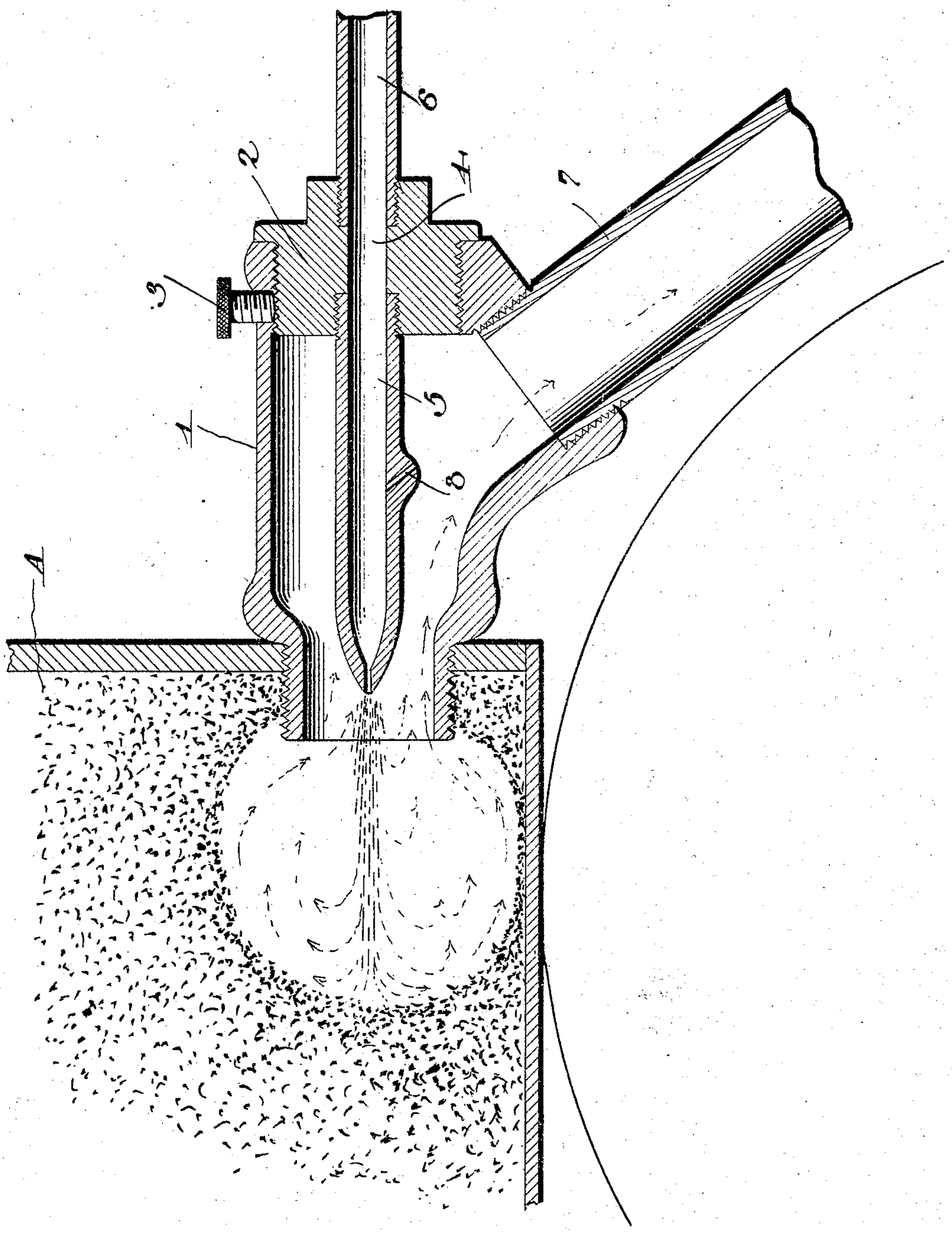
No. 785,284. PATENTED MAR. 21, 1905.

J. H. WATTERS.

TRACK SANDING DEVICE.

APPLICATION FILED OCT. 10, 1904.



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No. 785,284. Patented March 21, 1905.

UNITED STATES PATENT OFFICE.

JOHN HENRY WATTERS, OF AUGUSTA, GEORGIA.

TRACK-SANDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 785,284, dated March 21, 1905.

Application filed October 10, 1904. Serial No. 227,927.

To all whom it may concern:

Be it known that I, JOHN HENRY WATTERS, a citizen of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented a new and useful Track-Sanding Device, of which the following is a specification.

This invention relates to track-sanders, and has for its principal object to provide a thoroughly efficient sander by which a stream of sand may be discharged from the box under all conditions, the construction and operation being such as to insure the discharge of sand which may have become caked or packed in the box and the feeding of the poorer qualities or loamy sand.

A further object of the invention is to provide a track-sander employing a jet of fluid, the discharge of the sand occurring through the same opening through which the jet enters.

A still further object of the invention is to provide a sander in which the discharge is effected by a plurality of jets, one of which serves by pressure to disturb and agitate the sand, while the other creates a partial vacuum at the discharge-outlet to introduce a flow of sand therethrough.

A still further object of the invention is to provide a sanding device having but a single connection with the sand-box and of such construction as to permit its ready attachment to existing sand-boxes, and, further, to provide an air-brake nozzle that may be readily removed from position without disconnecting or removing any of the piping.

A still further object of the invention is to provide a track-sander in which two or more jets of air are employed for delivering the sand from the box, one of the jets being directed against the body of sand and serving to agitate and loosen the sand.

A still further object of the invention is to provide a track-sander by which any desired quantity of sand may be fed from the sand-box, the feeding being continuous so long as the actuating fluid is supplied to the nozzle.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawing, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

The drawing illustrates in sectional elevation a track-sander constructed in accordance with the invention.

The sand-box A is of the usual closed construction and is placed at any convenient point—as, for instance, on the top of a locomotive-boiler or in a car when used for sanding the tracks of street-railways. In one wall of the sand-box is a threaded opening for the reception of the threaded end of the casing 1 of the sander, said casing being provided at its opposite end with a threaded opening for the reception of a removable plug 2, which when screwed into place may be locked by a set-screw 3. The threaded plug is provided with a single air-passage 4, and to the inner face of said plug is secured a nozzle 5, that communicates with said passage, the nozzle being preferably arranged in the center of the casing and being adapted to direct a jet of air, steam, or other fluid against the body of sand in the box A, the impact serving to agitate and loosen the sand. The outer end of the passage 4 is threaded for the reception of a pipe 6, that is connected to a suitable source of pressure-supply. To the bottom of the casing is coupled a sand-discharge pipe 7, through which the sand is conveyed to the track, and in alinement with the longitudinal axis of said pipe an opening 8 is formed in the nozzle.

In operation the jet of air, steam, or other fluid is directed through the nozzle against the sand in the box, and a second jet of air is directed through the opening 8 and enters the discharge-pipe 7, the latter jet creating a partial vacuum within the casing and the upper end of the pipe, and thereby serving to induce the flow of sand into and through said pipe. The jet of air directed through the nozzle 6 serves to thoroughly agitate and loosen the sand, and as the jet is directed against the more or less

compact mass the loosened sand will be driven backward and pass into the casing 1 around the nozzle and will then come under the influence of the partial vacuum created in the casing by the air passing through the opening 8.

Having thus described the invention, what is claimed is—

1. In track-sanders, a sand-box, a discharge-tube leading therefrom to a point adjacent to the track, and means for directing a jet of fluid into the body of sand in a direction opposite to that in which the sand flows to the discharge-point.

2. In track-sanders, a sand-box having a discharge-pipe and means adjacent to the mouth of the pipe for directing a jet of fluid into the body of sand in a direction opposite to that in which the sand must flow in discharging.

3. In a sander, a sand-box having a discharge-mouth, and means for directing a jet of fluid into the body of the sand in the box in a direction away from said discharge-mouth and opposed to the general direction of flow of the sand in discharging.

4. A sand-box having a discharge-pipe, and means for directing a jet of fluid into the body of sand in the box in a direction opposed to the direction in which the sand must flow in discharging, the diameter of the pipe being greater than that of the jet.

5. A sand-box having a discharge-pipe, and a jet-nozzle disposed in the mouth of the pipe and serving to direct a jet of fluid against the sand in the box, the direction of the jet being opposite to that in which the sand must flow to be discharged through said pipe.

6. In a track-sander, a sand-box having a discharge-pipe, and means for directing two jets of fluid, one against the body of sand at the mouth of the pipe, and the other within the pipe to create a partial vacuum therein.

7. In track-sanders, a sand-box having a discharge-pipe, means for creating a partial vacuum within said pipe, and means for directing a jet of fluid against the body of sand at a point adjacent to the mouth of the pipe.

8. In track-sanders, a sand-box having a discharge-pipe, and a nozzle disposed adjacent to the mouth of the pipe and provided with openings for directing jets of fluid in different directions.

9. In a track-sander, a sand-box having a discharge-pipe, and a nozzle member disposed within the mouth of the pipe and provided with openings for directing two jets of fluid, one in the direction of flow of the sand through the discharge-pipe, and the other in the opposite direction.

10. In a track-sander, a casing coupled to the side of the sand-box, a discharge-pipe connected to the lower side of the casing, a threaded plug fitting in a threaded opening at the outer end of the casing, a nozzle carried by and removable with said plug, and a fluid-pressure pipe connected to the plug.

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

JOHN HENRY WATTERS.

Witnesses:

E. J. COSGROVE,

W. U. COOK,