

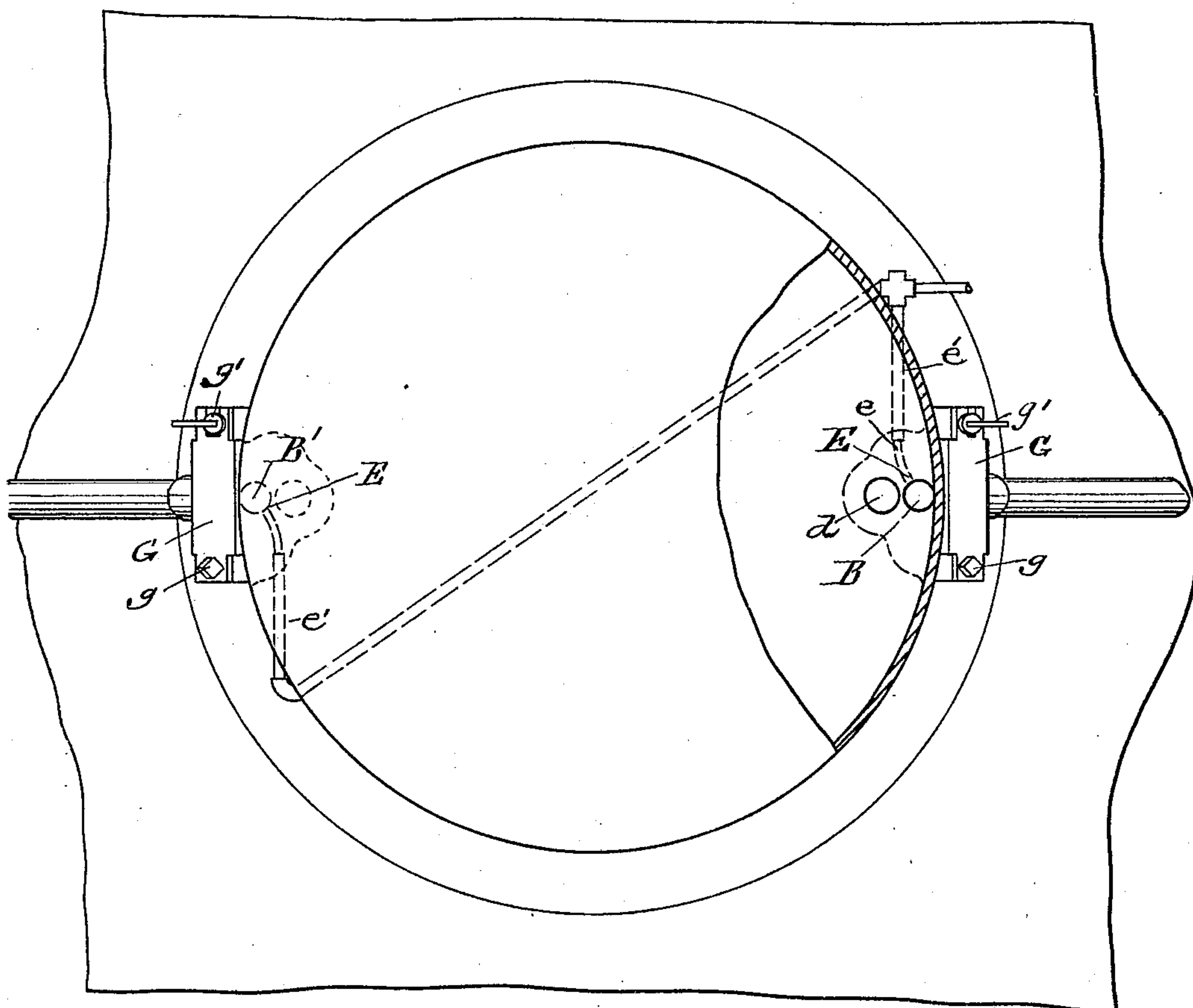
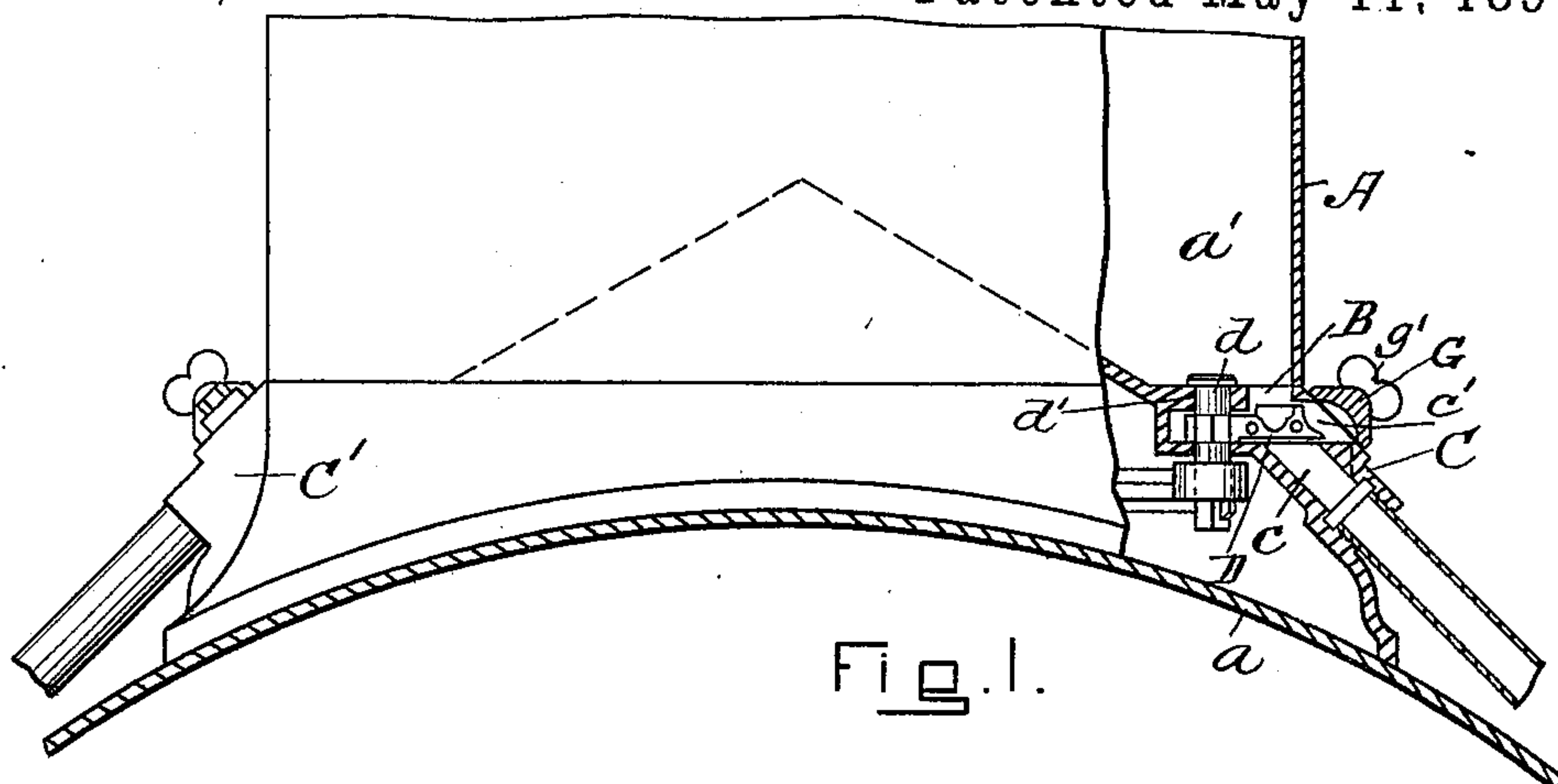
(No Model.)

2 Sheets—Sheet 1.

C. W. SHERBURNE.  
TRACK SANDING APPARATUS.

No. 582,552.

Patented May 11, 1897.



WITNESSES

J. M. Dolan.  
Leo. A. Walsh.

Fig. 2.

INVENTOR

Chas. W. Sherburne  
by his Attys  
Clark & Raymond

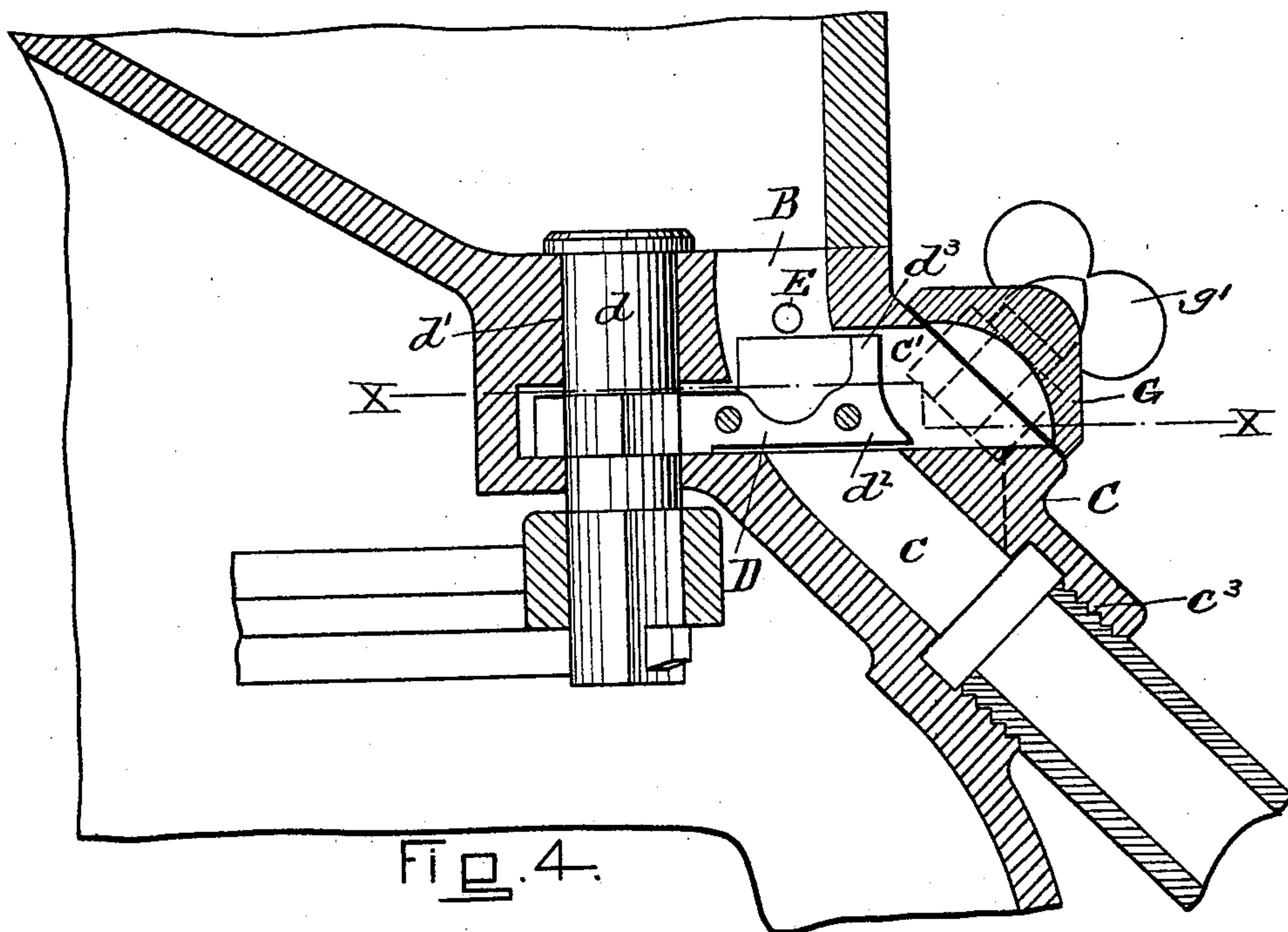
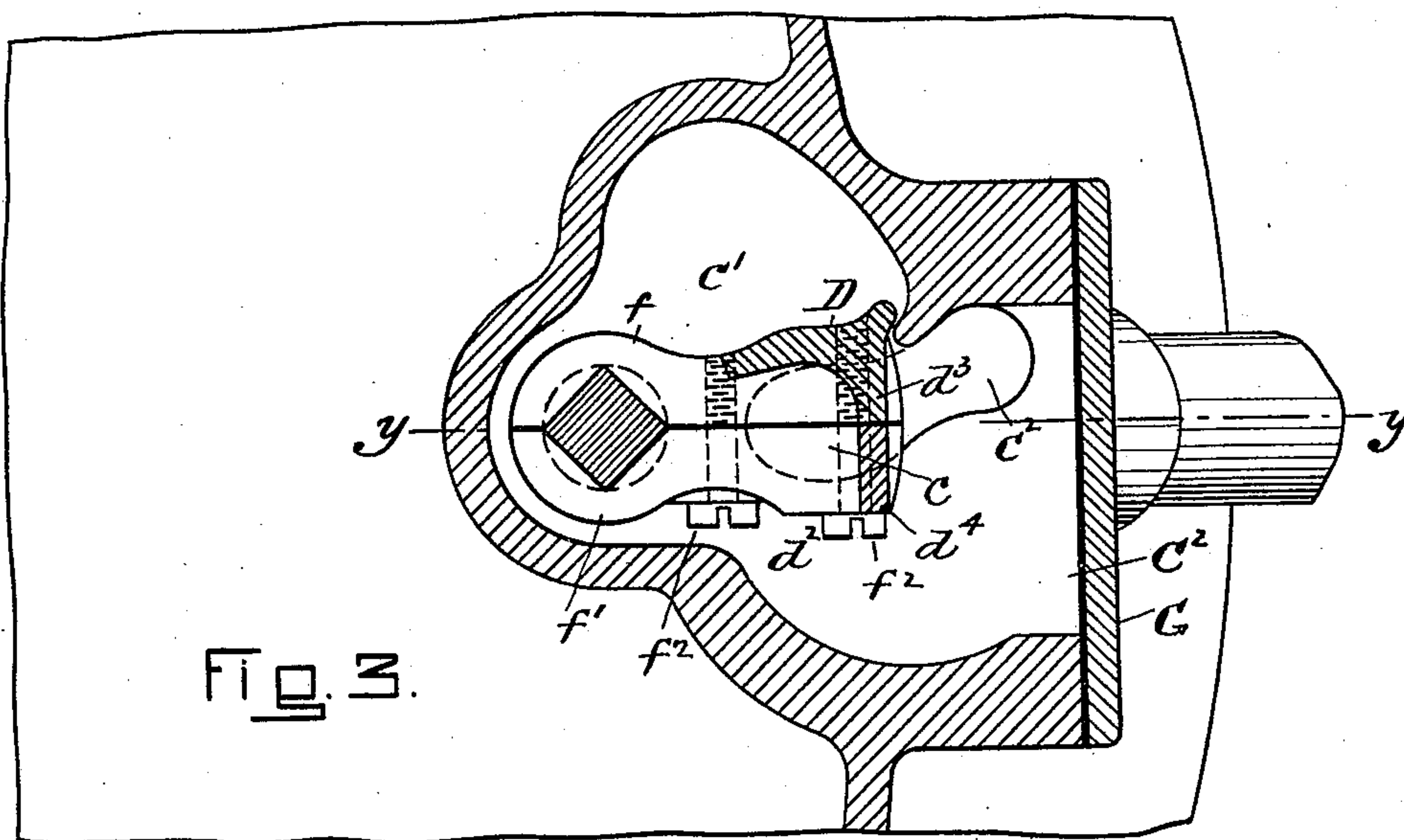
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# UNITED STATES PATENT OFFICE.

CHARLES W. SHERBURNE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE  
AUTOMATIC TRACK SANDING COMPANY, OF SAME PLACE AND PORT-  
LAND, MAINE.

## TRACK-SANDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 582,552, dated May 11, 1897.

Application filed June 15, 1896. Serial No. 595,617. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. SHERBURNE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Track-Sanding Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention is an improvement upon that described in my Letters Patent of the United States No. 544,073, dated August 6, 1895. The track-sanding apparatus described in said patent has the valves covering the sand-outlets and the pipes providing the air-blast within the sand-box, where they are not readily accessible for repairing, renewal, or inspection.

By my present invention the valves are not located in the sand-box and are made readily accessible without disturbing the sand-box or its contents.

In the drawings, Figure 1 is a view of the sand-box as equipped with my improvement, showing a portion partly in elevation and partly in section. Fig. 2 is a view of the same, principally in plan, a portion of the box being broken out. Fig. 3 is a detail view, enlarged, of one of the valves and its surroundings upon the dotted line  $x x$  of Fig. 4; and Fig. 4 is a view of the said valve upon the dotted line  $y y$  of Fig. 3 and upon the scale of the said figure.

The sand-box A is a large hollow casting arranged to rest upon the upper surface  $a$  of the boiler and providing a large chamber  $a'$  for holding the sand. Preferably its bottom is inclined or conical in shape to direct the sand toward the sand-outlets B B' in the bottom near each side of the box, and the parts C C' of the box are cast of a thickness and size to provide a sand-passage  $c$  from each sand-outlet and a valve-chamber  $c'$ , (see Figs. 3 and 4,) which is open at its front C<sup>2</sup>. The sand-passage extends across the chamber, (see Figs. 1 and 4,) and the said valve-chamber extends laterally from the sand-passage  $c$  sufficiently to permit the reception and movement of the valve D.

I have represented the valve as attached

to a stud or shaft  $d$ , extending through the hole  $d'$ , the upper end of which stud is headed and rests upon the bottom of the sand-box, and the lower end of which is connected with a mechanism by which it is turned. The valve has the section  $d^2$ , which extends across the passage  $c$ , on two sides of which, preferably, there is the angular wall or shield  $d^3$ . This may be integral with the valve to be moved therewith or it may be separate therefrom and stationary. It is represented as movable with the valve.

When the sand is fed by an air or similar blast, the valve occupies the position represented in Fig. 3 and the air or similar blast is introduced into the part of the passage  $c$  above the valve and valve-chamber, preferably at E, (see Figs. 2 and 4,) the air being fed through the hole  $e$  in the casting with which the supply-pipe  $e'$  connects, and the sand is then fed about the vertical end  $d^4$  of the shield through the valve-chamber into the part  $c^2$  of the passage  $c$ , which extends by the front edge of the valve. (See Fig. 3.)

It will be seen that the valve-chamber is arranged or formed in an integral extension from the sand-box and that it is of a peculiar shape, having not only at one side a lateral extension into which the valve is adapted to be turned to uncover a portion of the outlet, but also an extension upon the other side of the valve which connects the direct channel or inlet B to the valve-chamber with the uncovered section of the outlet when the valve is closed and with the entire outlet when the valve is opened. This extension of the valve-chamber provides a flat surface or bottom which acts as a rest of such shape for the column of sand back of it that the sand cannot escape by gravity when the valve is closed from such rest or surface into the uncovered section of the outlet. Furthermore, the air entering through the inlet E will give the lower end of the said sand-column a movement upon said rest or surface to and down the uncovered section of the outlet.

It will also be seen that the outlet is elongated and that only its inner section is adapted to be covered by the valve, and that the valve itself is so constructed as not only to cover the inner section of said outlet, but to



partially divide by a vertical partition the said valve-chamber, whereby the sand is held from flowing directly over its edge into the uncovered portion of the passage beyond, the said valve-section, however, not acting to impede the flow of sand around the valve upon the flat bottom or surface of the valve-chamber.

To permit the sand to be fed by gravity, the valve is moved laterally into the section  $c'$  of the chamber, thereby removing the barrier between the upper and lower sections of the sand-passage.

In order that the valve may be removed from its operating shaft or spindle without removing the said shaft or spindle, it may be made in two parts  $f f'$ , (represented in Figs. 3 and 4,) which parts are fastened together by the screws  $f^2$ , and these parts are so shaped as to be clamped or attached to the shaft or spindle by the screws and to be removable therefrom upon the loosening and removal of the screws. The opening  $C^2$  is such that upon the removal of the cover  $G$  the valve and sand-passage are exposed and readily reached, and the valve is thereby easily adjusted, repaired, removed, and replaced, and any obstruction to the sand-passage or wrong action of the valve may be immediately removed or remedied.

I prefer that the cover or plate  $G$  be fastened by a bolt  $g$ , passing through one end, upon which it may be turned or be hinged, and the thumb-screw  $g'$  and endwise removable bolt at the other end.

The lower end of the sand-passage  $c$  has an interior screw-thread  $c^3$  for receiving the threaded upper end of the sand-delivery pipe.

It will be understood that the valves are connected together to be simultaneously moved, and that the compressed air which I prefer to use for a forcing medium is simultaneously provided each of the air-inlets  $E$ .

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a track-sanding apparatus, the combination with a valve-chamber provided with an elongated sand-outlet, a swinging valve in said chamber covering the inner end of the outlet and partially dividing the chamber into two compartments, an extension from one side of said valve-chamber into which the valve is moved to uncover the escape-outlet, a sand-inlet to said chamber, an air-inlet at the rear side of said valve, and an escape-pipe with which said elongated outlet connects.

2. In a track-sanding apparatus, the combination with a sand-box having a valve-chamber the walls of which are formed integral with said sand-box and said valve-chamber being provided with an elongated sand-outlet, a swinging valve in said chamber covering the inner end of the outlet and

partially dividing the chamber into two compartments, an extension from one side of said valve-chamber into which the valve is moved to uncover the escape-outlet, a sand-inlet to said chamber, an air-inlet at the rear of said valve, and an escape-pipe with which said elongated outlet connects.

3. In a track-sanding apparatus, the combination with a sand-box having a sand-passage in its bottom and having also a valve-chamber below said passage and into which chamber said sand-passage extends, a valve in said chamber, a rock-shaft or pivot on which said valve is mounted and which passes through the bottom of said sand-box and valve-chamber, and means for operating said shaft to move the valve.

4. In a track-sanding apparatus, the combination with a sand-box having a sand-passage, of a valve-chamber into which said sand-passage opens, a rock-shaft or spindle  $d$  passing through said valve-chamber, a valve made in two parts  $f, f'$  and clamped to said spindle by screw-bolts or other suitable means so as to be readily removable from said spindle and from the valve-chamber.

5. In a track-sanding apparatus, the combination with a sand-box having a sand-passage, of a valve-chamber, a spindle or rock-shaft mounted therein and having a squared portion, a valve secured to the squared portion of said spindle and movable therewith, said valve being detachably secured to said spindle so as to be removable from said valve-chamber without disturbing the said spindle in its bearings.

6. In a track-sanding apparatus, a sand-passage from the sand-box, a valve-chamber through which said sand-passage extends, a valve contained in said chamber and movable therein and a sand-shield carried by said valve to be movable with it.

7. In a track-sanding apparatus, a sand-box having a sand-passage, a valve-chamber into which said passage opens, said valve-chamber having an elongated outlet and lateral extensions on either side of said outlet, and a sand-valve  $D$ , and shield  $d^3$  operating substantially as and for the purposes set forth.

8. In a track-sanding apparatus, a sand-box having a sand-passage, a valve-chamber into which said passage opens, said valve-chamber having an elongated outlet and lateral extensions on either side of said outlet, the sand-valve  $D$ , and shield  $d^3$  and the removable cover  $G$  closing the front of said valve-chamber.

CHARLES W. SIERBURNE.

Witnesses:

F. F. RAYMOND, 2d,  
J. M. DOLAN.