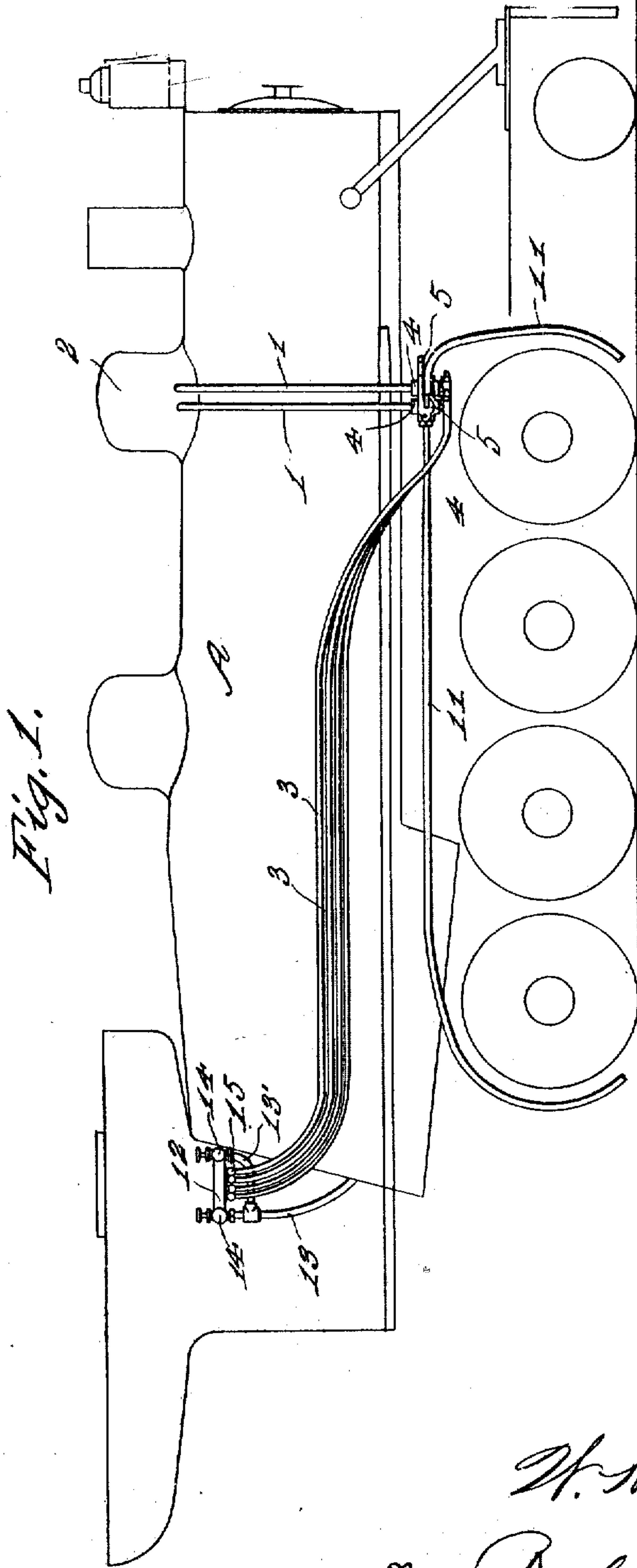


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W. H. PRENDERGAST.  
TRACK SANDING DEVICE.  
APPLICATION FILED JULY 20, 1909.

Patented Nov. 16, 1909.

2 SHEETS—FIG. 1.



Witnesses

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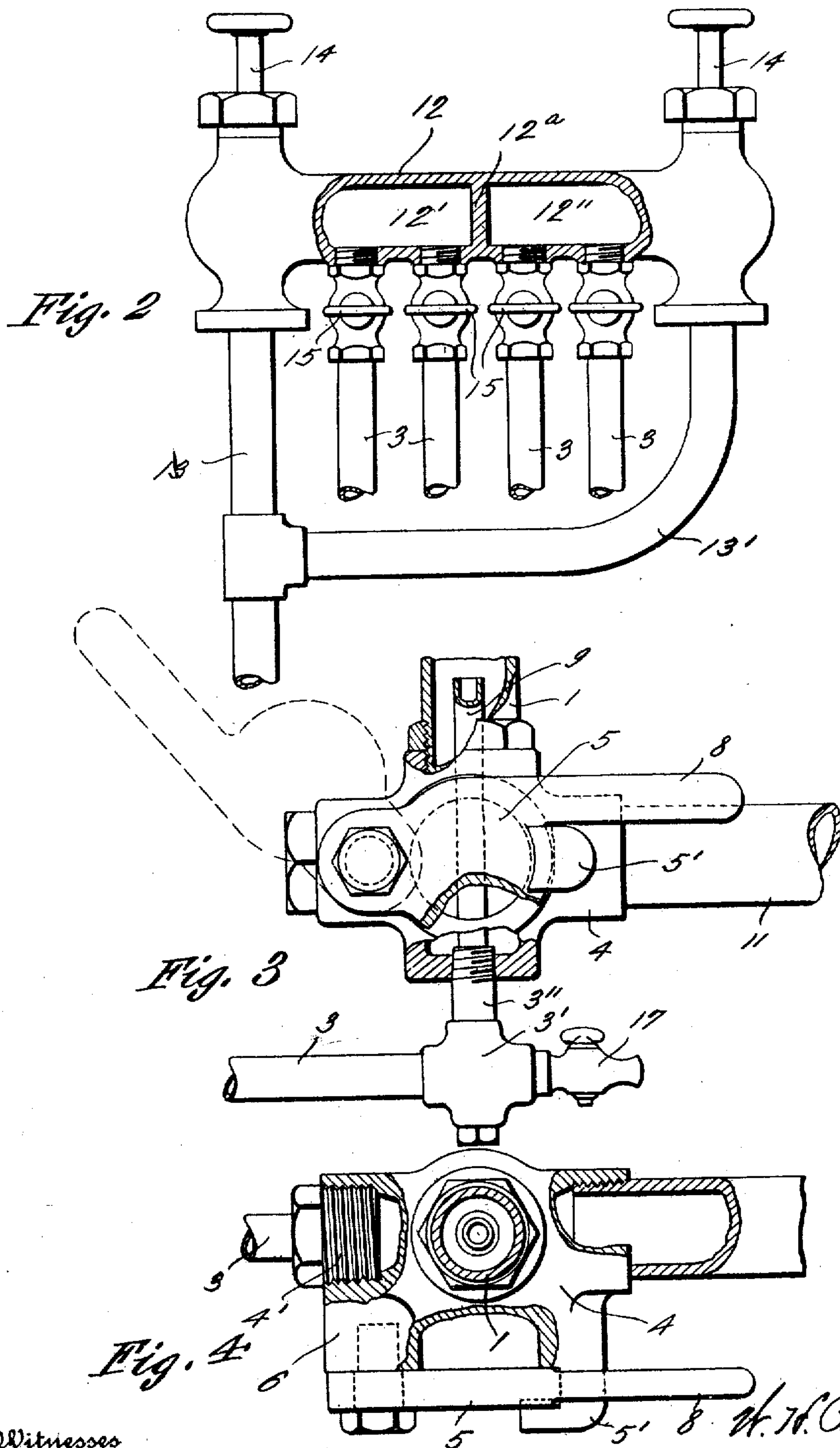
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Witnesses

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# UNITED STATES PATENT OFFICE.

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## TRACK-SANDING DEVICE.

940,476.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed July 20, 1909. Serial No. 508,567.

*To all whom it may concern:*

Be it known that I, WILLIAM H. PRENDERGAST, a citizen of the United States, residing at Savannah, in the county of Chatham and State of Georgia, have invented certain new and useful Improvements in Track-Sanding Devices, of which the following is a specification.

This invention relates to devices for delivering sand to rails for the purpose of increasing the traction between the wheels of a locomotive or other vehicle, and in order to retard the movement of the same for stopping purposes, as well as preventing skidding of the wheels on the rails. Quite a number of devices of the above type have been invented but the same are open to certain serious defects which it has been my aim to overcome in my present invention, the structure and advantages of which will appear more fully hereinafter.

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

Figure 1 is a side elevation showing a locomotive having the invention applied thereto, and bringing out clearly the arrangement of the various pipes and connections which form an essential feature of the invention; Fig. 2 is a view in elevation, and partly broken away in section, showing the valve chamber with which the air supply pipe is connected and from which the several air pipes extend to the sand delivery pipes; Fig. 3 is a side elevation, partly in section, showing the sand trap and connection thereof with the air pipe and sand supply, and delivery pipes; Fig. 4 is a top plan view of the parts shown in Fig. 3, and partly broken away in section.

Throughout the following detail description and on the several figures of the drawings similar parts are referred to by like reference characters.

In the practical embodiment of my invention I have borne in mind the well known fact that air contains moisture which in devices of the type to which my invention relates, wets the sand delivered to the rails so that said sand tends to clog the openings and pipes through which it passes. Also at times the sand is baked in the sand box and pipes interfering with the proper action of the mechanism; again, obstructions in the

form of coal, sticks, straw, or the like, sometimes lodge in the sand pipes, so that it is an object of the present invention to provide the best means of getting rid of such obstructions to facilitate the delivery of the sand to the rails with certainty and nicety of graduation required to best subserve the purposes of the invention.

Referring now particularly to the drawings, the letter A denotes a conventional type of locomotive with the invention applied thereto. In carrying out the invention it is contemplated to provide a plurality of independent sand pipes 1 which lead from the sand dome 2 of the locomotive downwardly to points of connection with the air pipes 3. For each of the sand pipes 1 an air pipe 3 is provided, the connections between the air pipes and sand pipes being independent of one another, this being particularly advantageous in that an obstruction in one sand pipe cannot in any manner interfere with the proper delivery of sand to the wheels through the other pipes. To connect the lower end of each sand pipe 1 with its air pipe 3 a trap 4 is employed, the same being shown clearly in Figs. 3 and 4, and comprising a casing, the upper end of which is formed with a threaded opening for connection with the lower end of the pipe 1, and a side opening of which is closed by a valve 5 pivotally connected to a lug 6 formed with the casing. The valve 5 is opened in order to clean the trap 4, and a lug 5' extending laterally from the trap, and upon which the handle 8 of the valve may rest, necessitates movement thereof upwardly to open the same. The handle 8 at the outer portion of the valve 5 permits of readily moving the same to open position as shown clearly by dotted lines in Fig. 3. The upper portion of each trap 4 is connected with a sand supply pipe 1, and the bottom portion is connected with an air pipe 3. The pipe 3 has threaded connection with a four-way coupling 3' the upper portion of which is connected by a short pipe 3'' directly with the trap. Leading upwardly from the pipe 3'' is an air jet pipe of comparatively small diameter shown at 9, said jet pipe extending upwardly into the sand supply pipe 1, or terminating above the trap 4. The pipe 3 connected with the jet pipe 9 delivers the air under pressure into the sand supply pipe to dislodge any obstructions or foreign mat-



ter therein. There is only one outlet for the air passing through the air pipe 3 to the trap 4, and that outlet is through the vertical jet pipe 9. Should any foreign matter clog the pipe 1 it will be apparent that the force of the air delivered through the jet pipe will effectively dislodge the obstruction as above mentioned, and effect delivery thereof to the lower portion of the trap 4. No likelihood is thus incurred that the opening leading to the sand delivery pipe 11 will become clogged preventing proper operation of the sanding mechanism.

The removal of obstructions from the trap 4 is greatly facilitated by the arrangement of the cleaning valve 5 on the outside of the trap, because when said valve is opened the interior of the trap can be examined and cleaned without a continuous flow of sand over the machinery or the person doing the work. The arrangement of the air jet pipe 9 eliminates all turns and elbows in the trap that either stop up with pipe scale or cut out the metal by sand blast. The pipe 3 which leads from a valve chamber located in the engine cab, is supplied with a small cock 17 located at one end of the coupling 3' to permit of cleaning of the pipe 3 without disconnecting the piping. In the rear end of the trap 4 is provided an opening closed by a plug 4'. The object in providing the plug 4' is to permit of removal thereof and connection of the rear sand delivery pipe to the trap 4. In other words under normal conditions it is contemplated that the front and rear delivery pipes 11 be connected with delivery traps 4. Where it is desired, such pipes might be connected with a single trap in the case of small power.

The jet pipe 9 terminating above the delivery pipe 11 eliminates likelihood of passage of air through the pipe 11 directly and without ejecting the sand from said pipe. Were the jet pipe 9 below the pipe 11, the air passing from the pipe 3 would tend to simply expand the flow out by the course of least resistance, namely said delivery pipe 11, and carrying no sand with it should the upper pipe 1 be obstructed.

As will be noted by reference to Figs. 1 and 2 the air pipes 3 are connected with a valve chamber 12 which is divided into two compartments 12' and 12'' by means of a partition 12<sup>a</sup>. The valve chamber 12 is supplied with air to both of its compartments by means of an air supply pipe 13 having a branch pipe 13' leading therefrom, the pipe 13 being directly connected with one end of the chamber 12 and the compartment 12' while the pipe 13' connects with the opposite end of the valve chamber and its compartment 12''. Controlling valves 14 control admission of the air from the pipes 13 and 13' to the compartments 12' and 12'', from which compartments lead the air pipes

3 described hereinbefore. Each of the air pipes 3, adjacent to the chamber 12, has a valve 15 by which the supply of air thereto is controlled. The independent connections of the air pipes 3 with the air supply means, is advantageous in that they permit of supplying air to one or more of the sand supply pipes at will and maintaining full maximum pressure on each pipe perfectly independent of any other, as well as one or more sanders simultaneously.

It will be observed that the sand delivery outlets of the trap 4, and with which the sand delivery pipes 11 are connected, are contracted toward their inner ends to prevent the clogging of said pipes, and because such form of outlets is advantageous in that less air is required to operate the sanding mechanism for a given amount of sand delivered than in ordinary constructions. The delivery outlets have a flare toward their outer ends in view of the contracted formation of their inner ends as before described.

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

1. In a track sanding device, the combination of a plurality of independent sand supply pipes, a sand trap at the lower end of each pipe, and having a cleaning opening at its outer side, a valve for closing the said opening of each trap, a sand delivery pipe leading from said trap, an air pipe for supplying air under pressure to each trap and supplying air to the latter at a point above the connection with the sand delivery pipe, an air chamber connected with all of the air pipes, a main valve controlling the supply of air to said air chamber, and independent valves controlling the supply of air from the air chamber to the air pipes.

2. In a track sanding device, the combination of a sand supply pipe, a trap connected with the lower end of said pipe, a sand delivery pipe connected with the said trap, and an air supply pipe connected with the trap, the trap being provided with a single vertical air jet leading from the air supply pipe and terminating at a point above the connection of the sand delivery pipe.

3. In a track sanding device, the combination of a sand supply pipe, a trap connected with the lower end of said pipe, a sand delivery pipe connected with the said trap, and an air supply pipe connected with the trap, the trap being provided with a single vertical air jet leading from the air supply pipe and terminating at a point above the connection of the sand delivery pipe, and the trap having a cleaning opening at its outside and near the air jet and point of connection of the sand delivery pipe.

4. In a track sanding device, the combination of a sand supply pipe, a trap connected with the lower end of said pipe, and

a sand delivery pipe connected with said trap, the opening from the trap to said sand delivery pipe being contracted at its inner end.

5 5. In a track sanding device, the combination of a sand supply pipe, a trap connected with the lower end of said pipe, a sand delivery pipe connected with said trap, an air supply pipe connected with the trap,

and a jet pipe leading from the air supply pipe upwardly into the sand supply pipe. 10

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

WILLIAM H. PRENDERGAST.

Witnesses:

THOS. F. THOMSON,

THOS. H. THOMSON.