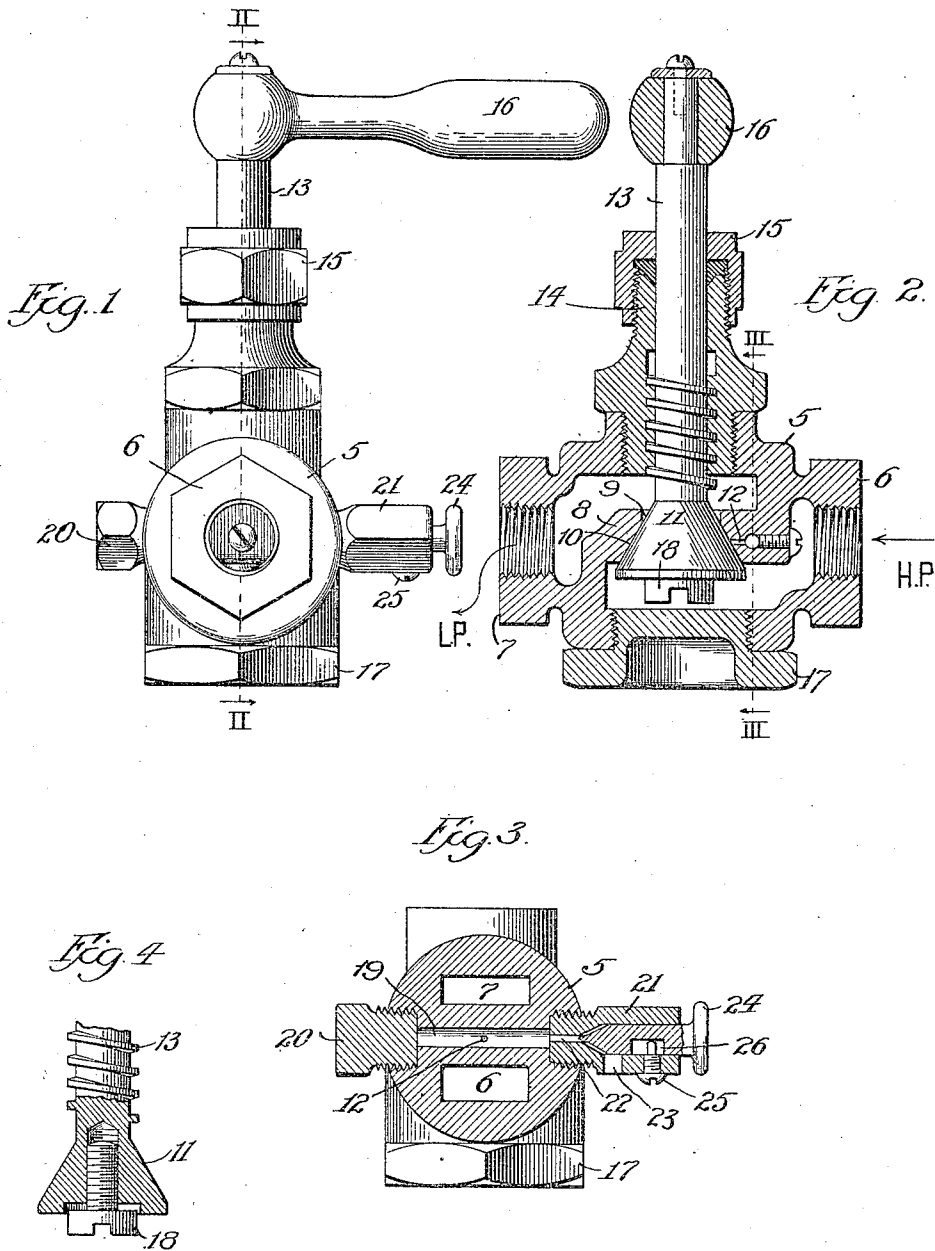
H. VISSERING.

ALARM VALVE.

APPLICATION FILED JUNE 17, 1909.

960,742.

Patented June 7, 1910.



WITNESSES

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UNITED STATES PATENT OFFICE.

HARRY VISSERING, OF CHICAGO, ILLINOIS.

ALARM-VALVE.

960,742.

Specification of Letters Patent.

Patented June 7, 1910.

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To all whom it may concern:

Be it known that I, HARRY VISSERING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Alarm-Valves, of which the following is a specification.

This invention relates to valves in general and more particularly to valves for admitting air or other fluid under high pressure to a low pressure conduit, and contemplates the provision of an improved form of those valves wherein the use of an alarm or warning port is found desirable to direct attention to and thereby tend to prevent unnecessary expenditure of pressure, or operation of the device actuated by such air pressure, or waste of the material fed thereby, such valves being especially useful in connection with track sanding apparatus, certain types of air brake systems, and other devices operable from a locomotive cab.

The principal objects of my present invention are the provision of an improved construction of valve of the character specified wherein the warning port will be positively closed at all times when the main operating valve is closed, and wherein such closure will simultaneously close the warning port, the provision of an improved valve device wherein the closing of the main valve will close a plurality of ports; the provision of a valve device the size of the main opening of which is adapted for ready adjustment to the end that a waste of the initial pressure or a too violent primary operation of the actuated device may be avoided, the provision of a valve of the character described wherein the main valve may be readily removed for re-grinding or replacement thereof, or of its seat, without unnecessary disturbance of the other parts of the device, together with such other objects as will hereinafter appear.

To attain the foregoing objects as well as certain additional benefits and advantages which will occur to those who are skilled in the art to which my invention pertains, I have provided a construction of which I have illustrated a preferred exemplification in the accompanying drawings, wherein—

Figure 1 is an elevation of a valve embodying my improvements; Fig. 2 is a vertical section of the valve of Fig. 1 taken on the line II—II thereof; Fig. 3 is a sectional

view taken on the line III—III of Fig. 2, and Fig. 4 is a sectional detail of the main valve illustrating a certain adjustable stop device used in connection therewith.

Referring now more particularly to Figs. 1 and 2 of the drawings, it will be noted that in carrying out my invention I make use of a valve casing 5, provided with a suitable connection 6 for an inlet or high pressure conduit and with a suitable connection 7 for an outlet or low pressure conduit, and having intermediate said connections a septum 8, with a passage 9 therethrough, said passage 9 being formed with a seat 10 for a valve 11, and the seat 10 with a passage 12 leading therefrom for the purpose to be hereinafter described. It will be apparent that the valve 11 is carried at the lower end of a reciprocating stem 13 having threaded engagement with a bonnet 14 which is provided with a stuffing box 15, the device being operable by the handle 16 carried at the upper end of the stem in the usual manner.

From an inspection of Fig. 2 it will be apparent that to permit the insertion and ready removal of the stem 13 in the casing 7, I have provided the casing with a removable cap 17. By the interposition of washers between such cap and casing the possible vertical movement of the valve 11 relatively to its seat 10 may be limited as desired. To further graduate precisely the amount of movement of the valve 11 relatively to the seat 10, I provide the adjusting screw 18 which may be inserted into the valve 11 to the exact distance desired, and inasmuch as the head of such screw contacts with the cap 17 when the valve is moved off its seat, the amount the valve will open may be regulated with nicety.

On viewing Figs. 2 and 3 it may be clearly seen that the passage 12 connects the passage 9 with a passage 19, one end of which latter passage I preferably close with a plug 20, at the other end providing an alarm device which consists in a hollow casing 21 screwed into the valve body and having a passage 22 and a port 23 venting to the atmosphere. The casing 21 is provided with a valve 24 slidably movable therein and adapted to close the port 23 when the operator presses thereupon, displacement of the valve 24 from the casing 21 being prevented by a screw 25 engaging a slot 26 formed in said valve.

In the operation of apparatus wherein the valve of my improved construction is utilized, when the user manipulates the handle 16 lowering the valve 11 from its seat 10 and allowing air to pass from the connection 6 to the connection 7 and establishing operative connection between the actuated device and the source of pressure, the passage 12 will be simultaneously uncovered and air at high pressure will rush through the passages 12, 19, 22 and 23 making a hissing or whistling sound which will continually direct the operator's attention to the fact that the valve is open and the device controlled thereby in operative connection as above stated, until the valve be again closed.

In cases where the device is in continuous use as in long grades where it is used in connection with railway equipment, the warning sound may if desired be cut off by pressure of a finger on the valve 24 closing the port 23, though the device cannot be left in operative condition without the operator being aware of the fact, inasmuch as when manual pressure is removed from the valve 24 the warning sound will recommence.

It is to be observed that by my improved construction of valve taking the air for the warning port from the high pressure side of the valve three principal advantages are attained, to-wit: The use of a spring for moving the valve 24 is avoided, as the pressure available is adequate for this purpose; the warning sound is more noticeable; and if the valve 11 be not tightly seated the escape of any appreciable amount of air will operate the alarm device.

Having thus described my invention and illustrated its use what I claim as new and desire to secure by Letters Patent is the following:

1. The combination of a valve casing having a valve seat with a high pressure port on one side of the seat and a low pressure port on the other side of the seat and a valve for closing the connection between said two ports, and a secondary port leading to the atmosphere closed when the valve is closed and open when the valve is open, substantially as and for the purposes described.

2. The combination of a valve casing having a valve seat with a high pressure port on one side of the seat and a low pressure port on the other side of the seat and a valve for closing the connection between said two ports, and a secondary port leading to the atmosphere open when the valve is off its seat and closed when the valve is on its

seat, substantially as and for the purposes described.

3. The combination of a valve casing having a valve seat with a high pressure port on one side of the valve seat and a low pressure port on the other side of the valve seat and a valve, and a port having connection with the atmosphere and connecting with the high pressure port when the valve is open and closed when the valve is closed, substantially as and for the purposes described.

4. The combination of a valve casing having a valve seat with a high pressure port on one side of the valve seat and a low pressure port on the other side of the valve seat and a valve, and a port having connection with the atmosphere and connecting with the high pressure port when the valve is open and closed when the valve is closed, substantially as and for the purposes described.

5. The combination of a valve casing having a valve seat with a high pressure port on one side of the valve seat and a low pressure port on the other side of the valve seat, and a third port connecting with the valve seat, two of the ports being open when the valve is off its seat and closed when the valve is on its seat.

6. The combination of a valve casing having a valve seat with a high pressure port on one side of the valve seat and a low pressure port on the other side of the valve seat and a valve, and adjustable means on the valve for limiting the extent of its opening, substantially as and for the purposes described.

7. The combination in an alarm valve, of a valve casing, a valve therein, a plug screw threaded into the valve casing opposite the valve, and an adjustable stop member adapted to engage the plug and screw threaded into the valve.

8. The combination in an alarm valve, of a casing provided with a tapered seat with an alarm passage leading from such seat to the atmosphere, and a tapered valve fitting the seat and adapted to cover the end of the alarm passage when in closed position.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

HARRY VISSERING.

Witnesses:

PAUL CARPENTER,
DONALD C. WILLIAMS.