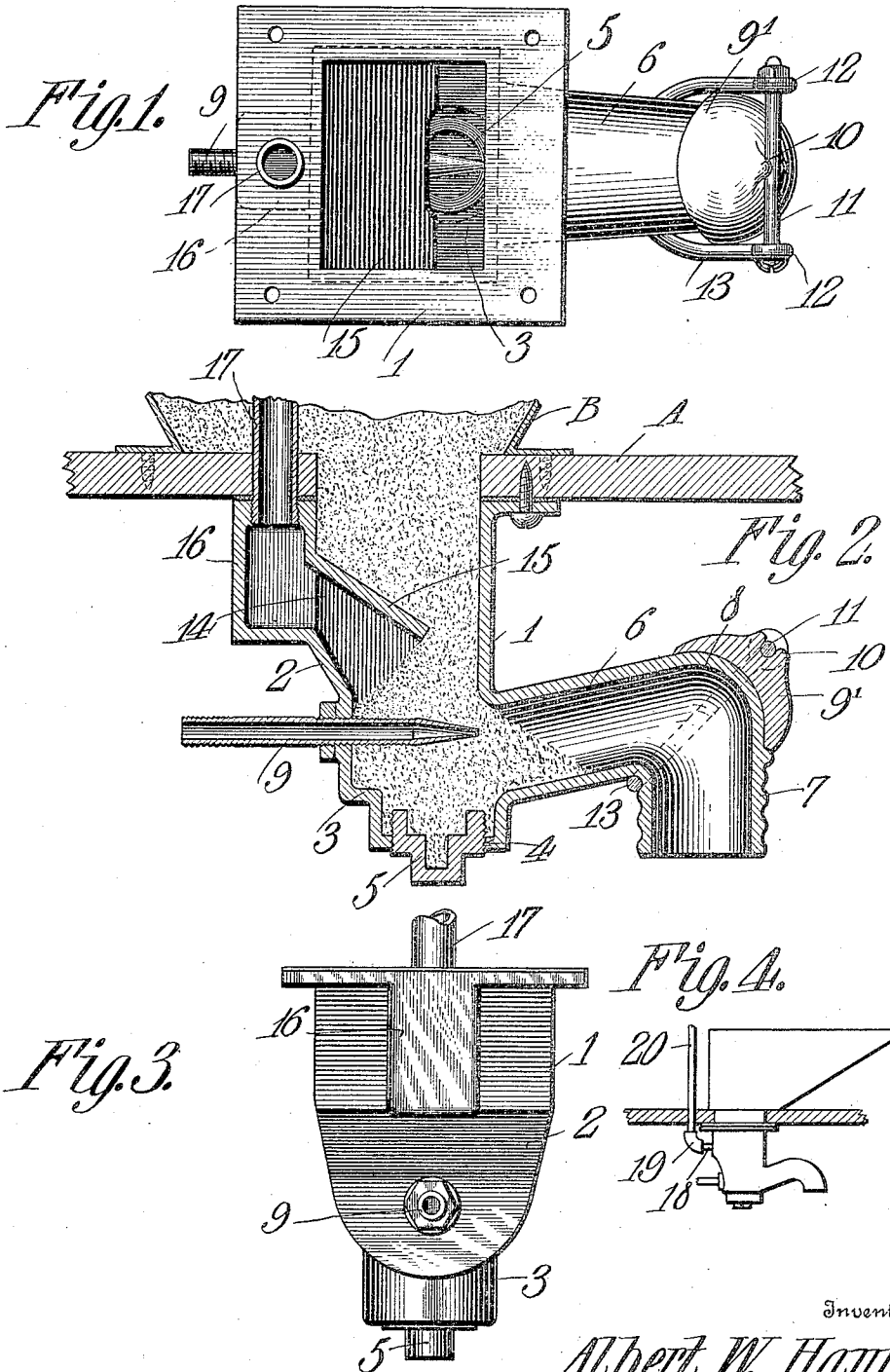


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 TRACK SANDER.
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TRACK-SANDER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALBERT W. HAM, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented a new and useful Track-Sander, of which the following is a specification.

This invention relates to sanding devices of that type in which the sand is delivered from a trap by means of air or steam under pressure.

The principal object of the invention is to provide means whereby the sand contained within the trap may be thoroughly ventilated, so that any moisture which may accumulate therein will be free to escape in the form of vapor and will not be deposited to such an extent within the trap as to cause the sand to cake and thus clog the device and interfere with the free discharge of the sand.

Heretofore, it has been necessary, in devices of this character, to direct the air or steam jet against a considerable body of sand in order to present sufficient resistance to the jet to prevent the sand from quickly cutting or grinding its way through the discharge pipe of the trap. It has been found however that where a considerable body of sand is thus provided the moisture will accumulate to a considerable extent in spite of any ventilation which may be provided.

One of the objects of the present invention is to provide detachable means for use in connection with the trap whereby any wearing action of the sand upon the outlet pipe will not affect the usefulness of the device, this being due to the fact that the said detachable means constitutes a wear device which can be readily replaced whenever necessary.

Another object is to simplify, cheapen and otherwise improve sanders of this class which may be readily applied to locomotives or to the cars of electric or other railways, where air or steam is used.

With the above and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a plan view of a track sander embodying the present improvements. Fig. 2 is a vertical longitudinal

section therethrough. Fig. 3 is an end elevation of the track sander. Fig. 4 is a side elevation on a reduced scale of a slightly modified form of sander.

Referring to the figures by characters of reference 1 designates a casing of any desired size and preferably formed of a single piece of cast metal. This casing has one wall inclined downwardly for a portion of its length as indicated at 2, there being a pocket 3 within the bottom portion of the casing and below this inclined wall. Said pocket has an aperture 4 in the bottom thereof and which is normally closed by a screw plug 5, which can be readily removed to permit access to be conveniently had to the interior of the pocket should said pocket become clogged with gravel or other undesirable material. A sand discharge pipe 6 extends from the pocket 3, this pipe being inclined upwardly to a slight extent and then turned downwardly as at 7 to form an elbow 8, it being understood that the length of the inclined portion 6 of the pipe is considerably greater than the angle or pile of the sand contained within the pocket and pipe. It will thus be seen that it is impossible for the sand to be discharged past the elbow and into the downwardly extending portion 7 of the pipe by gravity.

A tube (not shown) is designed to be secured to the end portion 7 of the pipe for the purpose of conveying sand to the track. A nozzle 9 extends through one wall of the pocket 3 and is so arranged as to direct air, steam or other fluid under pressure into the pile of sand contained within the pocket 3 and thus drive a portion of the sand against the elbow 8, from which point it will drop by gravity downwardly through the end portion 7 of said pipe.

Obviously the action of the sand upon the bend or elbow 8 will be such as to soon wear through the metal of which the pipe 6 is formed, and, in order to considerably prolong the life of the sander, reinforcing means are provided at this point whereby the perforation of the elbow as the result of wear, will not affect the usefulness of the sander. This reinforcing attachment consists of an arcuate saddle 9' provided at an intermediate point within its outer or convex face with a transverse groove 10. This groove constitutes the seat for a bolt 11, the ends of which are detachably mounted with-

in eyes 12 formed at the terminals of a yoke 13. This yoke straddles the elbow 8, the same fitting in the angle thereof, as shown in Fig. 2, and, by tightening the bolt 11, the same will draw the eyes 12 toward each other and thus firmly bind the yoke upon the elbow and secure the saddle in position. This saddle is preferably made of white iron, which is extremely hard and will be practically unaffected by any blast of sand which may be directed against it.

An opening 14 is formed in one wall of the casing 1, directly above the inclined portion 2 and extending into the casing above this opening is a shelf 15 which is inclined downwardly in the direction of the pipe 6 and forms a contracted passage through which sand may flow by gravity from the upper to the lower portion of the casing. The quantity of sand which may accumulate within the pocket 3 is determined by the width of the passage thus formed, by the height of the shelf above the pocket 3, and the angle of the pile of sand. It is preferred that the parts should be so proportioned that but a comparatively small quantity of sand will cover the discharge end of the nozzle 9.

By providing the shelf 15 an air space is formed thereunder, the same communicating through the opening 14 with the interior of a box-like extension 16 formed upon one wall of the casing 1, there being a vent pipe 17 which opens into the top of the extension and projects upwardly through the floor A of the car and through the sand-box or hopper B which is fastened on to the floor and above the casing 1.

It will be seen that by arranging the parts in the manner herein described a sand pile of comparatively small proportions is formed within the casing and said pile will therefore offer the minimum resistance to a draft of air moving upwardly from the pipe 6 to the air space below the shelf 15, and thence through the extension 16 and the vent pipe 17. This circulation of air will result in the carrying off of all moisture rising in pipe 6 and before it can accumulate within the sand pile within the pocket, and therefore there is no danger of the sand becoming caked and interfering with the operation of the device.

When the fluid under pressure is directed from the nozzle and into the sand pile it will throw a portion of the sand against the bend or elbow 8, from which it will drop by gravity into the downwardly extending portion of the pipe. The sand blast thus produced will soon wear away that portion of the elbow covered by the saddle 9', but this will not affect the usefulness of the pipe, because it is intended that this saddle shall receive the force of the blast, and inasmuch as it is constructed of very hard metal, it will be practically unaffected by the sand. How-

ever, should it become worn to an undesirable extent it can be readily removed and a new one substituted therefor.

The upper portion of the casing may be of any shape desired to contain an initial quantity of sand and thus constitute a sand-box, or, if preferred, it may be in the nature of a trap, receiving its supply of sand from a main box as is usual in locomotive construction, or the main sand box of the locomotive may be provided with a shelf, the discharge pipe, the air or steam nozzle, and the other parts of the device without departing from the invention.

Instead of extending a vent tube 17 vertically from the top of the extension 16 and through the sand box or hopper B, a short nipple 18 may be secured to said extension and connected by means of an elbow 19 with a vertical vent pipe 20 and the sand box or hopper formed with a vertical wall so as to permit the pipe 20 to extend close to the hopper as indicated in Fig. 4. Both this construction and that shown in Figs. 1, 2, and 3, eliminate the long horizontally and vertically extending vent tube such as has heretofore been found necessary where a hopper flaring in all directions has been utilized.

What is claimed is:—

1. A track sander comprising a casing having a sand outlet and a moisture vent, this casing constituting means for supporting a pile of sand between the vent and the sand outlet.

2. A sand box having a sand outlet and a moisture vent, said box constituting means for supporting a pile of sand in the path of an air current moving from the outlet to the vent.

3. A sand box having an inclined shelf forming at one side of the box a contracted passage for the sand, there being a combined air inlet and sand outlet below and at one side of the passage and an air outlet at the opposite side of the passage.

4. A sand box having a pocket in the bottom thereof and a shelf disposed above the pocket and constituting means for limiting the quantity of sand flowing thereinto, there being a combined sand outlet and air inlet in one side of the box and between the shelf and the pocket, and an air outlet in the opposite side of the box and between the shelf and pocket.

5. In a track-sander, a casing having a discharge pipe and a ventilating opening, and a nozzle terminating at a point close to and in alinement with the pipe and within the angle of the pile of sand, the discharge end of the nozzle being between the said opening and the discharge end of the pipe.

6. In a track sander a casing having a sand-discharge pipe, means for directing a jet of fluid under pressure into the pipe,

and an auxiliary wear device removably mounted upon a closed portion of the pipe in the path of the jet.

7. In a track-sander a casing having a
5 sand-discharge pipe, means for directing a jet of fluid under pressure into the pipe, and an auxiliary wear device including a saddle upon the pipe and in the path of the jet, a yoke embracing the pipe, and means
10 engaging the yoke and the saddle for detachably securing the saddle upon the pipe.

8. In a track-sander a casing having a sand-discharge pipe, said pipe having an upwardly inclined portion terminating in

a closed elbow, means for directing a jet of 15 fluid under pressure into the pipe and against the elbow, and an auxiliary wear device conforming in contour with and movably mounted upon the exterior face of the elbow.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses. 20

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Witnesses:

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