

No. 745,394.

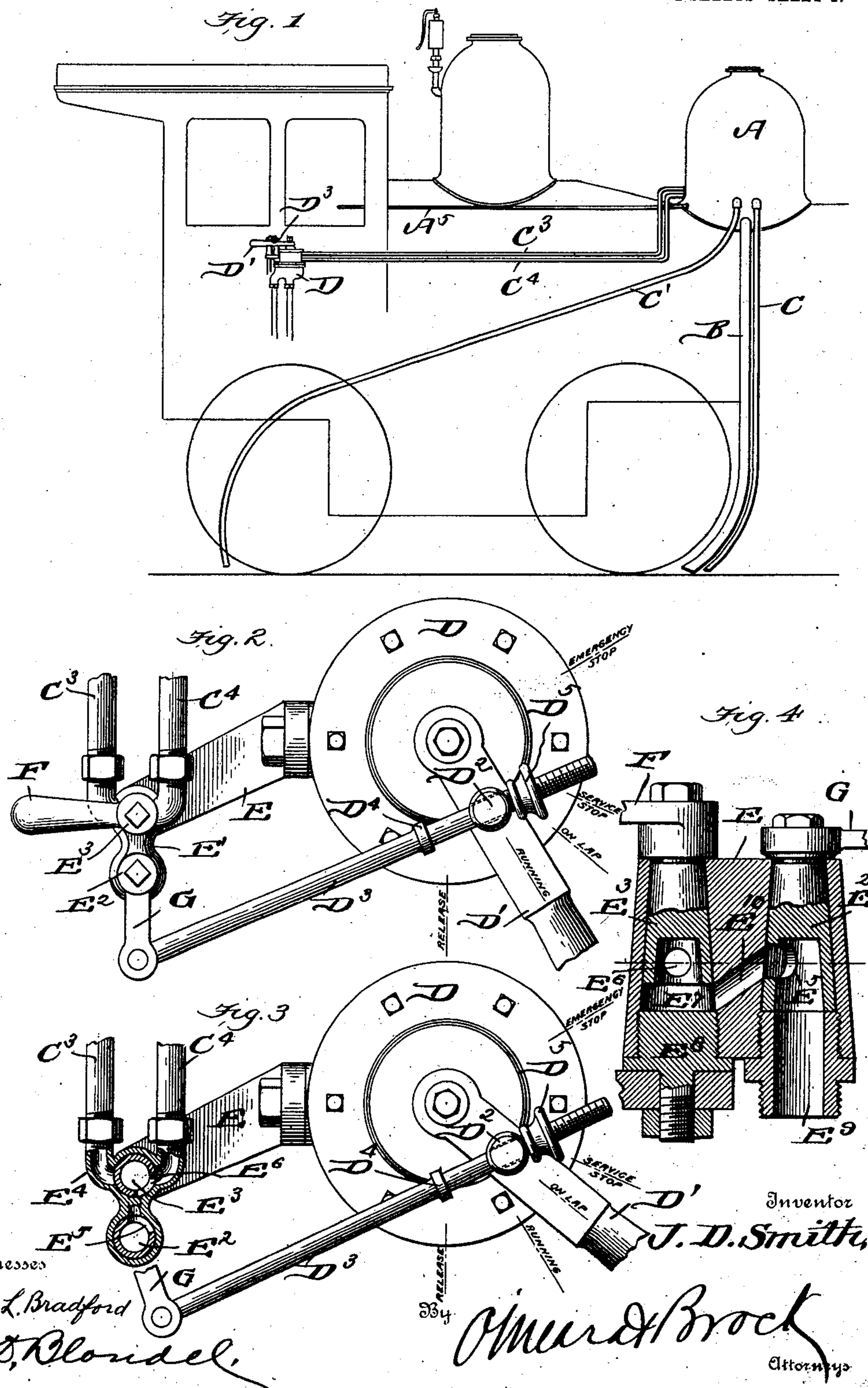
PATENTED DEC. 1, 1903.

J. D. SMITH.
SAND BLOWER AND BRAKE ATTACHMENT.

APPLICATION FILED JULY 20, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5

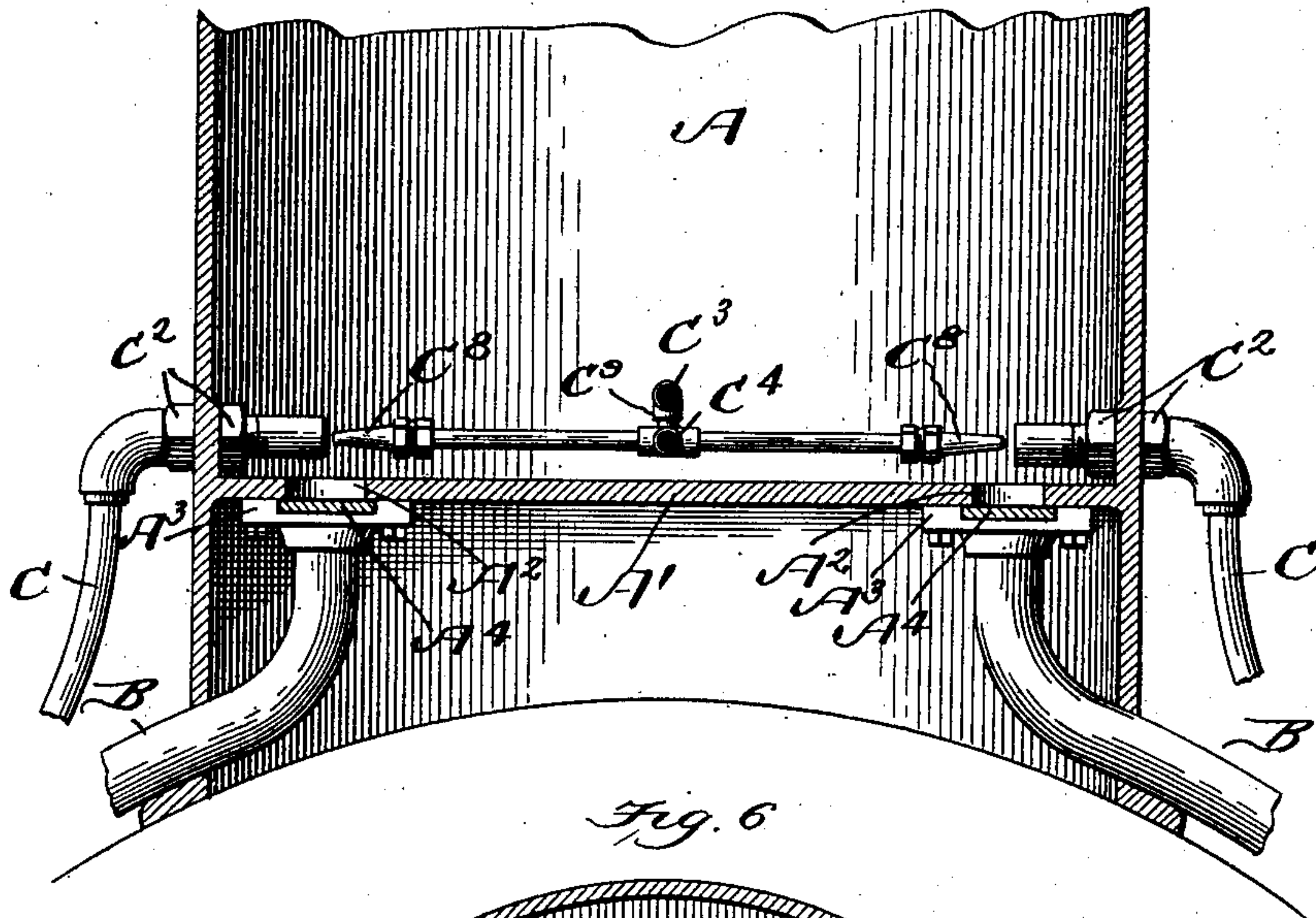
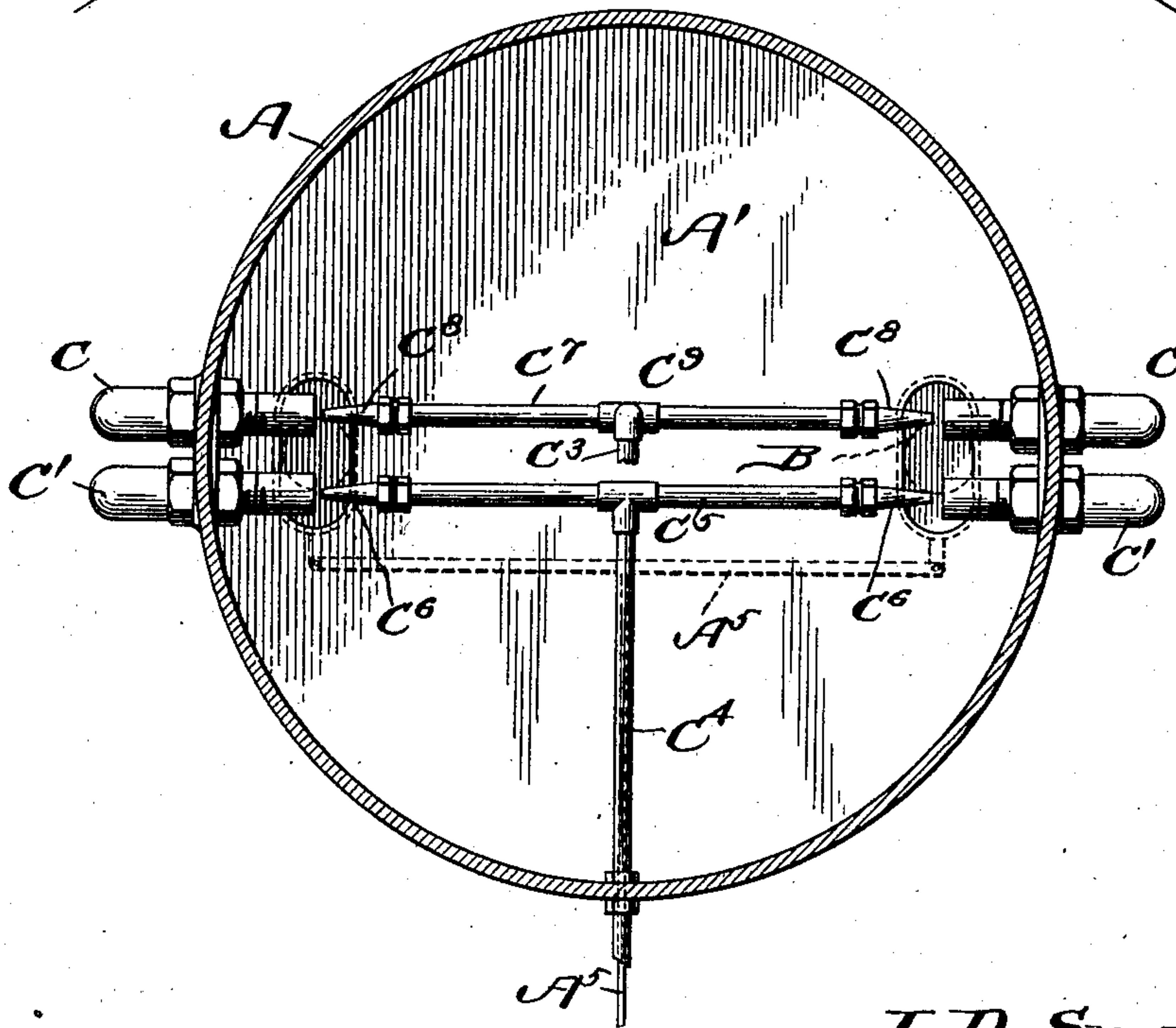


Fig. 6



Witnesses

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SAND-BLOWER AND BRAKE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 745,394, dated December 1, 1903.

Application filed July 20, 1903. Serial No. 166,383. (No model.)

To all whom it may concern:

Be it known that I, JAMES DOUGLASS SMITH, a citizen of the United States, residing at McDonoghville, in the parish of Jefferson and State of Louisiana, have invented a new and useful Sand-Blower and Brake Attachment, of which the following is a specification.

My invention is an improvement in sand-blowers, the object being to give the engineer full control of the sand-feeding apparatus in connection with the air-brake apparatus, whereby the regulation of both is accomplished through common means.

A further object is to provide special means whereby the engineer can further control the distribution of sand to the track independent of the air-brake mechanism.

I am aware of the fact that sand-blowers have been heretofore used and that the valves controlling the air-blast to the sand-pipes have been heretofore linked to the air-brake lever.

My invention consists in the novel features of construction and combination of parts hereinafter shown and described, particularly pointed out in the claims, and shown in the accompanying drawings, in which—

Figure 1 is a diagrammatic elevation showing the arrangement of the pipes. Fig. 2 is a plan view of the valves and valve-levers, brakes being off and valves controlling air-blast to sand-dome being closed. Fig. 3 is a similar view, partly in section, and the valves being opened to admit air to pipes leading to the sand-dome. Fig. 4 is a detail view of the valves shown partly in vertical elevation and partly in section. Fig. 5 is an elevation showing the interior of the sand-dome, the dome being in section and the upper part broken away. Fig. 6 is a section on the line 6 6 of Fig. 5.

In the drawings, A represents a sand-dome of the usual construction, having a horizontal false bottom A', in which are formed, adjacent opposite sides of the box, apertures A². Below the apertures are arranged guide-brackets A³, in which work slides A⁴, and to each slide is attached ends of the T-lever A⁵, extending to the engine-cab. Secured to the under side of each bracket and leading downward through the wall of the sand-dome to a point adjacent the rails are pipes B, the said

pipes being of larger diameter than the usual sand-pipe and their upper ends registering with the apertures A² when the slides A⁴ are moved horizontally to uncover said apertures.

Sand-pipes C C' lead in pairs from each side of the dome to the rail, the pipes on one side of the dome leading to one rail and those on the opposite side to the other rail. The pipes C open downwardly in advance of the forward drive-wheels and the pipe C' in the rear of same. At their upper ends these pipes extend through the sand-dome walls, each pair terminating above one of the apertures A². The pipes C and C' are threaded on the portion passing through the dome, and on said threaded portion work jam-nuts C², two nuts being arranged on each pipe, one on the inside of the dome and one on the outside. By means of these the pipes are rendered adjustable with respect to the distance they extend into the interior of the dome.

Air-pipes C³ and C⁴ extend into the dome in vertical alinement to points adjacent the center of same. At a point in alinement with the inner ends of the pipes C' the pipe C⁴ is fitted with a T-coupling, from which extend pipes C⁵, the said pipes C⁵ terminating in tapering nozzles C⁶, in alinement with the inner ends of the pipes C' and discharging air-jets into same.

Pipes C⁷, arranged parallel to the pipes C⁵, discharge through nozzles C⁸ into the pipes C, the pipes C⁷ being connected to the pipe C³ by a suitable elbow C⁹. It will be understood that a space intervenes between the ends of the nozzles mentioned and the pipes C C' and that the adjustability of the latter pipes permits increase or decrease of this space.

The usual air-brake valve D is arranged in the engine-cab and is operated by the valve-handle D'. To this air-brake-valve casing is bolted a bracket E, carrying a valve-casting E', which contains the valves E² and E³. The valve E³ controls passage of air into a U-shaped pipe E⁴, to the ends of which the pipes C³ and C⁴ are connected. The valves E² and E³ have the form of downwardly-open cones, each being perforated on one side, as at E⁵ and E⁶, each valve rotating in conical seats formed in the casting. Below the valve E³ is a chamber E⁷, closed by a suitable threaded plug E⁸.

The valve E^2 opens downwardly into a pipe E^9 , threaded into the casting below the valve, the said pipe being connected to any suitable pipe leading from one of the air-reservoirs.

5 Between the two valves the casting E' is formed with an inclined bore E^{10} , the upper end of said bore being adapted to register with the opening E^5 in the valve E^2 and its lower end opening into the chamber E^7 . A
10 handle F is connected to the upper end of the valve E^3 , and a handle G to the upper end of the valve E^2 .

A lug D^2 , transversely perforated, is formed on the valve-handle D' , and sliding in the perforation of this lug is a rod D^3 . On one side
15 of the lug the rod D^3 has an annular shoulder D^4 formed on it. On the other side the rod is threaded, and a thumb-nut D^5 works thereon. The non-threaded end of the rod D^3 is pivoted
20 to the valve-handle G . It is obvious that the valve-handle D' will slide on the handle D^3 between the shoulder D^4 and nut D^5 , but that when the valve-handle D' is turned, so that the lug D^2 contacts with either the nut or the
25 shoulder, further movement of the handle D' will rotate the valve-handle G .

The operation of my device is as follows: Air from the main reservoir (not shown) passes through the pipe E^9 and by its pressure holds
30 the valve E^2 firmly in its seat. By turning the handle F the valve E^3 can be set so as to open a passage between the chamber E^7 and either C^3 or C^4 , so that sand will be thrown upon either side of the driving-wheels, the
35 pipe through which sand is distributed depending on the direction in which the engine is running. When the handle D' is on "running" or "release" position, the valve E^2 is closed. When the handle D' reaches
40 "on lap," the plug D^2 will contact with the nut D^5 and through medium of the rod D^3 will rotate the handle G and valve E^2 , and the sand will commence to run, and when the handle D' reaches "service stop" the air passes
45 through the opening E^5 , bore E^{10} , chamber E^7 , opening E^6 , and pipe C^3 or C^4 , throwing sand into either pipe C or C' . On moving the handle D' to the "emergency stop" the valve E^2 will be opened to its full extent and sand will
50 be delivered in increased amount to the track. Should gravel or the like accumulate between the nozzles and the inner ends of the pipes C or C' , the lever A^5 is drawn, drawing out the slides, and the accumulated gravel will pass
55 down through the pipes B to the track. The distance through which the handle D' can be moved without shutting off the valve E^2 can be regulated by adjusting the nut D^5 on the rod D^3 .

Having thus fully described my invention, 65 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a sand-dome having a false bottom, sand-pipes leading horizontally from the dome adjacent said bottom, 65 the bottom being perforated below the inner ends of said pipes, a slide covering each perforation, discharge-pipes secured below the false bottom and closed at their upper ends by the slides, and means operable from an engine-cab for drawing said slides so as to uncover the perforations and upper ends of the discharge-pipes. 70

2. The combination with a sand-dome, sand-pipes leading horizontally from said dome, air- 75 pipes leading into the dome and having nozzles opening in alignment with the inner ends of the sand-pipes, means for adjusting the distance between said nozzles and sand-pipes and means for discharging through the bot- 80 tom of the dome gravel or rocks accumulating between the nozzles and sand-pipes.

3. A device of the kind described comprising a sand-dome sand-pipes leading therefrom, an air-brake valve, air-pipes adapted to 85 discharge air into the inner ends of the sand-pipes, a valve controlling admission of air to said pipes, a handle on said valve, a handle on the brake-valve said handle having a perforated lug thereon, a rod threaded at one end 90 and sliding in the perforation of the lug on the air-brake-valve handle, the opposite end of said rod being pivoted on the other valve-handle, a shoulder on the rod between the two valve-handles, and an adjustable thumb-nut 95 on the threaded portion of the rod.

4. A device of the kind described comprising a sand-dome, sand-distributing pipes adjustably extending into said dome, air-pipes 100 leading to said dome and adapted to force sand into the sand-pipes, the outer end of said air-pipes being connected by an elbow, a valve in said elbow, an air-brake valve having a handle, a bracket secured to said valve and supporting the elbow, a casting integral 105 with the said elbow and inclosing the valve in said elbow, a chamber being formed below the valve, a downwardly-open conical valve in said casting, an air-supply pipe opening into the lower part of said valve, said casting 110 having a bore leading from said valve to the chamber below the elbow-valve, a handle on the downwardly-open valve, and a rod connecting the handles of the two valves.

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Witnesses:

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