

958,393.

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ENGINEER'S VALVE FOR PNEUMATIC SANDERS.
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Fig. 2.

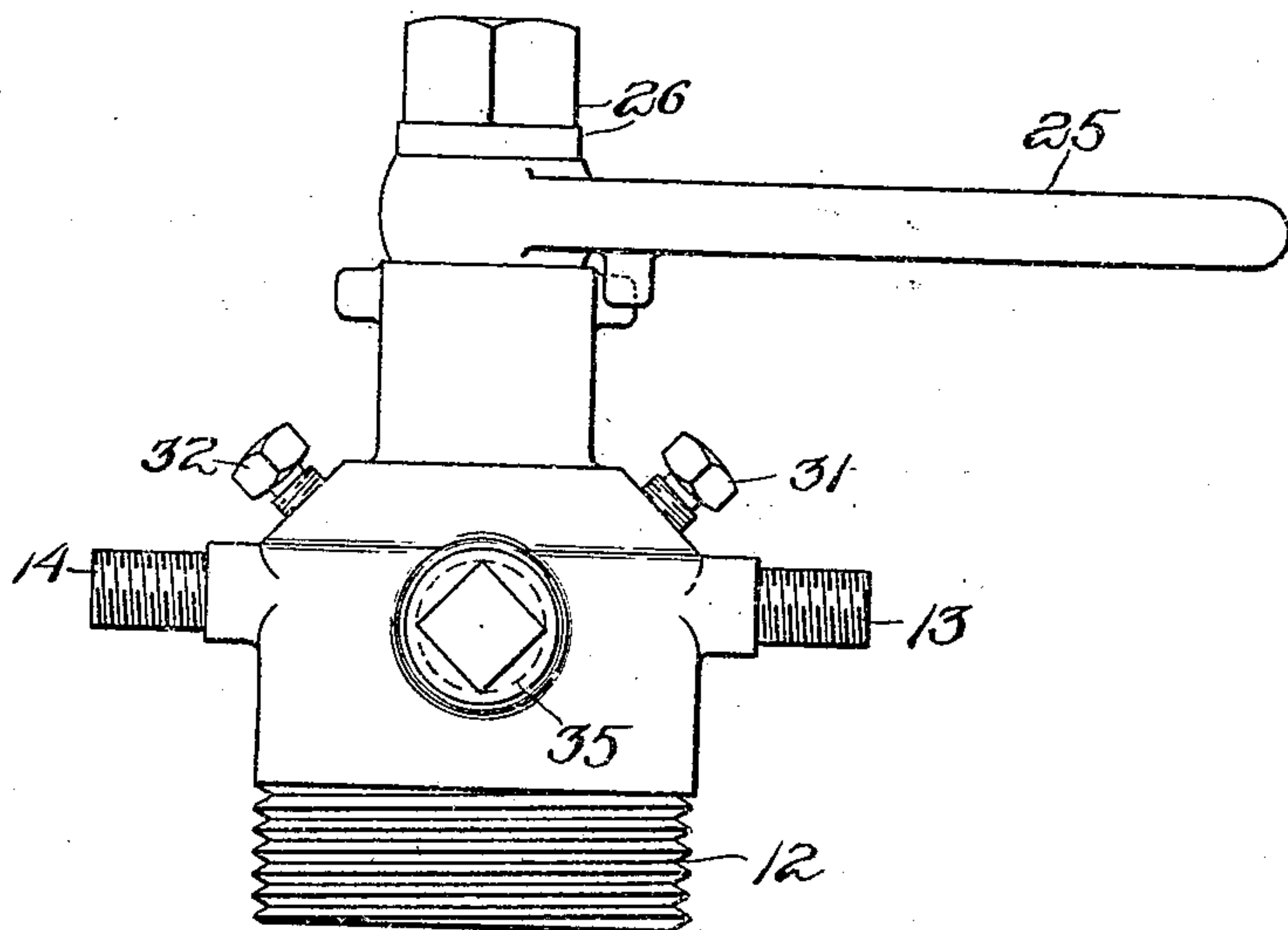
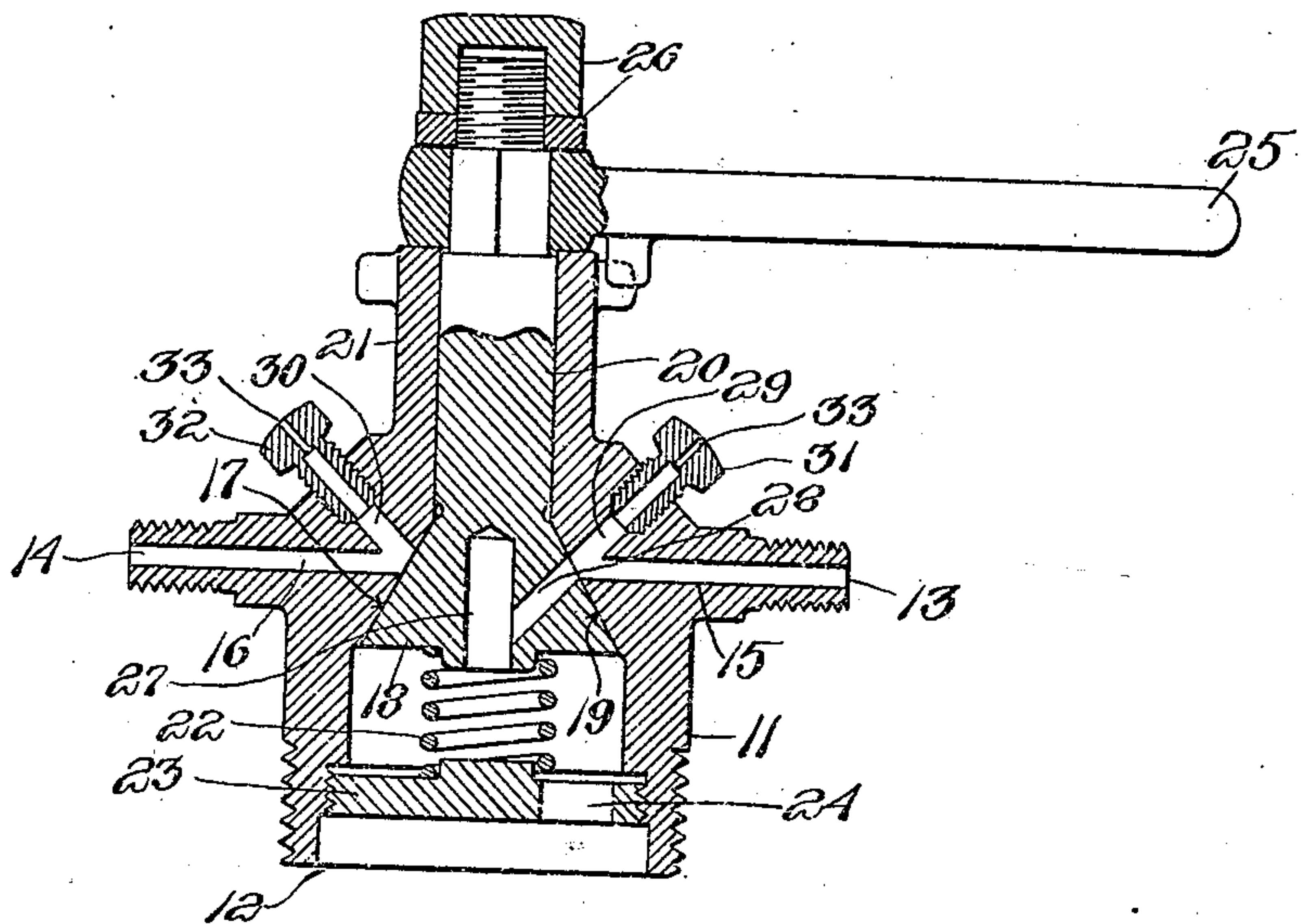


Fig. 1.

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ENGINEER'S VALVE FOR PNEUMATIC SANDERS.

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Specification of Letters Patent.

Patented May 17, 1910.

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To all whom it may concern:

Be it known that I, JOHN H. HANLON, a citizen of the United States, residing at Somerville, county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Engineers' Valves for Pneumatic Sanders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object a new and improved engineer's valve by means of which the supply of air to a pneumatic track sander of any ordinary construction is controlled.

My improved air valve is constructed so that the engineer is warned in case the oil, grease, scale or any other foreign substance from the air pump or air reservoir lodges in the port of the engineer's valve so as to stop the operation of the track sander. It is also so constructed that it may be easily and quickly cleaned without taking the engineer's valve apart, or interfering with the operation of the track sander.

My improved valve greatly increases the efficiency of pneumatic track sanders, as heretofore it has ordinarily been necessary to take the engineer's valve apart to clean it and until this has been done the sander has been wholly out of commission, thereby greatly increasing the danger of accidents due to the failure of the wheels to hold on the rails. As the cleaning of an engineer's valve of ordinary construction is a matter which requires some time, it is frequently put off or neglected and as a result the track sander is some times out of commission for long periods.

The invention will be fully understood from the following description taken in connection with the accompanying drawings and the novel features will be pointed out and clearly defined in the claims at the close of the specification.

In the drawings, Figure 1 is an elevation of an engineer's valve embodying my present invention. Fig. 2 is a vertical longitudinal section of the valve shown in Fig. 1.

Referring now to the drawings—there is shown at 11 the casing or body of the engineer's valve. This casing is constructed to be connected at 12 to the pipe through which the air is received from the air pump or reservoir or other suitable source of air under pressure (not shown). At 13 is indi-

cated a discharge opening leading to the forward sander (also not shown), this being the sander which is in operation when the locomotive is moving forward. At 14 is shown the air outlet leading to the rear sander. The valve casing 11 is provided with nipples or other suitable means for connecting the valve to the air pipes, and with ports 15 and 16 leading to the outlets. The valve casing 11 is provided with a conical valve seat 17 pierced by the said ports 15 and 16. Within the valve casing is located a movable valve member having a conical surface 19 in contact with the conical seat 17. Said valve member 18 is rotatable upon a stem 20 contained within a tubular portion 21 of the valve body 11. The conical portion of the valve member 18 is held in contact with the conical valve seat 17 by means of a spring 22 resting upon a support or washer 23 screwed into the valve casing 11 and pierced by one or more holes 24. The valve stem 20 is provided with handles 25 by means of which the movable valve member may be rotated, said handle being held in place by the nuts 26.

The movable valve member 18 has a central opening or cavity 27 intercepted by a port 28 so located as to register with the ports 15 and 16 at certain times. In the embodiment of my invention shown the said port 28 is at an angle of about 45 degrees, while the ports 15 and 16 are substantially horizontal. In the valve body 11 and in line with the port 28 in the movable member I place two cleanout ports 29 and 30 which intercept the ends of the ports 15 and 16 respectively, said ports 29 and 30 being in line with the port 28 whenever the valve member is in position to discharge air through the ports 15 or 16 respectively. The ports 29 and 30 afford means for introducing a wire or other suitable instrument to clean out the said port 28 in case it has become clogged. To prevent undue loss of air through the said ports 29 and 30, I close the said ports with screw plugs 31 and 32 respectively, each of which has a very small hole drilled lengthwise of it. These holes serve two important purposes, viz., to permit the introduction of a wire or similar instrument to clean out the port, and also to permit the escape of a small quantity of air to inform the engineer of the condition of the valve. Some of the air under pressure escapes through said holes 33 whenever the

port 28 is in registration with the ports 29 and 30, if the port is not clogged. It will therefore be seen that whenever the valve is in service position, either forward or reverse, the engineer will feel a stream of air directed onto the under side of the handle which moves the lever 25. In case this escape of air is not felt he will know that the port 28 is clogged and that the sander is no longer in operation.

To clean the port 28 is but a moment's work, it only being necessary to set the valve with the port 28 in registration with one of the ports 29 and 30 and introduce some small instrument, like a piece of wire, to clean out the port 28 in the movable valve member. This may be done without removing the plugs. It will also be seen that if there is an undue amount of oil in the air in the air pipe, some of the oil will be driven out through the holes in the plugs 31 and 32, and the engineer will be thereby notified of this improper condition even if it is not sufficient to stop the port 28, the oil being blown against the under side of the valve handle.

With the object of enabling the engineer to clean the valve as thoroughly as possible without taking it apart, I provide a large cleanout opening closed by a plug 35, said cleanout opening being located on the back of the valve. This cleanout opening is of a diameter equal to the full height of the conical portion of the movable valve member 18. When this plug is removed a piece of waste or cloth may be readily inserted through the opening and held against the movable valve member 18 while the valve member is rotated by hand. In this way the oil from the air pump may be wiped off the valve member, and the valve cleaned without taking it apart. Under any except the most abnormal conditions the arrangement of cleanout ports 29 and 30 and the cleanout opening 35 makes it possible to keep the engineer's valve in perfect working condition without taking it apart.

If from any cause, such as scale, the valve becomes scored or cut, it may be reground without being taken apart. This is accomplished by loosening the nuts 26, and pressing down on the valve member so that it is

moved slightly off its seat. Some suitable grinding substance, such as wood ashes, or emery powder, may then be introduced through the cleanout opening, after which the valve may be ground by being rotated by the handle. Afterward the valve seat may be cleaned by introducing waste through the cleanout opening as previously described.

What I claim is:

1. In a valve of the character described, the combination with an outlet pipe of a valve body having a cleanout port there- through and a valve member having a port therethrough supplying air to the outlet pipe, said port being in line with the cleanout port when the two are in registration.

2. In a valve of the character described, the combination with a valve body having a port therethrough communicating with the air outlet pipe and a cleanout port intercepting said first mentioned port, of a valve member having a port therethrough in line with said cleanout port when the two are in registration.

3. In a valve of the character described, the combination with a valve body having a port therethrough communicating with an air outlet pipe and a cleanout port intercepting said first mentioned port, of a valve member having a port therethrough in line with said cleanout port when the two ports are in registration with each other and a screw plug closing the said cleanout port.

4. In a valve of the character described, the combination with a valve body having a port therethrough communicating with the air outlet pipe and a cleanout port intercepting said first mentioned port, of a valve member having a port therethrough in line with said cleanout port when the two are in registration and a handle located on the said movable valve member in such position that when the said ports are in registration the air escaping from the cleanout port will be directed against the handle.

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

JOHN H. HANLON.

Witnesses:

GEORGE P. DIKE,
ALICE H. MORRISON.