J. H. HANLON.

LOCOMOTIVE TRACK SANDER.

APPLICATION FILED JULY 28, 1910.

986,168. Patented Mar. 7, 1911.

Fig. 1.

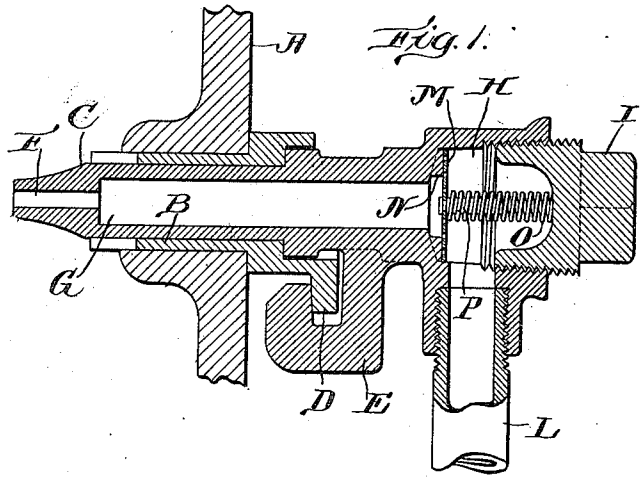

Fig. 3.

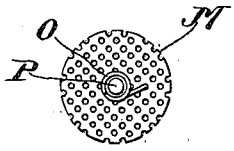

Fig. 4.

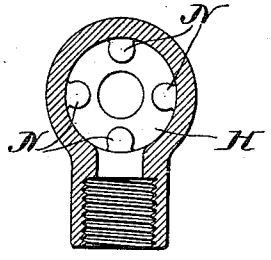

Fig. 2.

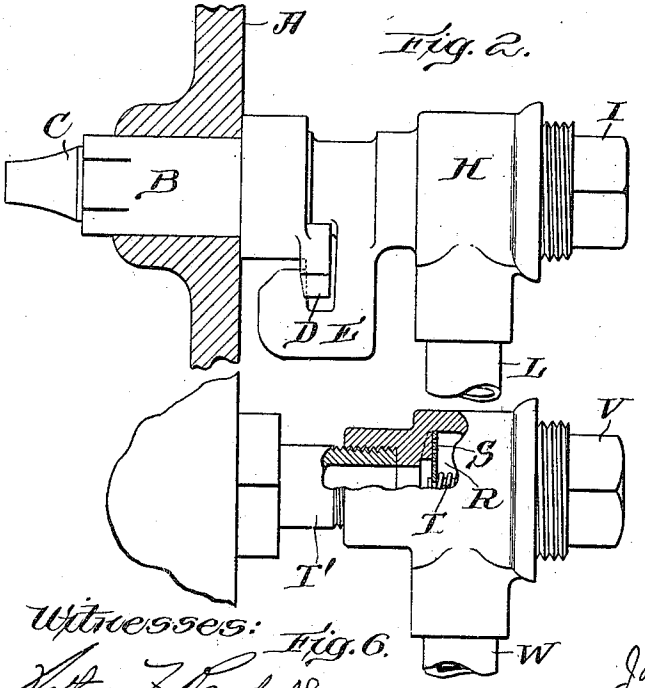

Fig. 5.

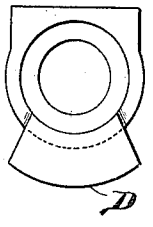

Fig. 6.

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LOCOMOTIVE TRACK-SANDER.

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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, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Locomotive Track-Sanders, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates particularly to means for preventing the air discharge nozzle of a pneumatic track sander from becoming clogged by scale, oil, or other foreign substances such as are frequently present in the air pipe which supplies air to the air discharge nozzle of the sander. Heretofore in devices of this character, very considerable difficulty and annoyance has resulted because scale from the air pipes, and main reservoir, and particles of oil and dust from the air pump, and similar substances have been forced into the air discharge nozzle and there accumulated until the air discharge nozzle has become clogged and the track sander rendered wholly inoperative. The work of cleaning the air discharge nozzle has been considerable and has necessitated taking apart the device, and as this work cannot be done while the locomotive is in motion, it has frequently resulted that the locomotive has been without any sanding device for considerable periods of time. Heretofore various devices have been employed to prevent foreign substances reaching the air discharge nozzle but it has been my experience that these devices themselves soon become clogged and likely to stop the flow of air to the air discharge nozzle.

My present invention consists in locating a screen in such a position with relation to the conduits supplying air to the air pipe that the foreign substances in the air pipe do not in general lodge upon the said screen so that the said screen rarely or never requires to be cleaned.

My invention further consists in providing means by which the screen may, if necessary, be removed and cleaned without disturbing the air nozzle.

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 a longitudinal section of a nozzle of a track sander embodying my present invention. Fig. 2 is a side elevation of the parts shown in Fig. 1. Fig. 3 is an end view of the screen. Fig. 4 is a transverse section of the screen chamber with the screen removed. Fig. 5 is an end view of the sleeve B showing the shape of the locking cam. Fig. 6 is a section of a device embodying my present invention and intended for use where it is desirable to locate the screen at a distance from the air nozzle.

Referring now to the drawings and more particularly to Fig. 1: At A is shown the wall of the sand-box and at B a sleeve which is driven into a hole in the sand-box and remains there permanently. This sleeve is adapted to receive the nozzle C and to hold the same in place by the engagement of the cam D with the hook E. This construction has been previously patented by me and is such as to permit the rapid removal of the air discharge nozzle by rotating it slightly on its longitudinal axis to disengage the hook from the cam after which the nozzle may be pulled out. The air discharge nozzle C is in general cylindrical in shape and has an orifice F at its inner end through which the air escapes to operate the sander. The interior of the air discharge nozzle to the rearward of the orifice F is bored out to a diameter slightly larger than the said orifice F, this portion of the nozzle being shown at G. At the extreme rear end (that is the end on the right hand side, as shown in Figs. 1 and 2) is formed a cavity or chamber H of still larger diameter and which for convenience I term the screen chamber. The rear end of said screen chamber is preferably closed by a screw plug I which is of standard form and is shown in Fig. 1. Opening into the screen chamber H and preferably on the under side thereof is a passage which is connected to the air pipe L leading to the source of supply. In this screen chamber H is located a flat metallic screen M which rests on four lugs N (see Figs. 1 and 4) being held against them by a spring O guided on a stem P which is secured to the said screen M.

It will be seen that one end of the spring O rests against the screen M while the other end rests against the inside of the screw plug I so that when the screw plug I is screwed into place it holds the screen M seated firmly against the lugs N. The object of the lugs N is to increase to the largest

extent possible the effective screening surface of the screen which would be diminished if the screen rested directly against a continuous seat formed in the screen chamber.

It will be seen that the screen M is located substantially on a line with the left hand wall of the air pipe L. This location is very important because it permits any impurities, such as scale or the like, which enter the screen chamber H through the air pipe L, to fall back into the air pipe L when the supply of air is cut off by the closing of the engineer's valve.

I find in practice that particles of hard matter, such as scale do not lodge against the screen when the screen is located as described but are thrown violently against the top of the screen chamber and then drop back into the pipe, this being repeated whenever the sander is turned on and shut off. It results that particles of scale become broken up or worn down until they are of a size to pass through the screen and the air discharge nozzle without clogging either of them. I also believe that the first rush of air into the screen chamber coming as it does from a passage which is parallel to the plane of the screen, tends to blow from the screen any particles which have remained there and to carry them against the roof of the screen chamber when they either stick or drop back into the air pipe when the air is shut off. I also find that the nozzle embodying my present invention may be run for a long time without becoming clogged and that the necessity of cleaning the nozzle is much less frequent than when nozzles of ordinary construction are employed. In fact it has been my experience that the screen almost never requires to be cleaned. If, however, it becomes necessary to clean the nozzle, it may be done by removing the plug I after which the screen M may be pulled out by the spring P attached thereto.

While I have shown and described my screen as employed in combination with a horizontal air discharge nozzle and a vertical conduit leading to the nozzle and located below it, I do not wish to limit myself to this location of the parts, although I believe it to be by far the best arrangement of them.

In Fig. 6, I have shown a device embodying my invention which may be located at a distance from the air nozzle when that is desirable. It consists of a screen chamber R in which is located a screen S held in place by a spring T and plug V. The air pipe W enters the screen chamber R just behind the screen S, and the pipe T leads to the air nozzle (not shown). This form of the device embodying my invention operates in the same manner as previously described.

What I claim is:—

1. In a pneumatic track sander the combination of a substantially horizontal conduit leading to an air nozzle, a screen located in said conduit and a second conduit entering said first conduit at a point just behind said screen and substantially parallel to said screen.

2. In a pneumatic track sander the combination of a horizontal conduit leading to an air nozzle, a screen vertically located in said horizontal conduit and a vertical conduit entering said horizontal conduit at a point just behind said screen and parallel thereto.

3. In a pneumatic track sander the combination of a horizontal conduit leading to an air nozzle, a screen vertically located in said horizontal conduit and a vertical conduit entering said horizontal conduit from below at a point just behind said screen and parallel thereto.

4. In a pneumatic track sander the combination of a horizontal conduit leading to an air nozzle, a screen vertically located in said horizontal conduit, a plurality of lugs supporting said screen and a pipe entering said horizontal conduit at a point just behind said screen and substantially parallel thereto.

5. In a pneumatic track sander the combination of a conduit leading to an air nozzle, a screen in said conduit, a second conduit entering said first mentioned conduit at a point just behind said screen and substantially at right angles thereto and a plug in an opening opposite the end of said first mentioned conduit and behind said screen through which opening said screen may be removed.

6. In a pneumatic track sander, a member having a passage therethrough leading to an air discharge nozzle, a screen chamber therein connected with said passage, a screen within said screen chamber, a plug forming the wall of the screen chamber opposite to the said screen, a spring having one end resting against the said screen and the other end resting against said plug, and a second conduit entering said screen chamber between said plug and said screen.

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

JOHN H. HANLON.

Witnesses:
GEORGE P. DIKE,
ALICE H. MORRISON.