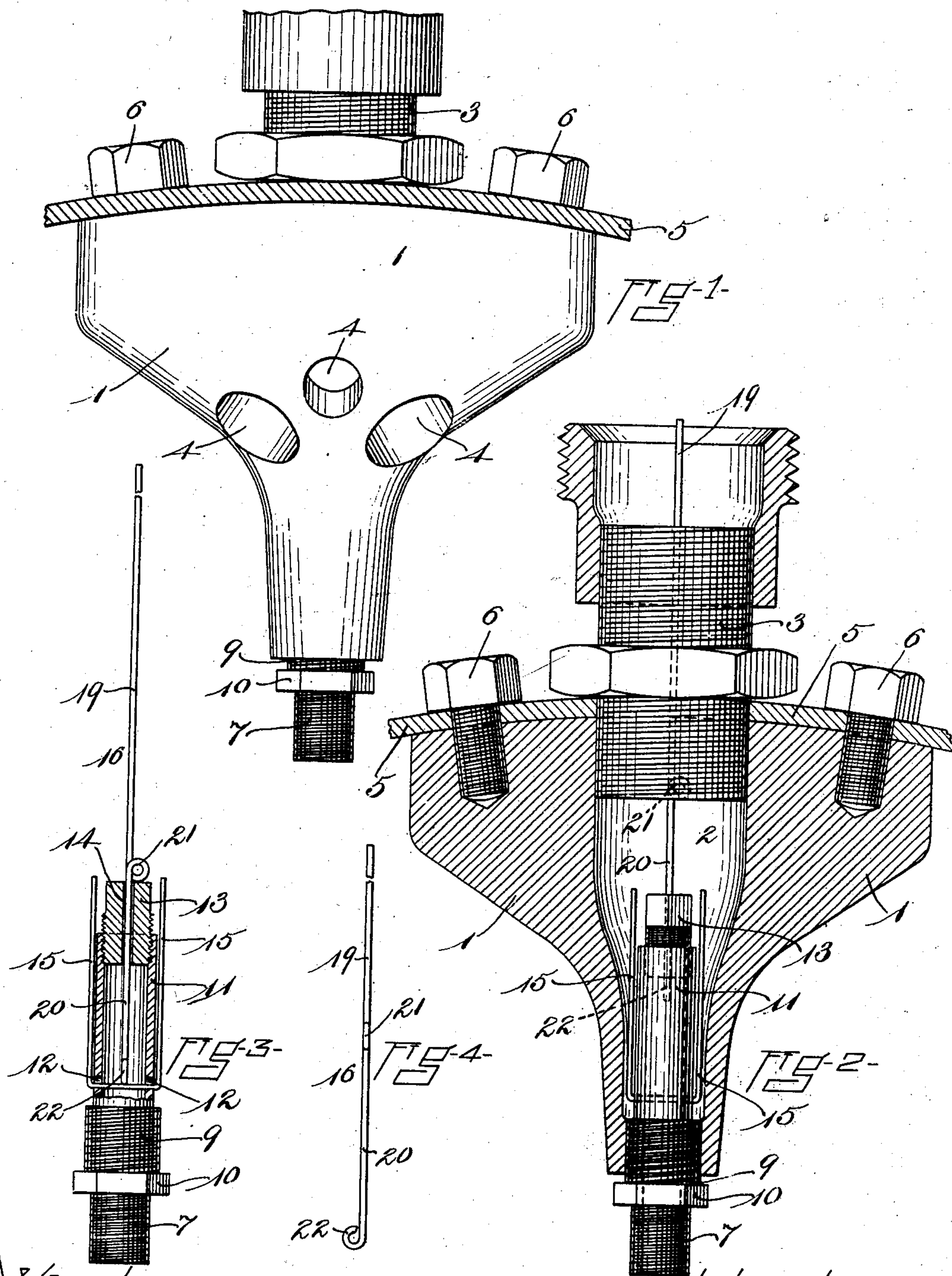


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J. H. HANLON.
TRACK SANDING DEVICE.
APPLICATION FILED NOV. 4, 1903.

NO MODEL.



WITNESSES:
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TRACK-SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 753,794, dated March 1, 1904.

Application filed November 4, 1903. Serial No. 179,782. (No model.)

To all whom it may concern:

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

It is frequently the case in track-sanding devices which employ an air-blast to drive the sand through the sand-delivery pipe to the wheels that the apertures in the blast-nozzle through which the compressed air is delivered become clogged with scale or other foreign substances. The apertures in the blast-nozzle also at times become clogged or blocked by sand which finds its way into them by the jarring to which a track-sanding device is constantly subjected.

My invention has for its objects to provide means whereby the said blast-nozzle apertures may be kept open at all times in order that a suitable amount of air may be delivered by the said apertures; also, to provide means for cleaning the air-blast nozzle quickly.

My invention may be applied to almost any of the various forms of air-blast nozzles which are employed in track-sanding devices, either in the form shown in the accompanying drawings or by slight modifications within the spirit of my invention, which will naturally occur to the mechanic who puts the devices comprising my invention in place upon the said nozzles. For convenience I have shown the devices comprising my invention as applied to a track-sander of the kind set forth in my patent of August 25, 1903, No. 737,228; but I desire not to be limited to its application to this or any other especial form of track-sander or air-blast nozzle.

The invention will be readily understood from the following description, in which reference is made to the accompanying drawings, and in the claims at the close of this specification I have pointed out and clearly defined the novel features thereof.

In the drawings, Figure 1 is a plan view of

a sander in place within the sand-dome, showing the sand-inlet holes and sufficient pipe connections for an understanding of my invention. Fig. 2 is a view of the same partly in section to show the internal arrangements more clearly. Fig. 3 is a view, also partly in section, showing the details of the air-blast nozzle with my invention applied thereto. Fig. 4 is a view of the so-called "vibrator" for use in the end aperture of an air-blast nozzle.

Having reference to the drawings, 1 is the sand-collector, having a body portion of any convenient form, within which is an expanding-chamber 2 (shown clearly in Fig. 2) and into which projects at its smaller end the air-blast nozzle, to be hereinafter more particularly described, and from which at its larger end leads the sand-delivery pipe 3. Leading into the expanding-chamber 2 are slanting holes 4, (see Fig. 1,) by means of which sand from the sand-dome is admitted to the expanding-chamber 2. The body-piece 1 is bolted or otherwise suitably secured to the side of the sand-dome, a portion of the side of said sand-dome being shown in Figs. 1 and 2 and designated 5. In the drawings I have shown the sand-collector 1 as held in place by the cap-screws 6.

Passing through the hole in the wall of the sand-dome 5 is the sand-delivery pipe 3, which screws into the large end of the expanding-chamber 2, said expanding-chamber being tapped for the convenient reception of the end of the sand-delivery pipe.

Entering the expanding-chamber 2 at its small end is an air-blast nozzle 7, connected to an air-supply pipe. (Not necessary to be shown.) This air-blast nozzle 7 is threaded, as shown at 9, for insertion within the correspondingly-tapped sand-collector 1. It is also furnished with a squared or hexagonal portion 10, to which may be applied a wrench for the insertion or adjustment of the part and a threaded portion for connection with the air-supply pipe. Forwardly projecting from the threaded portion 9 is a nozzle portion 11, having lateral apertures 12 for the emission of air into the expanding-chamber 2 of the

sand-collector 1. I close the end of this nozzle portion 11 by a removable plug 13, screwed into the end of the nozzle portion 11. This furnishes a convenient means of access to the interior of the air-blast nozzle in case scale or other foreign matter in sufficient quantities is brought through the air-supply pipe to clog the holes in the air-blast nozzle 7. The plug 13 has one or more longitudinal perforations 14 for the emission of air into the central portion of the expanding-chamber 2. As has been more carefully set forth in my patent above referred to, the air from the air-supply pipe 7 passes out from the various holes 12 12 and 14 into the expanding-chamber 2, where it expands and drives the sand supplied through the holes 4, Fig. 1, into the sand-delivery pipe 3 and thence to the track.

In order that the air-emission holes 12 12 and 14 may not become clogged with scale or dirt or blocked by sand contained within the expanding-chamber 2, I place within these holes certain instrumentalities which I call "vibrators." These vibrators are of various forms, according to the size and location of the hole.

In Fig. 3 passing through the holes 12 12 is shown a vibrator 15, composed of small wire or other suitable material and formed in a U shape, having the two legs of the U lying substantially parallel to the air-delivery nozzle. In the air-emission hole 14 I place a vibrator 16 of a different shape suited to the different conditions. When the air under pressure is forced through the air-supply pipe 7 and the apertures of the air-delivery nozzle, it comes in contact with the vibrators 15 and 16 and causes them to move slightly within the apertures, thereby dislodging any scale or dirt collecting in the said apertures. The forwardly-extending legs of the U-shaped vibrator 15 have considerable motion and serve by their movement to prevent the collection of a volume of sand within the air-expanding chamber 2 such that it will clog or block the said air-expanding chamber. The vibrator 16 (see Figs. 2, 3, 4) consists of a long straight portion 19 (best seen in Fig. 2) and another straight portion, 20. (Best seen in Fig. 3.) Between these two straight portions is a loop 21 of convenient size and shape. The straight portion 20 terminates at its other end in another loop, 22. The loop 21 is so placed with relation to the distance between it and the loop 22 that when the loop 21 strikes the outside surface of the removable plug 13 the end of the loop 22 is in contact with or slightly beyond the transverse portion of the U-shaped vibrator 15. The vibrator 16 is in the position shown in Fig. 2 whenever the air-blast is turned on—that is, the loop 22 is in engagement with the inside surface of the removable plug 13. This vibrator 16 is kept in movement by the air passing through the hole 14 and by the movement of the sand driven by the air-

blast past its forwardly-extending portion 19 and the loop 21. This vibrator 16 also serves as a means of cleaning the interior of the air-blast nozzle. When it is desired to remove any scale or other foreign material which may have collected upon the inside surface of the removable plug 13, the sand-delivery pipe and its connections are removed and the operator is enabled thereby to take the extended portion 19 of the vibrator 16 in his fingers. By rotating the vibrator 16 about its longitudinal axis and at the same time pulling the said vibrator toward him the scale or other foreign material is loosened from the surface of the plug 13 and pulverized by the forcible contact of the loop 22 with it. The air-blast which is turned on during this operation carries the pulverized scale through the hole 14 in the air-blast nozzle. If it is desired to remove foreign material which has collected in the interior of the air-blast nozzle about the holes 12 12, the said vibrator 16 is pushed by the operator backward to the position shown in Fig. 3, thereby causing the loop 22 to come in contact with the end portion of the U-shaped vibrator 15 and to rotate the same about the axis of the said end portion of the vibrator, thereby loosening up and blowing out any scale which may have accumulated in or about those holes. The rotation of the U-shaped vibrator 15 about the axis of the said end portion is accomplished by bringing the rounded loop or end portion 22 of the vibrator 16 into forcible contact with the transverse portion of the U-shaped vibrator as the rounded end portion 22 is pushed past the transverse portion of the U-shaped vibrator, the length of the vibrator 16 between loop 21 and the loop 22 being such as to allow the loop 22 to pass somewhat the transverse portion of the U-shaped vibrator 15.

The essence of my invention is the application to the air-discharge apertures of the air-blast nozzle of a sander of vibrators movable by the discharge of compressed air through the apertures within which the said vibrators are situated.

While I have shown the vibrators 15 and 16 in the two forms best adapted for use in air-discharge apertures located as are the air-discharge apertures in the form of sander shown in the drawings, I do not wish to be limited to this particular form, as it is evident that any one skilled in the art might find that another form of vibrator within the spirit of my invention would be more advantageous for use under the circumstances.

What I claim is—

1. In a pneumatic track-sanding device, the combination of an air-blast nozzle, and a vibrator within the aperture of the said nozzle, substantially as and for the purposes described.

2. In a pneumatic track-sanding device, the

combination of a sand-collector having an expanding-chamber therein, said chamber receiving sand through suitable sand-inlet holes, a sand-delivery pipe, an air-blast nozzle, and
5 one or more vibrators in the apertures of said air-blast nozzle, substantially as described.

3. In a track-sanding device, the vibrator consisting of a substantially straight portion and a loop thereon engaging the interior surface of the blast-nozzle about the air-emission
10 hole, substantially as described.

4. In a track-sanding device, the combination of an air-blast nozzle, and a vibrator therein consisting of a straight portion and a
15 loop engaging the inner surface of the blast-nozzle, substantially as described.

5. In a track-sanding device, the combination of an air-blast nozzle having a longitudinal and two opposite air-apertures therein, a transverse vibrator in the said opposite air-aper-
20 tures, a longitudinal vibrator in the longitudinal aperture, said vibrator having a head portion engaging the said transverse vibrator at certain times, as and for the purposes described.
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In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. HANLON.

Witnesses:

GEORGE P. DIKE,
ROBERT WALLACE.