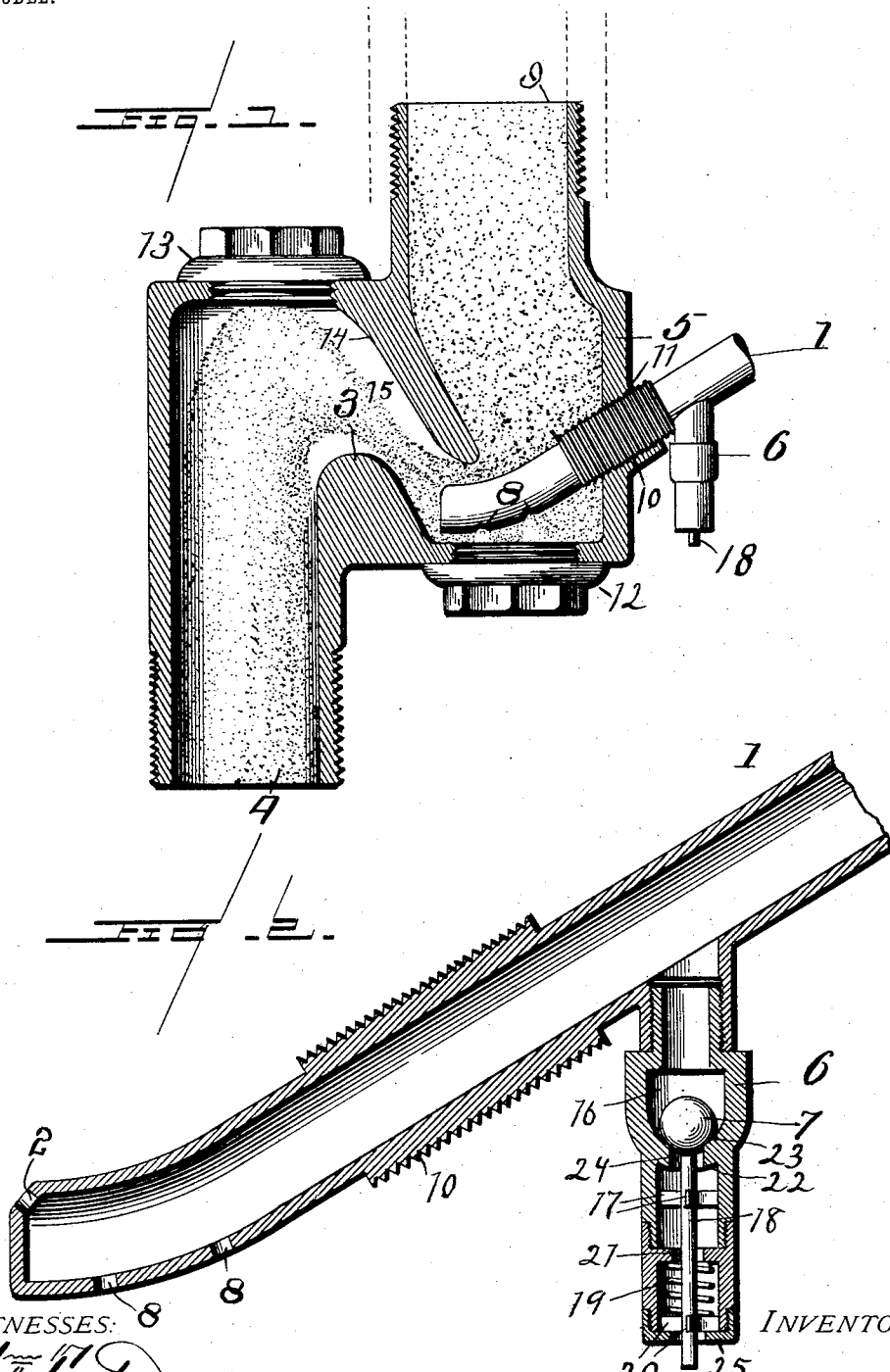


No. 738,172.

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F. H. EDWARDS.
FLUID OPERATED SANDER.
APPLICATION FILED JAN. 2, 1903.

NO MODEL.



WITNESSES:

Wm. F. Doyle.
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UNITED STATES PATENT OFFICE.

FRANK H. EDWARDS, OF McKEES ROCKS, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HARRY R. WARNOCK, OF McKEES ROCKS, PENNSYLVANIA.

FLUID-OPERATED SANDER.

SPECIFICATION forming part of Letters Patent No. 738,172, dated September 8, 1903.

Application filed January 2, 1903. Serial No. 137,438. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. EDWARDS, a citizen of the United States, residing at McKees Rocks, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Fluid-Operated Sanders, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a vertical section of my invention, and Fig. 2 is a vertical section of the air-pipe and the testing device.

My invention relates to devices for sanding the tracks upon which locomotives and trolley or other cars travel.

It is the object of my invention to provide a fluid-pressure sander in which the sand will be thoroughly agitated and will not become clogged.

It is also the object thereof to provide a testing attachment therefor which will in case of a failure of the sand to fall on the rails show upon actuation whether such failure is due to a want of air. Other objects of my invention will appear in the detailed description thereof.

The air-tube 1 is screw-threaded at 10 and is adjustable in the threaded opening 11 in the wall 5 of the leg 9 of the sander. The leg 9 is a vertical tube, whose lower end is closed by a screw or cap 12, which is easily removable to allow inspection or repair and to permit any obstacles to the flow of the sand to be removed or the sand to be loosened in case it should become damp or packed.

The leg 4 of the sander is a tube closed at its upper end by a screw plug or cap 13 and is located at one side of the leg 9, the lower end of the leg 9 and the upper end of the leg 4 lying opposite each other. The lower end of the leg 9 is connected to the upper end of the leg 4 by an oblique passage 15, separated from the leg 9 by wall 14, which is inclined inwardly toward the wall 5.

The inner end of the tube 1 lies preferably between the bottom of the leg 9 and the lower end of wall 14. The wall 3 between the tube 1 and the leg 4 is preferably broad and rounded and does not extend, preferably, more than half-way between the closed ends of the legs

4 and 9, thus giving a wide space to permit the spreading of the sand, so that it will fall over the said wall 3 in an even shower.

The tube 1 passes obliquely downward through the wall 5 to prevent the sand from running back far, and its inner end is somewhat curved, so as to become more nearly horizontal. The upper corner of the inner end of the tube 1 has a slot or hole 2 directed obliquely, so as to cause the sand in front thereof to be driven up the passage 15. The lower side of the tube has one or more holes 8, through which air may pass to keep the sand agitated. These holes may be elsewhere located in the tube, if in practice it shall seem desirable. The tube 1 is inclined downwardly in the direction in which the air is blown. The tube 1 is threaded for a considerable distance, so that it may be adjusted to throw the sand in greater or less quantities or to change the position of the opening 2 for other reasons.

The caps 12 and 13 not only provide access to the legs 4 and 9, but also receive great wear from the sand, as is clear from an inspection of the drawings. They can when worn out be easily and cheaply renewed.

Outside the leg 9 is the air-tester, which is screwed into a threaded lug on the under side of the lug 1; but the tester may be placed at any place between the wall 5 and the source of air-supply. The tester consists of a casing 6, a valve 7, and parts for operating the valve.

The casing 6 has the valve-chamber 16, in which is a loose spherical valve resting on the curved seat 23.

A valve-operating stem or push-rod 18 extends into the valve-opening 24, beneath the valve 7, and downwardly through the casing 6, beyond which its lower end extends slightly.

The stem 18 is provided with stops 17, which engage the wall 22 when the stem is pushed upwardly and with stops 20, which engage the inner face of the end cap 25 and limit the outward movement of the stem. A spring 19 is seated between the lugs 21 of the casing 6 and the stops 20 and normally holds the stem in its lower position, as shown in Fig. 2, where the valve 7 is shown on its seat 23.

The leg 9 of the sander is connected to the usual sand-dome and the leg 4 to the tube

which conducts the sand to the rail. Air is admitted to the tube 1 in the usual manner by the engineer or motorman. The air being under pressure drives the sand upwardly 5 obliquely through the passage 15 in a light spreading stream, which strikes the screw plug or cap 13 and falls down onto the rail. The air at the same time keeps the sand in the leg 9 from packing and assists in driving 10 the sand into passage 15.

If the sand should not run when air is admitted in the tube 1, the push-rod or stem 18 is lifted. If air is present in the tube, it will be known by its rushing past the valve 7 and 15 out of the casing 6. If air is not present, there will be no sound.

Having described my invention, what I claim is—

1. In a fluid-operated sander, a leg to receive the sand previous to use, a leg to receive the sand when blown from the first leg, a connection having an upwardly-inclined passage leading from the first to the second leg, and an air-blowing tube inclined downwardly in the direction of blowing and extending 25 into the first leg and so arranged and constructed so as to direct air up said passage.

2. In a fluid-operated sander, a leg to receive the sand previous to use, a leg to receive the sand when blown from the first leg, 30 a connection having an upwardly-inclined passage leading from the first to the second leg, and an air-blowing tube inclined downwardly in the direction of blowing and extending

into the first leg and so arranged and constructed so as to direct air up said passage and also into the sand back of said passage. 35

3. In a fluid-operated sander, a sand-receiving leg, an air-conducting tube inclined downwardly in the direction of blowing and extending 40 into the leg and having means at its inner end for directing a current of air obliquely upward.

4. In a fluid-operated sander, an air-conducting tube, provided with one or more holes 45 which direct the air into the sand to agitate the same and with another hole which directs the sand so as to expel it from the sander.

5. In a fluid-operated sander, a sand-receiving leg and an air-conducting tube extending 50 obliquely into the same and having its inner end more nearly horizontal than the inclined portion, said tube having a hole at its said end for directing the sand upward obliquely.

6. In a fluid-operated sander, a sand-holding compartment, an air-conducting tube extending into the same and provided with one or more holes in its underside, and a removable cap in said compartment and beneath 55 said holes to receive the wear of the sand. 60

Signed at McKees Rocks this 23rd day of December, 1902.

FRANK H. EDWARDS.

Witnesses:

R. C. JOHNSTON,
J. M. HALL.