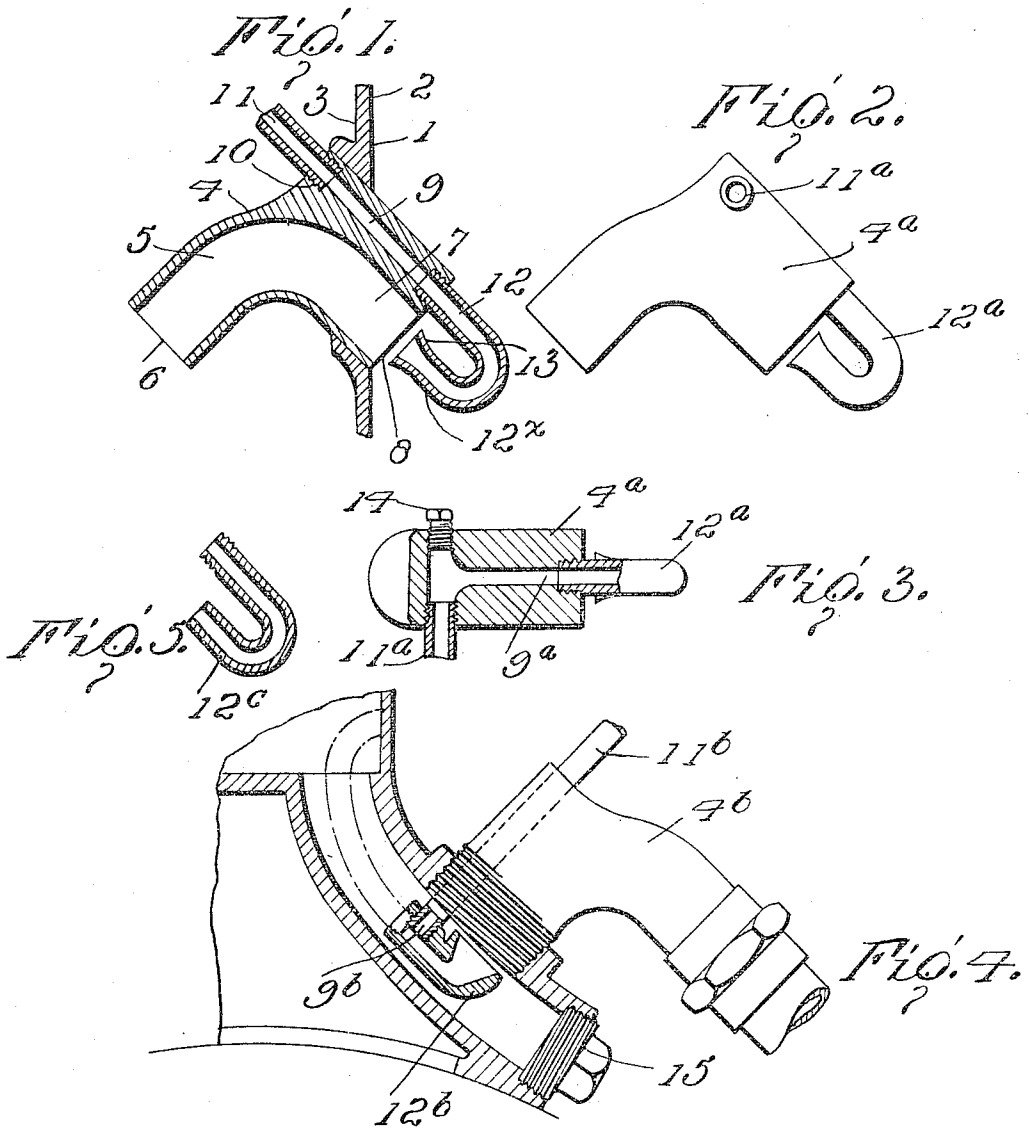


C. P. WHITE.  
 TRACK SANDER.  
 APPLICATION FILED JAN. 15, 1910.

957,482.

Patented May 10, 1910.



Witnesses  
 W. J. Woodson  
 Juana M. Gallin

Inventor  
 C. P. White

By  
 J. H. Racy, Attorneys

# UNITED STATES PATENT OFFICE.

CHARLES P. WHITE, OF GREENSBORO, NORTH CAROLINA.

## TRACK-SANDER.

957,482.

Specification of Letters Patent.

Patented May 10, 1910.

Original application filed May 21, 1908, Serial No. 434,121. Divided and this application filed January 15, 1910. Serial No. 538,303.

*To all whom it may concern:*

Be it known that I, CHARLES P. WHITE, citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Track-Sanders, of which the following is a specification.

This invention comprehends certain new and useful improvements in track sanding devices and relates particularly to track sanders of the fluid pressure type, the present case being a divisional application of my prior Letters Patent of the United States, issued to me May 4, 1909, No. 920,230.

The primary object of my present invention is an improved construction of sander of this type, which may be easily applied to the sand dome of a locomotive without the necessity of materially altering the construction of the dome, without the necessity of fitting the steam or air pressure pipes within the dome, without interfering in the operation of the ordinary manually operated valves for controlling the gravitational flow of sand from the sand dome or box to the rails, and with the positive advantages which result from the fact that the herein described sander of my invention may be applied from the outside of the box and detached from the sand dome or box for the purposes of repair or the like and replacement, without the necessity of emptying out the sand, or of any operation of pipe fitting within the sand dome.

The invention also has for its object a sand applying device which is so constructed and arranged as to effectually prevent the accidental flow or waste of sand from the dome, and more specifically has for its object a sander in which the fluid pressure pipe that is utilized to effect the discharge of sand is protected and prevented from being clogged up, owing to the construction, arrangement and disposition and location of the parts of my device, the invention securing this advantageous result, while at the same time eliminating all mechanical arrangement inside of the sand dome to accomplish such result. And the invention also has for its object to simplify, render more durable, and generally promote the efficiency of this class of devices, and to this end and also for the above named objects, the invention consists in certain construc-

tions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a sectional view of a portion of a sand dome wall with one of my improved sanders applied thereto; Fig. 2 is a side elevation of another form of the device. Fig. 3 is a longitudinal sectional view thereof, the section being taken substantially on the line 3—3 of Fig. 2; Fig. 4 is a sectional side elevation of a modified form of the device; and, Fig. 5 is a detail sectional view of a modified form of fluid pressure nozzle which may be employed in lieu of the nozzles illustrated in Figs. 1, 2 and 3.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

It is to be understood that my invention has to do primarily with that portion of a sanding appliance that is secured to or directly incorporated with the sand box or dome.

In the drawing the reference numeral 1 designates a portion of a sand dome wall, 2 designating the inner surface thereof and 3 the outer surface.

In that embodiment of my invention illustrated in Fig. 1, 4 designates a casting which is preferably a one-piece structure secured to the sand dome wall 1 in any desired manner and applied thereto from the outside without the necessity of any inside attachment, the said casting or body portion 4 being preferably so located that it will occupy a position partly within and partly without the sand dome, as clearly illustrated in Fig. 1. The body portion 4 is formed with a preferably regularly curved sand outlet passage 5 designed to lead to a sand delivery pipe, (not shown) said pipe being connected in any desired way to the outermost end 6 of the body portion. It is to be particularly noted that the receiving end 7 of the sand outlet passage 5 extends upwardly and outwardly from the sand dome at an angle preferably of substantially 35°, and that its entrance extremity 8 is defined by a wall which projects inwardly at an oblique angle to the wall 1 of the sand dome, occupying an over-

hanging position and thereby forming a shield, this construction and arrangement effectively preventing any accidental flow of sand out through the passage 5 and preventing the waste thereof.

In addition to the passage 5, the body portion 4 of the sander is formed with a fluid pressure inlet passage 9 which extends inwardly and downwardly, as shown, and which in that form of the invention illustrated in Fig. 1 opens at its outer end in an upwardly and outwardly interiorly threaded socket 10 in which the exteriorly threaded extremity of a fluid pressure supply pipe 11 is mounted. The inner end of the passage 9 communicates with a nozzle 12, which is secured to the overhanging inner end of the body portion 4 in any desired way, as by the screw connection shown and which forms a continuation of the fluid pressure inlet passage. The said nozzle 12 is provided with a returned inner end 12<sup>x</sup> which is preferably outwardly flared at its extremity, or bell-shaped, as indicated at 13, and it is to be particularly noted that the fluid pressure passage thus formed by the passage 9 and nozzle 11, extends downwardly and inwardly into the sand dome and thence curves downwardly and backwardly, and not upwardly and backwardly, thereby providing, by my particular construction and arrangement of fluid pressure passage, that such passage shall not be clogged up by the sand, this result being further effected and insured by the position which the nozzle occupies under the overhanging inwardly extending part of the body portion 4 that is produced by the obliquely disposed extremity 8 of the sand outlet passage 5 and that part of the body portion 4 which extends over such extremity. In short, the insifting of sand is positively prevented by this arrangement of parts.

It is to be understood that my invention is not limited to the exact disposition of the fluid pressure supply pipe 11 or the exact formation of the outer end of the passage 9 to which such pipe is designed for connection. For instance, as illustrated in Figs. 2 and 3, where 4<sup>a</sup> designates the body portion and 12<sup>a</sup> the fluid pressure nozzle, the fluid pressure passage, designated 9<sup>a</sup>, may be of T-shape, the stem portion of the T passage extending downward and inward like the passage 9, and the branches of the T opening laterally, as illustrated in Fig. 3, at both sides of the body portion 4<sup>a</sup>. The fluid pressure supply pipe 11<sup>a</sup> may be secured to either one of these outer extremities or branches of the passage 9<sup>a</sup>, as desired, while the other branch may be closed, as by a screw plug 14, or the like. By providing the passage 9<sup>a</sup> with oppositely opening branches, it is obvious that the casings or body portions of the sanders may be used

on either side of the box or dome, no rights or lefts being required, either one of the branches being closed by the plug 13 and the other having the supply pipe 11<sup>a</sup> connected thereto.

In Fig. 4 is shown a form of the device especially adapted for application to existing sand domes where the sand pipes extend downward, as indicated in that figure. In this form of the invention, the lower end of the ordinary sand pipe is plugged, as indicated at 15, and the body portion of the sander, designated 4<sup>b</sup>, is secured in an opening formed in the said pipe. In this embodiment of the invention 9<sup>b</sup> designates the fluid pressure inlet passage which extends, first, inwardly and downwardly and thence downwardly and returned upon itself to a point axially to the mouth or receiving end of the sand discharge passage, the inner portion of said fluid pressure inlet passage being formed by a nozzle designated 12<sup>b</sup>, and connected as by a screw thread, as shown, to the inner end of a fluid pressure supply pipe 11<sup>b</sup> which in this instance extends entirely through the body portion 4<sup>b</sup> and constitutes the major portion of the fluid pressure inlet passage. If desired, as indicated in dotted lines in this form, the fluid pressure inlet passage may be opened into the upper inner end of the nozzle 12<sup>b</sup>. It is to be understood that in every instance, the nozzle has its discharge mouth disposed in the axial line of the mouth or entrance end of the sand outlet passage and that in any of the forms or embodiments of the invention, the discharge ends or mouths of the nozzle may be either straight or flared. A straight end is illustrated in Fig. 5, wherein the nozzle is designated 12<sup>c</sup>.

From the foregoing description in connection with the accompanying drawing, the practical operation of my improved track sander will be apparent, it being understood that a blast of air for instance, issuing from the mouth of the fluid pressure nozzle, will drive the sand out of the sand dome in an upward and outward direction through the sand outlet passage and down through a sand delivery pipe to the track rail.

It will be noted that I have provided a very simple, durable and efficient construction of track sander, the use of which will avoid any wasting of the sand or the clogging or choking of the fluid pressure nozzle by the constant insifting of sand, and that may be easily applied to any locomotive sand dome, the device being applied from the outside and obviating the necessity of any inside pipe couplings.

Having thus described the invention what is claimed as new is:

1. In a track sander, a sand pipe casting provided with a sand outlet passage and an independent T-shaped fluid pressure pas-

sage, the stem of the tee opening inward and having a nozzle connection, and the branches of the tee opening outward, a closure for one of said branches, a fluid pressure pipe 5 connected to the other branch, and a nozzle connected to the inner end of the stem and having its mouth disposed in the axial line of the mouth of the sand discharge passage.

2. In a track sander, a sand pipe casting 10 provided with a sand discharge passage and an independent T-shaped fluid pressure passage, the stem of the tee opening inward and having a nozzle connection and the branches of the tee opening laterally on opposite sides 15 of the casting, a closure for one of said branches and a fluid pressure supply pipe connected to the other branch, and a nozzle connected to the stem portion of the fluid pressure passage at the inner end thereof 20 and having its mouth disposed in the axial line of the mouth or entrance end of the sand discharge passage.

3. In combination with a sand dome, of a sander comprising a body portion secured to 25 the dome and extending partially within and partially without the same, said body portion being formed with an upwardly and outwardly extending sand passage leading from the interior to the dome, the entrance 30 end of said passage being defined by a wall which occupies an oblique position and an overhanging relation to the portion of the sand dome to which the body portion of the device is attached, and a nozzle for fluid 35 pressure, said nozzle being connected to the inner end of said body portion with its discharge mouth pointing toward the receiving end of the sand passage, said nozzle having its mouth located underneath the overhang-

ing inner portion of the body of the device 40 and in spaced relation to the entrance end of the sand passage.

4. The combination with a sand dome, of a sand pipe casting secured to the dome and provided with a sand passage extending up- 45 wardly and outwardly from the sand dome with its inner end occupying an oblique or inclined overhanging position in the dome, and a fluid pressure nozzle secured to said casting within the dome and extending 50 downwardly and inwardly from said casting and thence downwardly and upwardly underneath the first named portion of the nozzle, the mouth of said nozzle pointing toward and spaced from the entrance end of 55 the sand passage.

5. The combination with a sand dome, of a sand pipe casting provided with a sand passage which extends upwardly and out- 60 wardly from the sand dome, the casting being provided with an independent fluid pressure passage which extends therethrough downwardly and inwardly into the dome 65 and which includes a nozzle, the mouth of which points toward the entrance end of the sand passage, said fluid pressure passage at the inner end of its downwardly and inwardly extending portion, extending down- 70 wardly and thence returned upon itself and extending upwardly and outwardly toward the sand passage, for the purpose specified.

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

CHARLES P. WHITE. [L. S.]

Witnesses:

J. E. WOOD,  
R. F. CAVINESS.