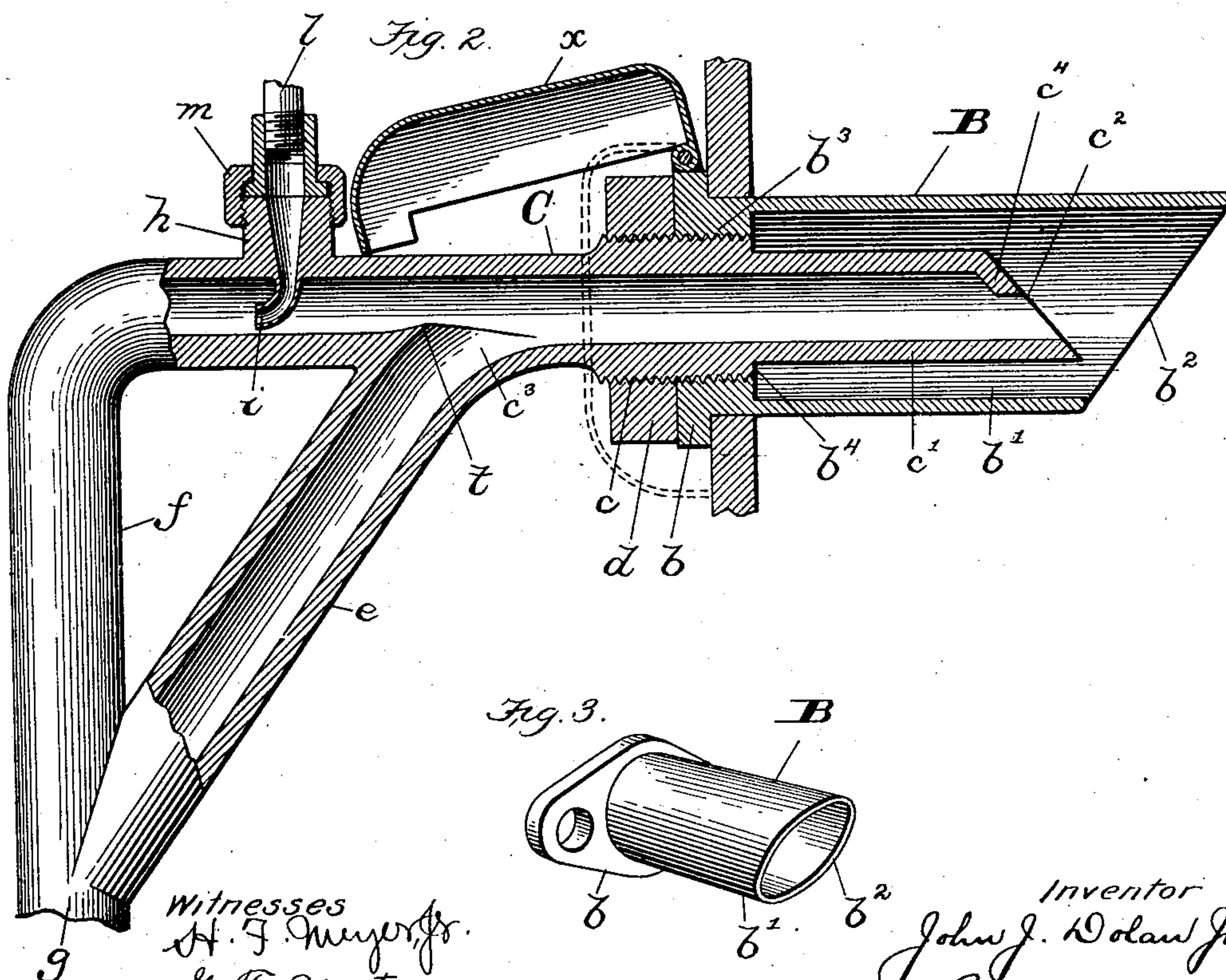
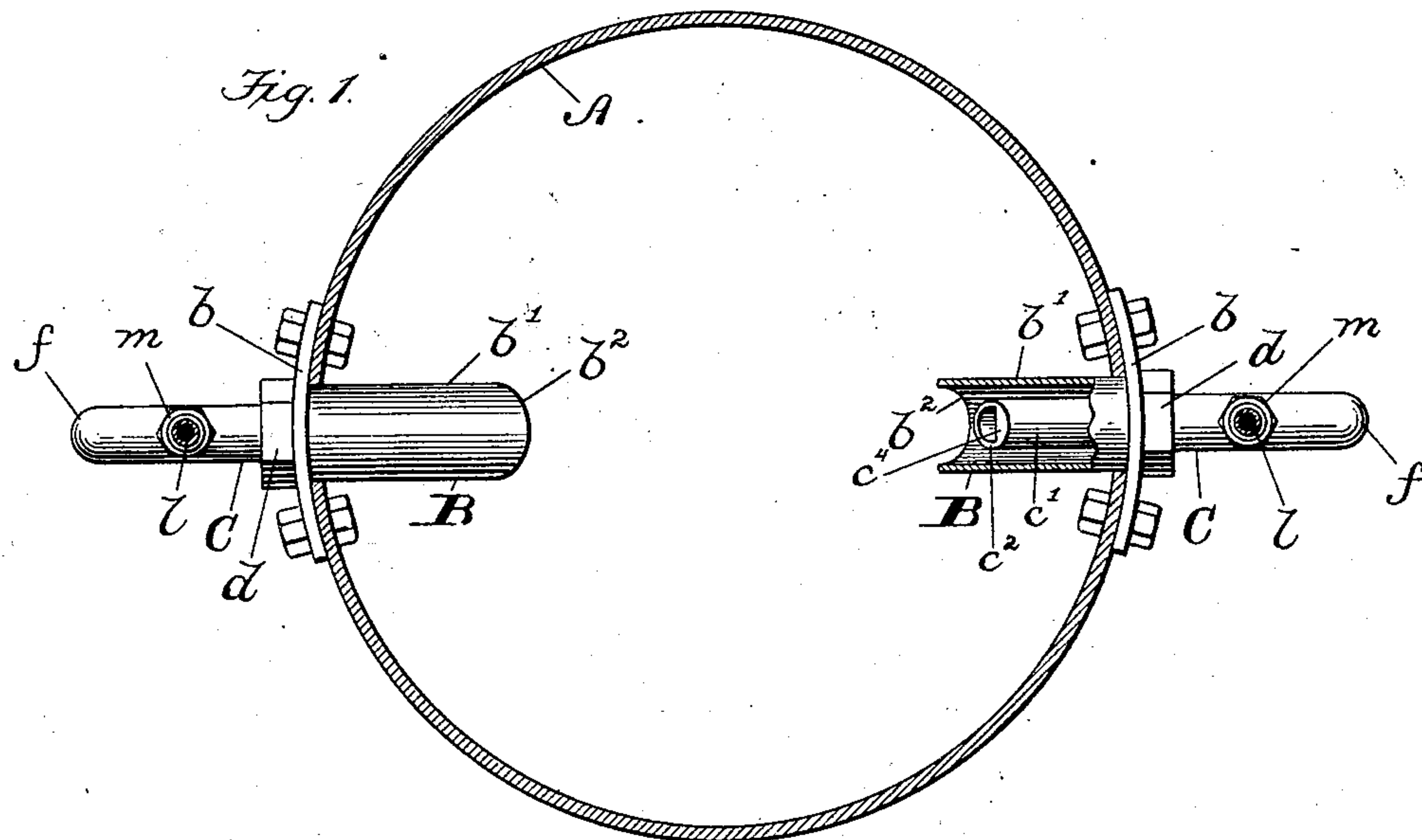


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PATENTED DEC. 22, 1903.

J. J. DOLAN, JR.
TRACK SANDING APPARATUS.
APPLICATION FILED MAR. 4, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN J. DOLAN, JR., OF BALTIMORE, MARYLAND.

TRACK-SANDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 747,539, dated December 22, 1903.

Application filed March 4, 1903. Serial No. 146,062. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. DOLAN, Jr., a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Track-Sanding Apparatus, of which the following is a specification.

This invention relates to improvements in track-sanding apparatus of that class in which the discharge of sand from the sand-box is effected by fluid-pressure, such as air or steam, controlled by the engineer in the locomotive-cab.

The object of the invention is to provide an improved construction of sanding apparatus of this character in which the sand is sucked from the sand-box by the blast of air or steam.

The invention consists of certain constructions, arrangements, and combinations of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a horizontal sectional view of a sand-box provided with an improved track-sanding apparatus of my invention. Fig. 2 is an enlarged vertical longitudinal section illustrating one of the sanders. Fig. 3 is a detail perspective view of a shield hereinafter described.

Referring to the drawings, the letter A designates a locomotive sand-box provided at diametrically opposite points with discharge-openings in each of which is secured a shield B, comprising a plate *b*, rigidly secured to the sand-box, and an inwardly-extending sleeve *b'*, whose inner edge is preferably formed with a downwardly-facing bevel *b²*. The said shield B is also provided at its outer end with an interior enlargement *b³*, which is interiorly threaded and which forms at its innermost face a shoulder *b⁴*. In the said threaded interior enlargement of each shield is secured a sand-casing C, provided with an exteriorly-screw-threaded portion *c* engaging the screw-thread of the said enlargement and prevented from accidentally unscrewing therefrom by means of a nut-lock *d*, which jams against the plate *b* and makes a tight construction and strengthens the box, and said casing is also provided with a feed-tube *c'*, preferably projecting into the sleeve *b'* of the shield B to prevent the sleeve from wearing and spaced

or offset therefrom to give sufficient clearance for preventing the sand from packing around the tube, as illustrated in Figs. 1 and 2, and preferably having an upwardly-facing bevel *c²* at its inner edge. Beyond that portion of the casing C which is secured to the shield B the said casing is provided on its under side with a depressed sand-outlet *c³*, from which extends a downwardly-inclined sand-discharge tube *e*, and from the outer end of the said casing leads a downwardly-extending fluid-pressure tube *f*, which joins with the sand-discharge tube *e*, both of said tubes *e* and *f* being in turn joined to a pipe *g*, common to both and extending down to the track-rail. Each casing C is also provided on its upper side and at a point beyond its sand-outlet *c³* with a nipple *h*, having at its lower end a nozzle *i*, deflected outwardly from the sand-box, and a pipe *l*, leading from the source of fluid-pressure supply, is connected, preferably by a swivel-nut *m*, to said nipple. It will be seen that the nozzle *i* has position between the downwardly-inclined sand-discharge tube *e* and the fluid-pressure tube *f*.

When a blast of air or steam is blown through said outwardly-deflected nozzle *i*, it will draw or suck the sand that is in the box through the feed-tube *c'*, whence it will pass through the outlet *c³* and fall through the sand-tube *e*, and thence it enters the pipe *g* and there meets the blast of air or steam passing through the fluid-pressure tube *f*, being then driven by the said air or steam and being thereby accelerated in its passage to the track-rail. By this construction it will be seen that the sand is first sucked by the draft created in the front of it and deposited in the tube *e*, and then as it passes from the said tube *e* into the pipe *g* the fluid-pressure will propel the sand in front of it and will also create a downward draft at the lower end of the tube *e* and suck the sand from that tube into the pipe *g*. Thus it will be seen that the sand is sucked from the box and dropped into the tube *e* and then sucked from the tube *e* into the pipe *g*.

It is sometimes necessary to unscrew the casings C and withdraw the same from the sand-box in order to remove any obstructions that might have found their way into the sand-passage or for other reasons, and for

this contingency, so that the sand may not then flow out of the sand-box and be wasted, I have provided the two shields B, whose sleeves surround the inwardly-extending feed-tubes c' . By this construction and arrangement, when the said feed-tubes are withdrawn in the act of disconnecting the casings from the sand-box, the said sleeves will effectually prevent any wasting of sand from the box. The downwardly-facing bevel of the inner end of the sleeve provides that the sand sucked out will be drawn from the bottom of the sand-box and at the same time causes said sleeve to present to the sand a longer surface on its upper side than it would if its entrant-opening were not so beveled, thereby more effectually preventing the sand from falling into said opening.

The lower portion of the interior shoulder b^4 at the outermost end of the sleeve b' presents a surface against which any sand that might find its way into the sleeve will bank and be prevented from escaping from the box. When the casings are disconnected or broken off by accident, the openings in the shields may be closed by any well-known way, such as by plugs, (not shown,) to prevent moisture from entering and affecting the sand. As one way of closing the said openings I have shown in Fig. 2 an automatic cover x , which is pivoted at any suitable point to the apparatus and which rests normally on the casing, so that it will drop down tightly over the discharge-opening of the sand-box if the casing is disconnected or broken off, and said cover may be raised to hold itself out of the way when desired.

It is to be especially noted that the construction of casing C, hereinbefore described, with its two tubes e and f , provide separate passages for the blast of air or steam and the sand and that the nozzle i is located in the case at a point beyond the sand-outlet. Hence the said nozzle, nor that part of the casing which contains it, will not become worn by the contact of sand therewith, because, although some sand may be drawn with the blast out through the fluid-pressure tube f , yet only the lighter and least harmful particles of the sand will be so drawn, while the heavier particles and gravel and the major portion of the sand discharged will drop through the outlet c^3 and not come in contact with said nozzle.

While the accompanying drawings illustrate my invention embodied in a "single" sander—that is, one designated to convey sand to the track-rails only in front of the driving-wheels—it is to be understood that it is equally applicable for a double, triple, or quadruple sander. Furthermore, while the accompanying drawings show the tubes e and f and the pipe g integral with the casing it is manifest that these parts may be made separately and connected together, and it is also to be understood that the invention is not

limited to the portion or length of sleeve b' shown nor to the bevels $b^2 c^2$; that the part of the shield B to which the casing is secured may be longer than shown, so that the casing will have position farther away from the sand-box; that it will not depart from the scope of the invention to change the position or angle of the casings and their shields from the horizontal position shown, and that other changes may be made in the details of construction and arrangement of parts without departing from the scope of the invention as defined in the appended claims.

As shown in Fig. 2, the interior of the casing is provided with a projection t at the far side of the sand-outlet, which projection will act as a braker to more effectually prevent any sand from being drawn out through the air-tube f and to direct it into the sand-tube e , and, as also shown in Fig. 2, the inner end of the feed-tube c' is provided with a lip c^4 , which contracts the end of said tube, so that the sand will not enter the same too freely.

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

1. A track-sanding device provided with a sand-inlet and a fluid-pressure inlet and also having a sand-outlet which is interposed between said two inlets.

2. A track-sander comprising a casing adapted to be secured to a sand-box and provided at one end with a feed-tube; in combination with a fluid-pressure feed device for sucking the sand through said feed-tube, and a sand-discharge tube opening into said feed-tube between its entrance and said fluid-pressure feed device.

3. A track-sanding device provided with a sand-inlet and a fluid-pressure outlet and also having a sand-outlet which is interposed between said sand-inlet and said fluid-pressure outlet.

4. A track-sanding device provided with a sand-inlet and a fluid-pressure outlet and having a sand-outlet between said sand-inlet and fluid-pressure outlet and a fluid-pressure inlet between the sand-outlet and the fluid-pressure outlet.

5. A track-sander comprising a casing provided in its bottom with a sand-outlet; a sand-discharge tube leading from said sand-outlet; a fluid-pressure tube extending downwardly from said casing at a point beyond said sand-outlet; a pipe designed to lead to the track and connected to both of said tubes; and an outwardly-deflected fluid-pressure nozzle in said casing between the upper end of said fluid-pressure tube and the said sand-outlet.

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

JOHN J. DOLAN, JR.

Witnesses:

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