No. 752,954. PATENTED FEB. 23, 1904.

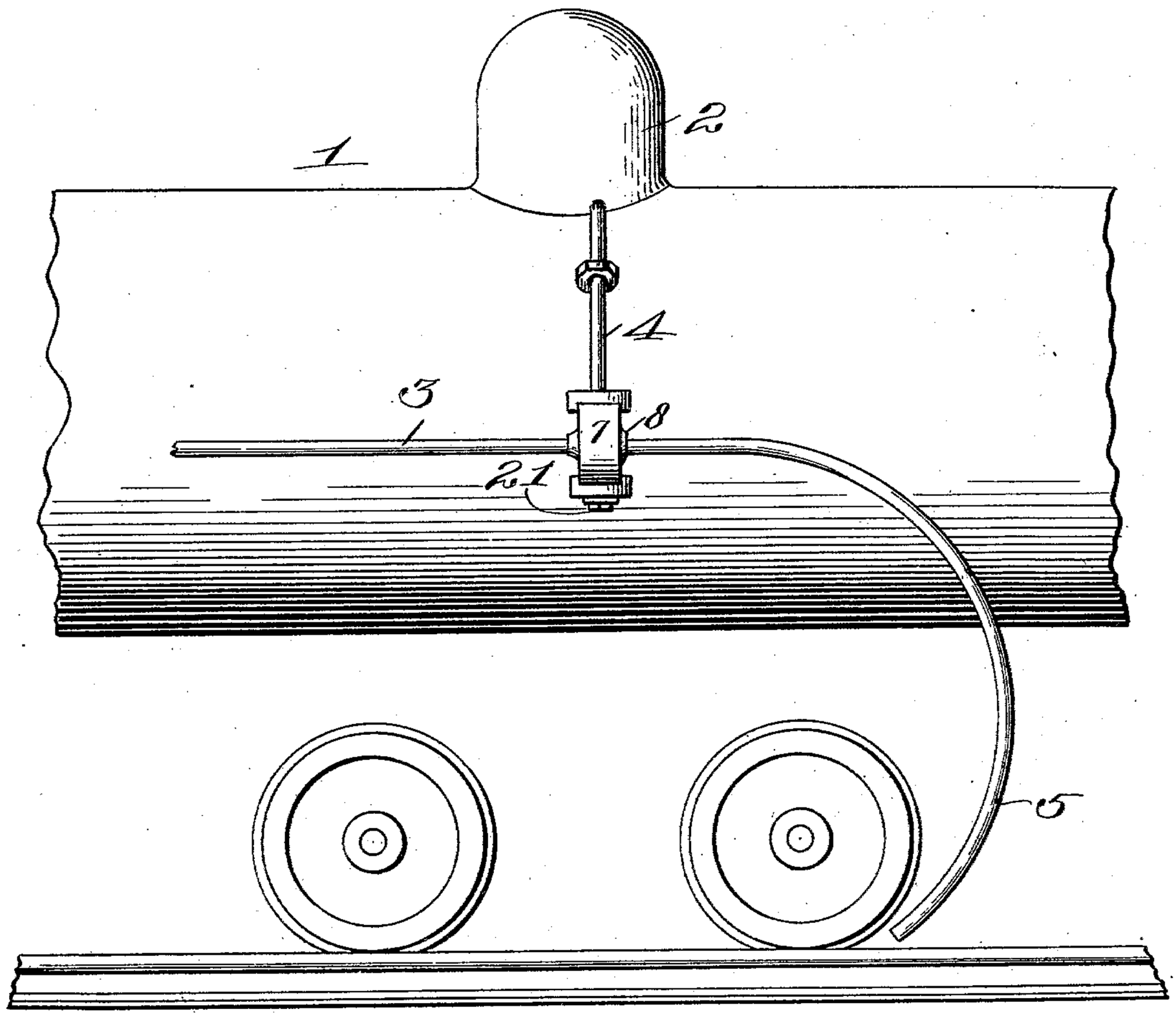
I. P. CARNES.

PNEUMATIC SANDER.

APPLICATION FILED NOV. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

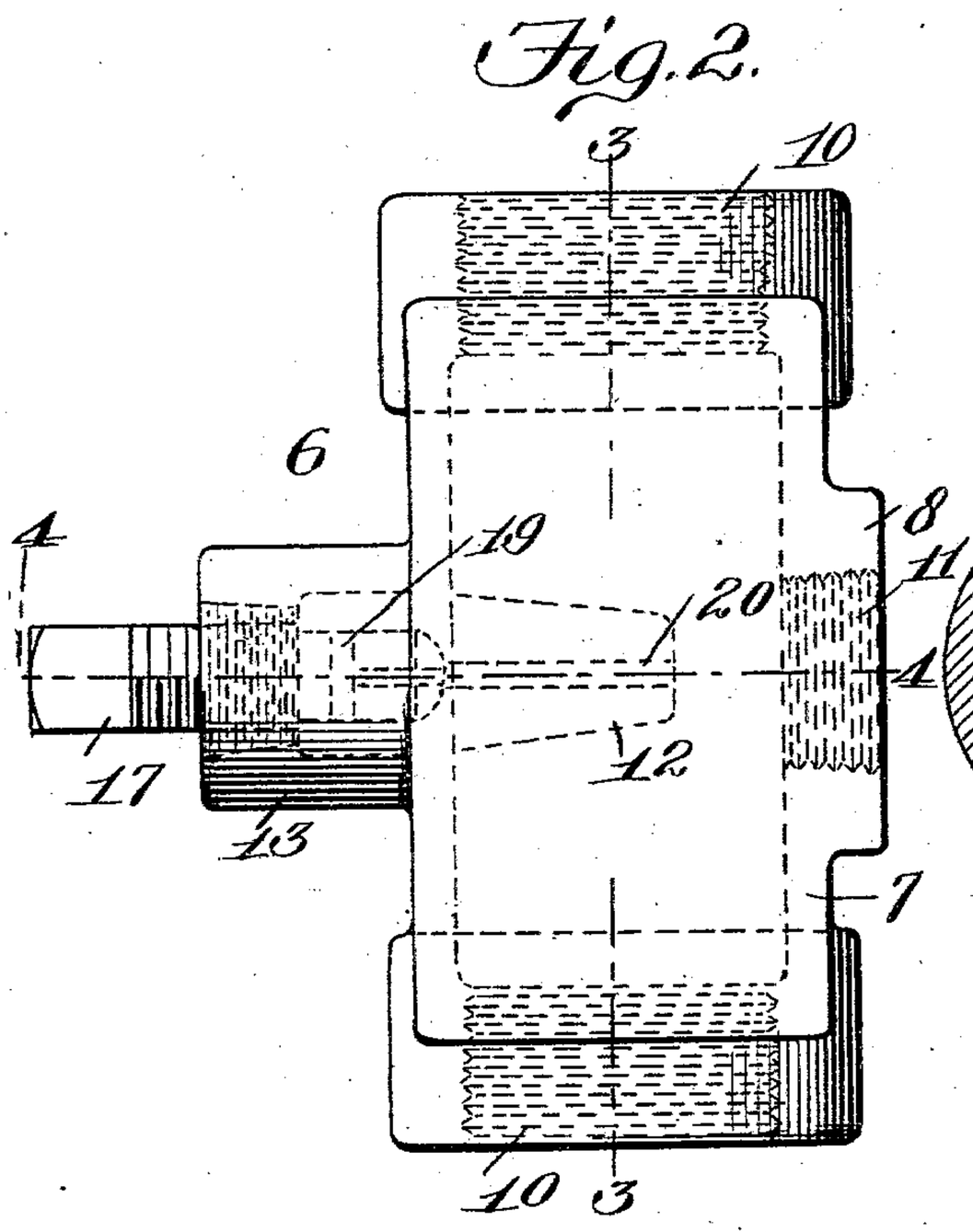


Fig. 3.

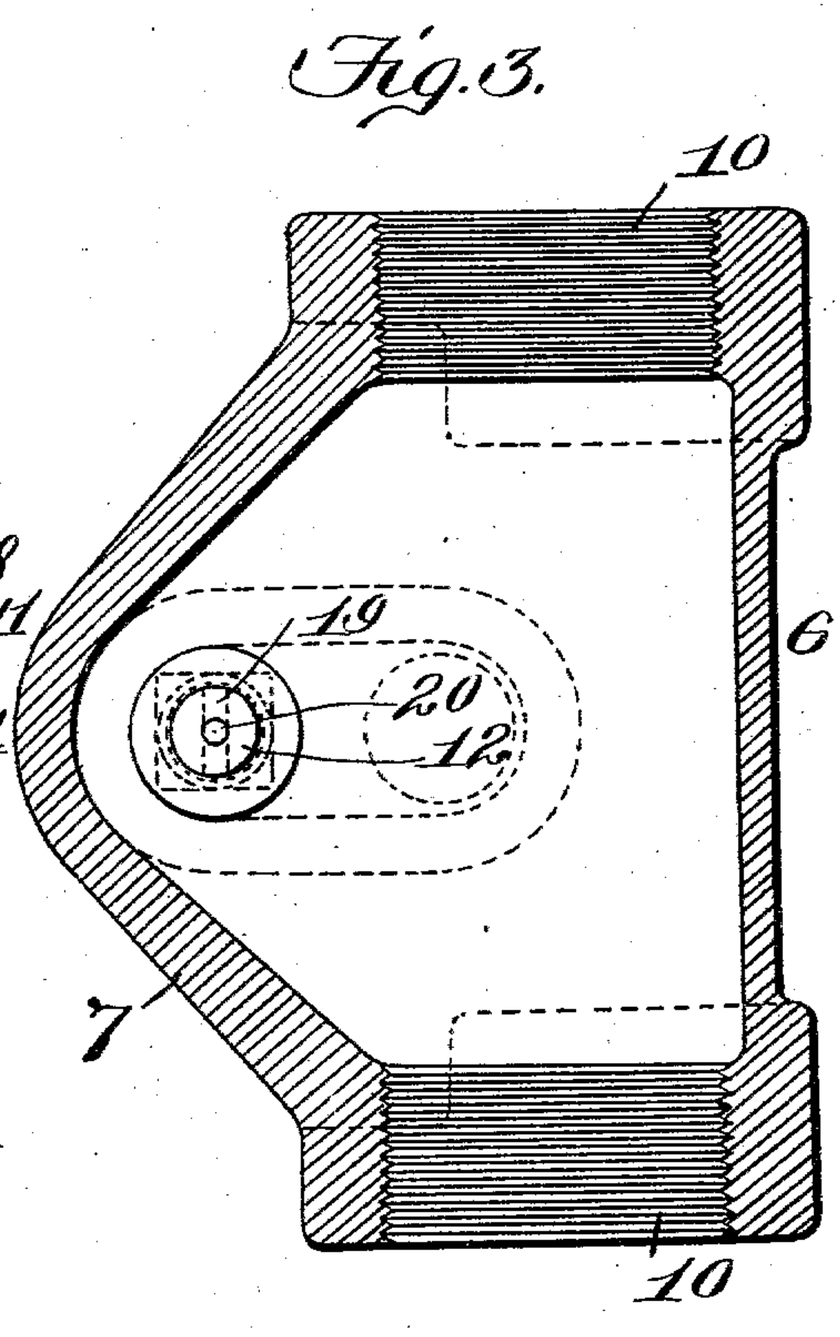
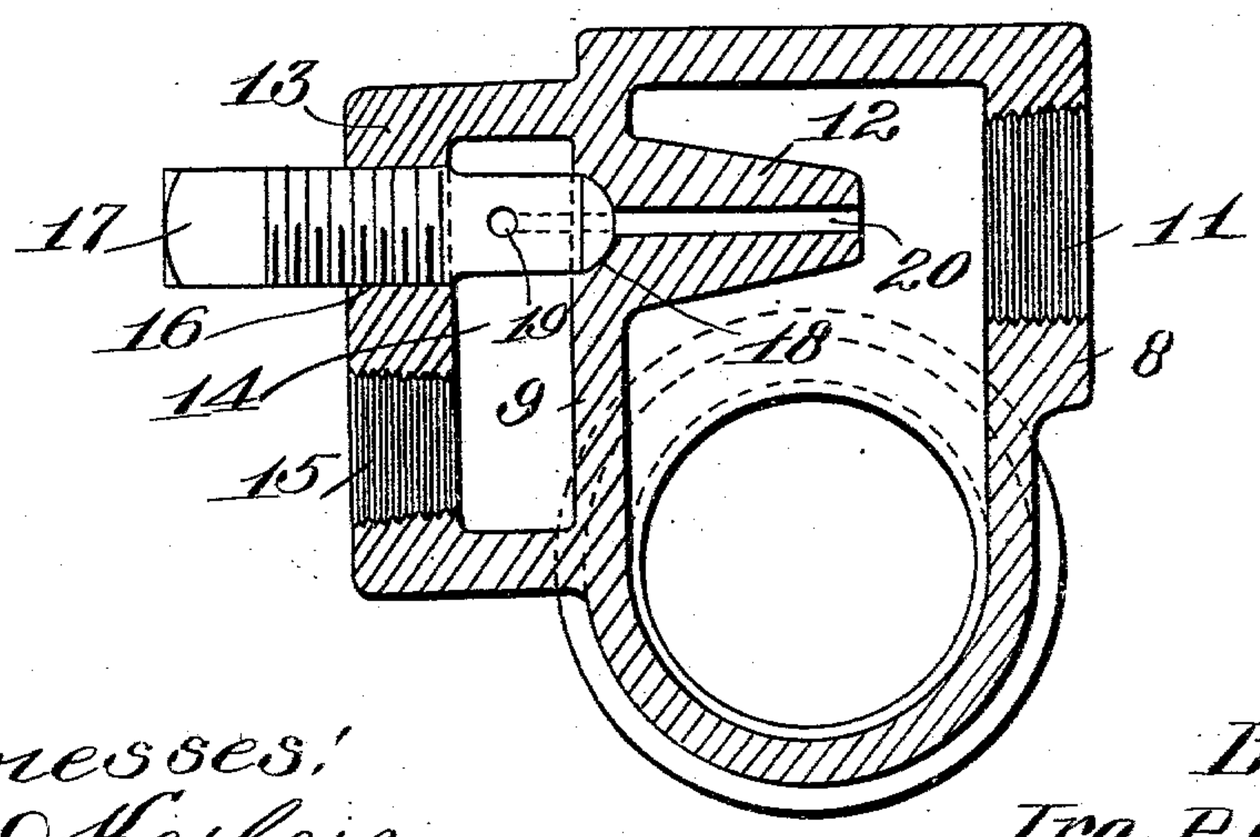


Fig. 4.



Witnesses:
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No. 752,954. Patented February 23, 1904.

UNITED STATES PATENT OFFICE.

IRA P. CARNES, OF LIMA, OHIO, ASSIGNOR TO LIMA LOCOMOTIVE AND MACHINE COMPANY, OF LIMA, OHIO, A CORPORATION OF OHIO.

PNEUMATIC SANDER.

SPECIFICATION forming part of Letters Patent No. 752,954, dated February 23, 1904.

Application filed November 12, 1903. Serial No. 180,946. (No model.)

To all whom it may concern:

Be it known that I, IRA P. CARNES, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented new and useful Improvements in Pneumatic Sanders, of which the following is a specification.

This invention relates to certain new and useful improvements in pneumatic sanders for locomotives; and the object thereof is to provide a new and novel sander whereby a blast of air may be used to discharge sand or other suitable material on the rail section or sections of a railway-track either in front of or behind the driver or drivers of a locomotive.

A further object of the invention is to construct a pneumatic sander for the purpose set forth which can be reversible, so as to permit of the removal of any foreign bodies that may collect within the device.

A further object of the invention is to construct a pneumatic sander for the purpose set forth, so that free access can be had to the air-nozzle if it becomes clogged or closed, so that the same can be cleaned without the removal thereof or the removal of any of the pipe connections.

A further object of the invention is to construct a pneumatic sander for the purpose set forth with an integral air-nozzle arranged directly opposite the discharge-opening of the sander and to further provide the sander with a pair of duplex openings, one of which forms the inlet for compressed air and the other of which is closed by a removable plug, so that by removing said plug access may be readily had to the nozzle should the same become clogged or closed, so that the said nozzle can be cleaned without removing it or any of the pipe connections.

A further object of the invention is to construct a pneumatic sander for the purpose set forth with an integral air-nozzle and a pair of duplex openings, one forming the inlet for compressed air and the other closed by a removable plug for the purpose set forth, said plug being suitably bored for establishing communication between the air-inlet and the nozzle.

A further object of the invention is to construct a pneumatic sander for the purpose set forth which shall be extremely simple in its construction, strong, durable, reversible, efficient in its use, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a side elevation of a portion of a locomotive, showing the sander connected therewith. Fig. 2 is a side elevation of the sander. Fig. 3 is a section on the line 3 3 of Fig. 2, and Fig. 4 is a section on the line 4 4 of Fig. 2.

Referring to Fig. 1 of the drawings, 1 denotes a portion of a locomotive; 2, the sander; 3, the air-pipe; 4, the sand-supply pipe, and 5 the sanding-pipe. When the sander is in position, the pipes 3, 4, and 5 communicate therewith, as shown in Fig. 1; but it is evident that the pipes 3 and 5 may be so connected to the sander 2 that the pipe 5 extends at the rear of the driver and not the front thereof.

Referring to Figs. 2, 3, and 4 of the drawings, 6 denotes a casting substantially cylindrical in contour and provided at one side intermediate its ends with an enlargement or offset 7. The front wall 8 and the rear wall 9 of said offset is substantially arch-shaped. Each end of the casting 6 is provided with interior screw-threads 10, and the wall 8 of the offset or enlargement 7 is formed with a screw-threaded opening 11, the opening 11 being the discharge-opening of the sander. The wall 9 of the offset or enlargement 7 is provided with an integral air-nozzle 12, arranged opposite the opening 11. Projecting from the wall 9 of the offset or enlargement 7 is a casting 13,

which is of such size as to form an air-chamber 14 and has one of its walls provided with duplex openings 15 and 16, the walls of which are screw-threaded. The opening 15 has connected thereto the air-supply pipe 3, and this opening 15 is termed the "air-inlet" of the sander. The opening 16 is closed by a screw-threaded plug 17, the inner end of which is seated in a recess 18, formed in the wall 9 of the offset or enlargement 7. The plug 17 extends in alinement with the nozzle 12 and is provided with a port or passage 19, which extends in a horizontal and longitudinal manner, and the longitudinal portion of said port or passage 19 registers with the bore 20 of the nozzle. The latter is or may be of greater diameter than the port or passage 19. The port or passage 19 establishes communication between the air-chamber 14 and the nozzle. The plug 17 when removed permits access to be had to the nozzle for cleaning it if the nozzle should be clogged or stopped up, and it is evident that the cleansing of the nozzle can be effected without disconnecting the air-pipe 3, which is connected to the opening 15, or the sanding-pipe 5, which is connected to the opening 11, or the sand-supply pipe 4, connected to one of the openings 10. When the pipe 4 is connected to one of the openings 10, the other of the openings 10 is closed by a removable plug 21, Fig. 1. It will be evident that the sander can be reversed, owing to the providing of the sander with the two screw-threaded openings 10, and that by removing the plug 21 any foreign bodies, such as stone and gravel or the like, can be discharged from the sander. The end of the sander in which the plug 21 is secured forms what may be termed a "trap."

It is thought the operation of the sander can be understood from the foregoing description, taken in connection with the accompanying drawings; but it will be stated that the sand being supplied by the pipe 4 the compressed air in the chamber 14 will pass through the port or passage 19 and into the nozzle, where the action of the air will force the sand to the track section or sections at the front or rear of the driver or drivers. The compressed-air pipe 3 can be connected to an air-reservoir or to an air-exhaust.

It is thought that the many advantages of my improved pneumatic sander can be readily understood from the foregoing description, taken in connection with the accompanying drawings, and it will furthermore be evident that changes, variations, and modifications can be resorted to without departing from the spirit of my invention or sacrificing any of its advantages, and I therefore do not wish to restrict myself to the details of construction hereinbefore described, and set forth in the annexed drawings, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sander comprising a casing having an integral nozzle and air-chamber, the wall of which is formed with duplex openings, one of which forms an air-inlet, and a plug extending through the other of the openings for establishing communication between the air-chamber and the nozzle and to permit of access to the nozzle.

2. A sander comprising a casing provided with an enlargement, one wall of said enlargement having a discharge-opening and the other wall an integral nozzle.

3. A sander comprising a casing provided with an enlargement, one wall of said enlargement having a discharge-opening and the other wall an integral nozzle, pipe connections for supplying air, sand and for discharging sand from said casing, and means adapted to permit of access to the nozzle without removing said pipe connections.

4. A sander comprising a casing provided with a discharge-opening and an integral nozzle opposite said discharge-opening, said casing further provided with duplex openings, one of which forms an inlet for air, and a removable plug arranged in the other of said openings and adapted to permit of access to the nozzle.

5. A sander comprising a casing provided with an offset having an integral nozzle and a discharge-opening, an extension connected with the offset and forming an air-chamber, said extension provided with duplex openings, one of which forms an inlet for the air-chamber, a removable plug for closing the other of said openings and adapted to permit of access to the nozzle for cleaning it, and supply and discharge pipe connections suitably connected to said extension, offset and casing.

6. A sander comprising a casing provided with an offset having an integral nozzle and a discharge-opening opposite the nozzle, an extension connected with the offset and forming an air-chamber, said extension provided with duplex openings, one of which is arranged opposite the nozzle and the other of which forms an air-inlet for the air-chamber, a removable plug for closing the opening opposite the nozzle and adapted to permit of access to the nozzle for cleaning it, and supply and discharge pipe connections suitably connected with said extension, offset and casing.

7. A sander comprising a casing provided with an offset having an integral nozzle and a discharge-opening, an extension connected with the offset and forming an air-chamber, said extension provided with duplex openings, one of which forms an inlet for the air-chamber, and a removable plug for closing the

other of said openings and adapted to permit of access to the nozzle for cleaning it.

8. A sander comprising a casing provided with an offset having an integral nozzle and a discharge-opening opposite the nozzle, an extension connected with the offset and forming an air-chamber, said extension provided with duplex openings, one of which is arranged opposite the nozzle and the other of which forms an inlet for the air-chamber, and a removable plug for closing the opening opposite the nozzle and adapted to permit of access to the nozzle for cleaning it.

9. A sander comprising a casing open at both ends, a plug for closing one end of said casing, a supply-pipe connected to the other end of said casing, said casing further provided with a discharge-opening, a discharge-pipe connected to said opening, a nozzle arranged in said casing, an extension integral with the casing and forming an air-chamber, said extension provided with duplex openings, one of which forms an air-inlet, a supply-pipe connected to said inlet-opening, and a removable plug for closing the other of said openings, and adapted to permit of access to the nozzle for cleaning it.

10. A sander comprising a casing open at both ends and provided with a discharge-opening, a plug for closing one end of said casing, a nozzle arranged in said casing, an extension integral with the casing and forming an air-chamber, said extension provided with duplex openings, one of which forms the air-inlet for said chamber, and a removable plug for closing the other of said openings and adapted to permit of access to the nozzle for cleaning it.

11. A sander comprising an integral body open at both ends and provided with an integral nozzle, a discharge-opening, an air-inlet opening, a removable plug which when removed will permit of access to the nozzle for cleaning it, and a plug for closing one of its ends.

12. A sander comprising a casing open at both ends, a plug for closing one end of said casing, said casing further provided with a discharge-opening, a nozzle integral with the casing and arranged opposite said discharge-opening, an extension integral with the casing and forming an air-chamber, said extension provided with duplex openings, one of which forms an air-inlet for said chamber and the other of which is arranged opposite the nozzle, and a removable plug for closing the other of said openings and adapted when removed to permit of access to the nozzle for cleaning it.

13. A sander comprising a casing provided with a discharge-opening and an integral nozzle arranged opposite said opening, and means adapted to permit of access to the nozzle for cleaning it.

14. A sander comprising a casing provided with an integral nozzle and a discharge-opening, an extension integral with said casing and forming an air-chamber, said extension provided with a pair of openings, one of which forms an air-inlet for said chamber and the other of which is arranged opposite said nozzle, and a removable plug extending through said opening opposite the nozzle and engaging said casing at the back of the nozzle, said plug provided with a passage registering with the port of the nozzle and opening into the air-chamber for establishing communication between the air-chamber and the nozzle, said plug when removed adapted to permit of access to the nozzle so as to clean the same.

15. A sander comprising a casing provided with an offset, one wall of which is formed with a discharge-opening and the other wall of which has integral therewith a nozzle arranged opposite the opening in the other wall, an extension formed integral with one wall of said offset and forming an air-chamber, said extension provided with a pair of openings, one of which forms an air-inlet for said chamber and the other of which is arranged opposite said nozzle, and a removable plug extending through said opening opposite the nozzle and engaging one wall of said offset at the back of said nozzle, said plug provided with a passage registering with the port of the nozzle and opening into the air-chamber for establishing communication between the air-chamber and the nozzle, said plug when removed adapted to permit of access to the nozzle.

16. A sander comprising a nozzle open at both ends, said casing provided with an integral nozzle and a discharge-opening opposite said nozzle, a plug for closing one end of the casing, an air-supply pipe communicating with one end of said casing, a discharge-pipe connected to said discharge-opening, an air-supply pipe communicating with said casing, and means connected with the casing and adapted when removed to permit of access to the nozzle without disconnecting the said pipes.

17. A sander comprising a nozzle open at both ends, said casing provided with an integral nozzle and a discharge-opening, a plug for closing one end of the casing, an air-supply pipe communicating with one end of said casing, a discharge-pipe connected to said discharge-opening, an air-supply pipe communicating with said casing, and means connected with the casing and adapted when removed to permit of access to the nozzle without disconnecting the said pipes.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

IRA P. CARNES.

Witnesses:
W. P. AGENTER.
H. C. HAMMACK.