

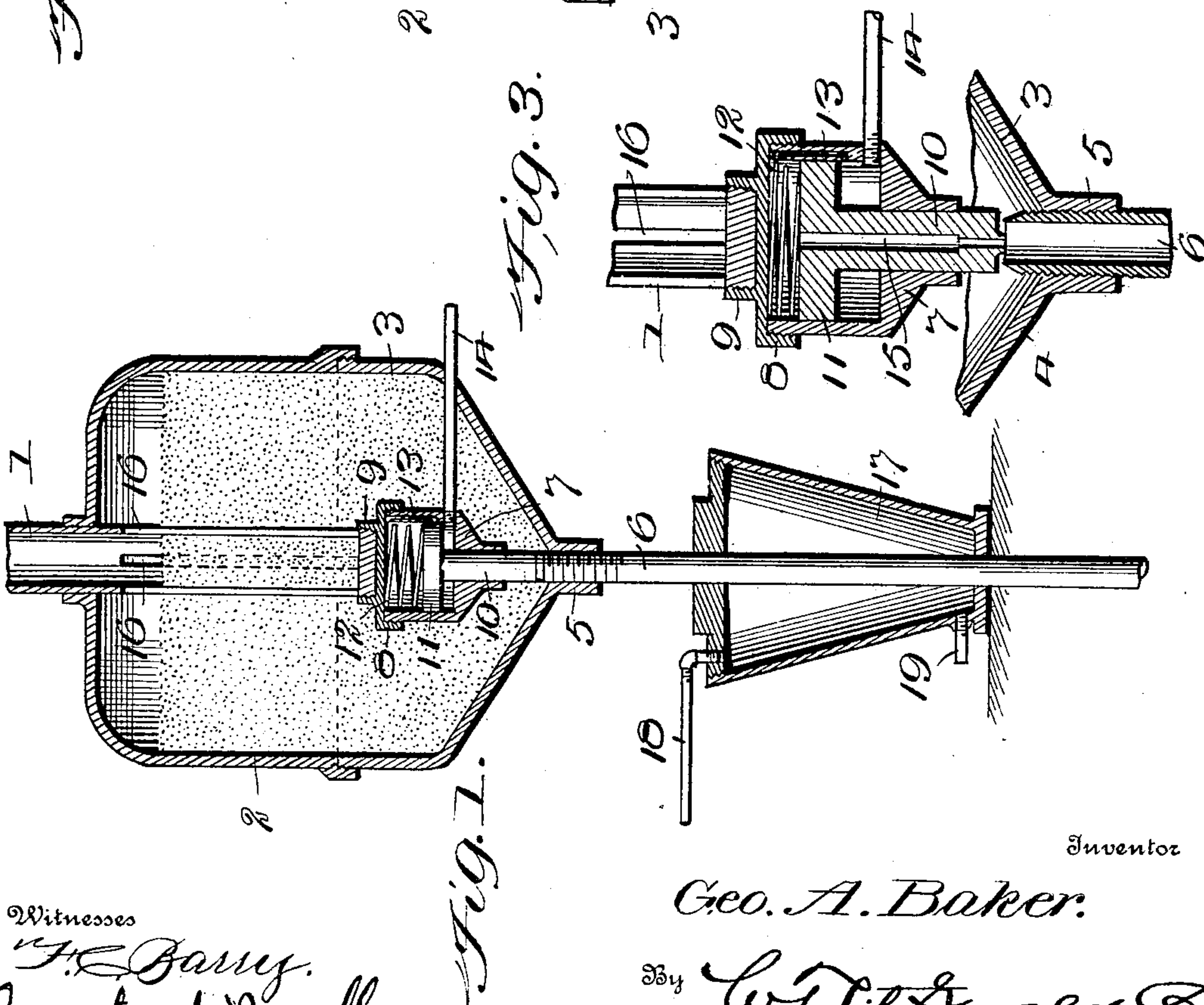
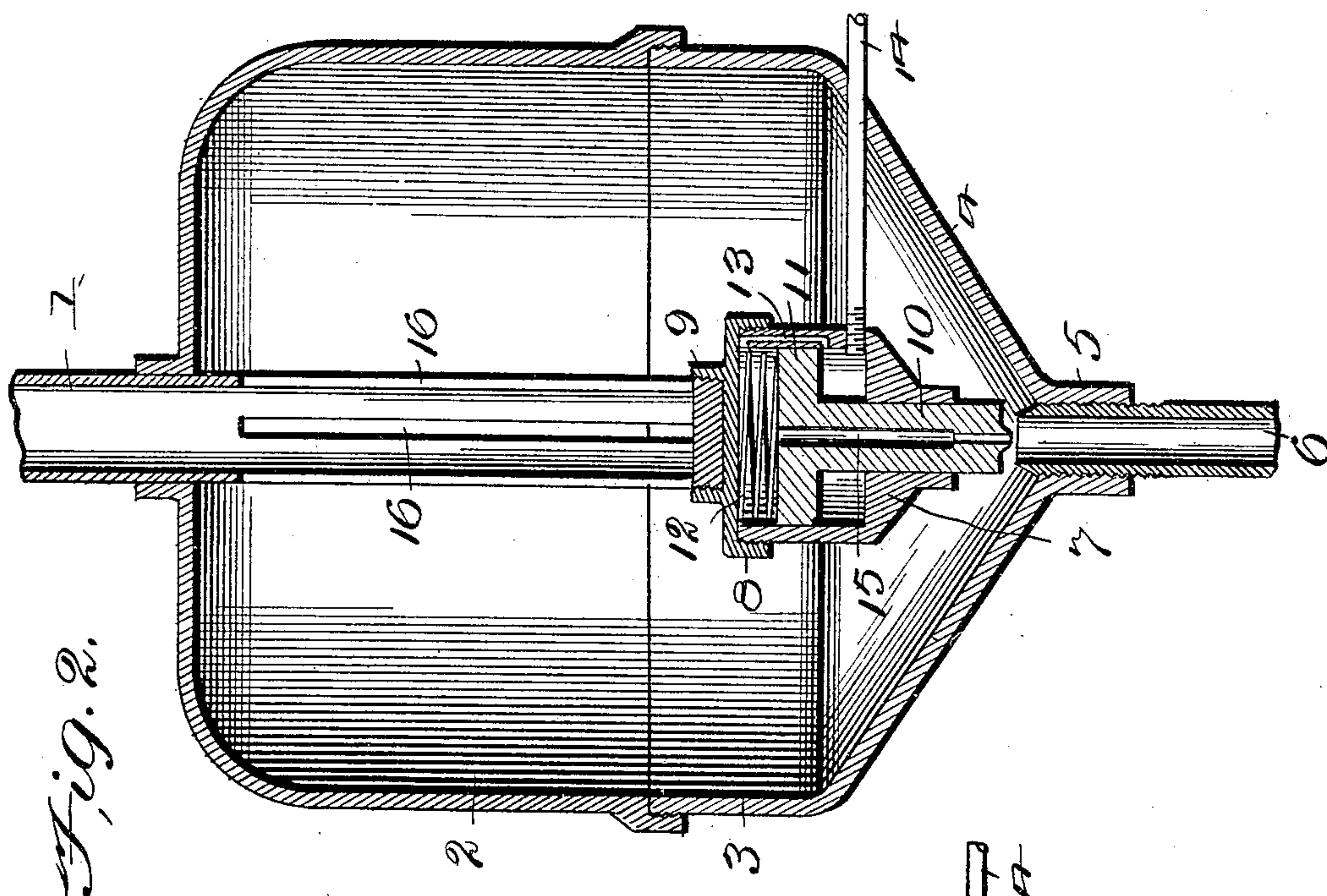
No. 795,472.

PATENTED JULY 25, 1905.

G. A. BAKER.

SAND DELIVERING APPLIANCE.

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UNITED STATES PATENT OFFICE.

GEORGE A. BAKER, OF NORWICH, NEW YORK.

SAND-DELIVERING APPLIANCE.

No. 795,472.

Specification of Letters Patent.

Patented July 25, 1905.

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To all whom it may concern:

Be it known that I, GEORGE A. BAKER, a citizen of the United States, residing at Norwich, in the county of Chenango and State of New York, have invented certain new and useful Improvements in Sand-Delivering Appliances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a sanding attachment for locomotives and other form of motors traveling upon track-rails; and my invention consists of certain novel features of construction and combination of parts, the preferred form whereof will be hereinafter clearly set forth, and pointed out in the claims.

The prime object of my invention, among others, is to provide an attachment of the character specified which when placed in coöperation with the usual sand-box or other sand-receptacle will insure that proper delivery of the required quantity of sand will be made by the simple opening of a valve without regard to the condition of the weather or the sand acted upon by my discharging appliance.

A further object of my invention is to provide a discharging appliance which will deliver a suitable quantity of sand directly upon the surface of the track-rail in advance of the traction-wheels and which will not become clogged or inefficient, as is now common.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, which are made a part of this application, and in which—

Figure 1 shows a longitudinal central section of my sand-delivering appliance and certain elements placed in operative relationship therewith. Fig. 2 is a central sectional view of my sand-discharging appliance, while Fig. 3 shows part of the construction illustrated in Fig. 2 with a slightly different adjustment, whereby a less quantity of sand will be discharged.

For convenience of reference to the various details and coöperating accessories of my invention numerals will be employed, the same numeral applying to a similar part throughout the several views.

Referring to the numerals on the drawings, 1 designates a sand-supply pipe leading from the sand-box of the locomotive or other point where the traction-sand is stored, while 2 and

3 indicate sections of my sand-holding receptacle, and while I have shown said receptacle as formed in two parts for convenience of manufacture it will be understood that said parts may be integrally formed, if preferred. The lower end of my sand-holder is cup-shaped or tapered, as indicated by the numeral 4, said tapered terminal being provided with the discharging-nozzle 5, which is interiorly threaded and designed to receive the conveyer-pipe 6, leading down to the traction-rail. Within the casing thus or otherwise constructed I provide a sand agitating and discharging device or valve comprising the body portion 7, suitably held in place within the casing members 2 and 3 by means of the cap or closure section 8, which latter is connected to the sand-conveying pipe 1 by the threaded flange 9 or the equivalent thereof.

The lower end of the body portion or casing 7 is provided with a bore or opening to receive a hollow piston rod or plunger 10, having on its upper end the piston 11 of proper size to fit within the bore of the body portion 7, and said piston is designed to play or reciprocate therein, as will be hereinafter specifically set forth.

The piston 11 is held normally downward by means of a suitable spring 12, disposed between the piston and the closure-section 8, as will be clearly obvious by reference to the drawings. The piston 11 is shown in a downward or closed position in Fig. 1, and the peripheral edge thereof is disposed over the lower end of the port 13. It therefore follows that when the tension of the spring 12 is overcome and the piston is moved upward the sand-piston will ride past the lower end of the port 13 and leave the same in an open position. I am enabled to raise the piston as desired by means of compressed air introduced into the casing 7 below the piston 11 by means of the air-conveying pipe 14 leading to any suitable source of supply, and since the piston rod or plunger 10 is provided with a bore 15 it follows that a blast of air will be delivered at the lower end of said plunger directly into the bore of the sand-discharge pipe 6, and since the receptacle formed of the members 2 and 3, as above explained, is kept normally filled with sand through the mediation of the supply-pipe 1 it follows that no clogging of the sand will be possible at the upper end of the discharge-pipe 6 or at the coöperating lower end of the tubular piston-rod 10, since the blast of air delivered through the

piston-rod will set up a strong suction, which will disturb or prevent all incrustation or tendency of the sand to solidify.

It will be seen that the discharge-pipe 1 is provided on its lower end within the casing with a plurality of openings, preferably a series of slots 16. In order to prevent the discharge-pipe 6 from becoming clogged, as might be possible in cold weather, I surround said discharge-pipe with a suitable casing or jacket 17 of any preferred size and shape, whereby an annular chamber will be provided around said pipe and for any distance thereof, as may be deemed necessary. Coöperating with the jacket 17 is a steam-supply pipe 18, while at the lower end, and preferably upon the side opposite the point of entrance of the steam-supply pipe, I locate an exhaust-port 19, and it therefore follows that inasmuch as the steam-supply pipe may be readily connected with the waste steam from the exhaust-pipe of the air-pump I utilize such steam as would otherwise be wasted.

It will be seen that I have provided a reliably efficient sand-discharge appliance which will prevent the sand from clogging or freezing, and thereby insure that a proper quantity of dry sand will be delivered to the track-rail at the point desired.

From the foregoing description it is obvious that should the sand-delivering ports 16 in the supply-pipe 1 for any reason become clogged said ports may be readily opened by disconnecting the supply-pipe, which can be readily accomplished by providing a suitable union above the sand-receptacle 2 and 3 and stopping the end of the discharge-pipe 6 and then introducing an air-pressure through the pipe 14, and the result will be that since the air cannot pass downward through the discharge-pipe 6 it is directed upward through the ports from the inside thereof, thereby forcing out of said ports any obstructing matter and causing such matter to pass out of the open end of the supply-pipe, as will be readily obvious.

The quantity of sand to be discharged through the pipe 6 may be readily controlled or regulated by a proper adjustment of said discharge-pipe within the interiorly-threaded nozzle 5.

In Fig. 3 I have shown the discharge-pipe as being adjusted in close proximity to the lower end of the tubular piston-rod 10, while in Fig. 2 said parts are more greatly sepa-

rated, the result being that a greater quantity of sand will be delivered by means of the adjustment shown in Fig. 2.

The various parts of my invention may be made of any suitable material and any desired size deemed requisite to meet the requirements, and while I have described the preferred combination and construction of parts I desire to comprehend in this application all substitutes and equivalents fairly falling within the scope of my invention.

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

1. The herein-described sand-delivering appliance comprising the combination with the supply-pipe leading to the sand-box or other source of supply, of a sand-receiving chamber; an adjustable discharge-pipe located at the lower end of said chamber; a casing 7 attached to the lower end of the supply-pipe and below the sand-ports in said pipe; a piston having a tubular stem fitting in said casing, said stem leading into direct communication with the upper end of the discharge-pipe; a port 13 in the casing leading from the upper to the lower end thereof; means to hold the piston normally downward whereby the lower end of said port will be closed by the peripheral edge of the piston and an air-supply pipe leading to the lower end of the casing 7 beneath the piston whereby when air is introduced the piston will be raised and the air pass through said port into the upper end of the casing and thence downward through the tubular piston-rod and into the contiguous end of the discharge-pipe, all combined substantially as specified and for the purpose set forth.

2. In a sand-delivering appliance, the combination with a sand-receiving chamber having an adjustable discharge-pipe located at the lower end thereof, of a jacket 17 surrounding said discharge-pipe and suitable pipes connecting said jacket with an exhaust-port whereby steam will be forced through said jacket and the discharge-pipe heated substantially as specified and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. A. BAKER.

Witnesses:

F. J. KERRIGAN,
A. E. LUDINGTON.