

(No Model.)

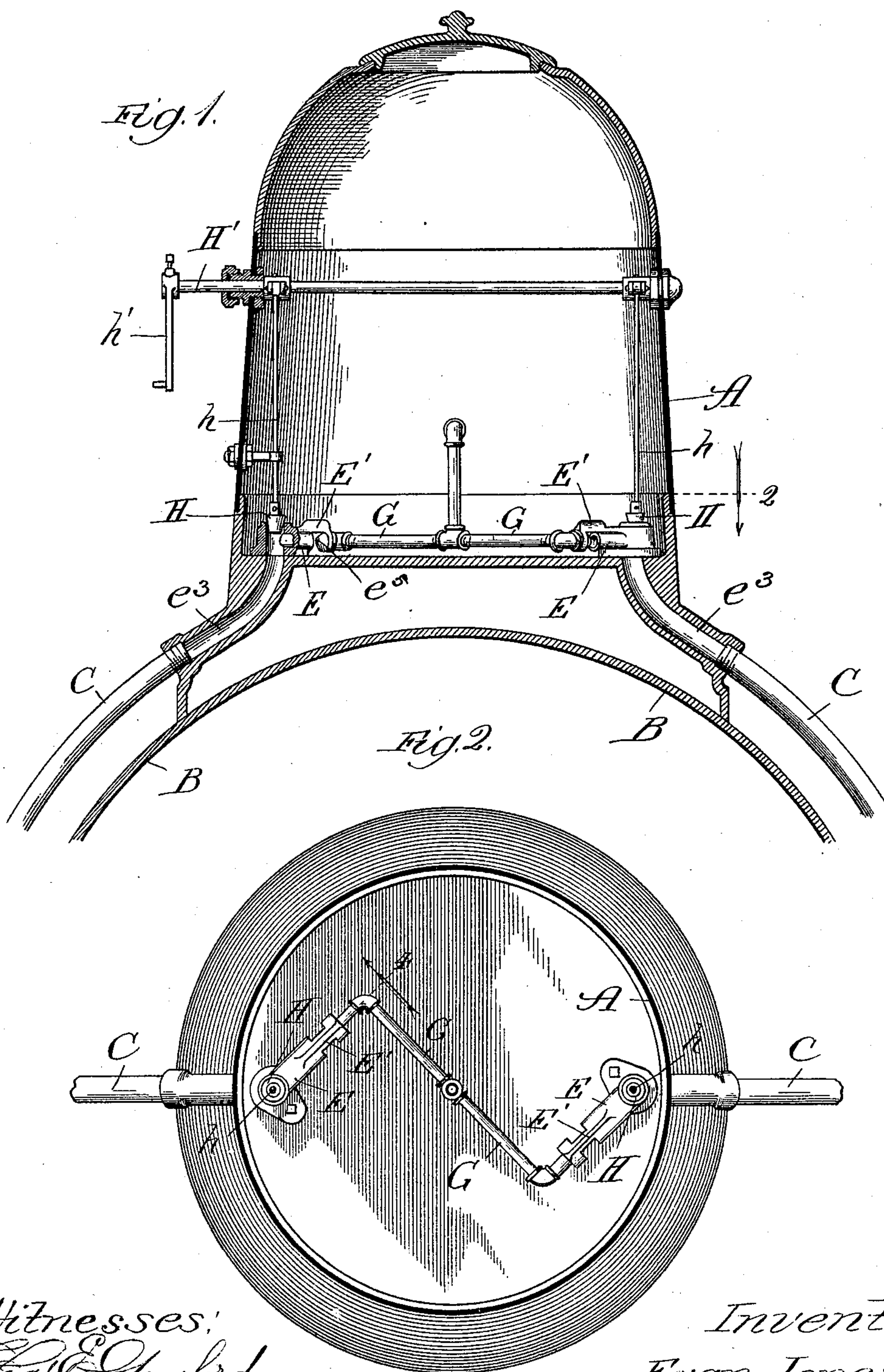
2 Sheets—Sheet 1.

E. JONES.

SANDING ATTACHMENT FOR LOCOMOTIVES.

No. 587,504.

Patented Aug. 3, 1897.



Witnesses:
E. S. Gaylord,
Lute J. Allen.

Inventor:
Evan Jones,
By Banning & Banning & Sheridan,
Attys.

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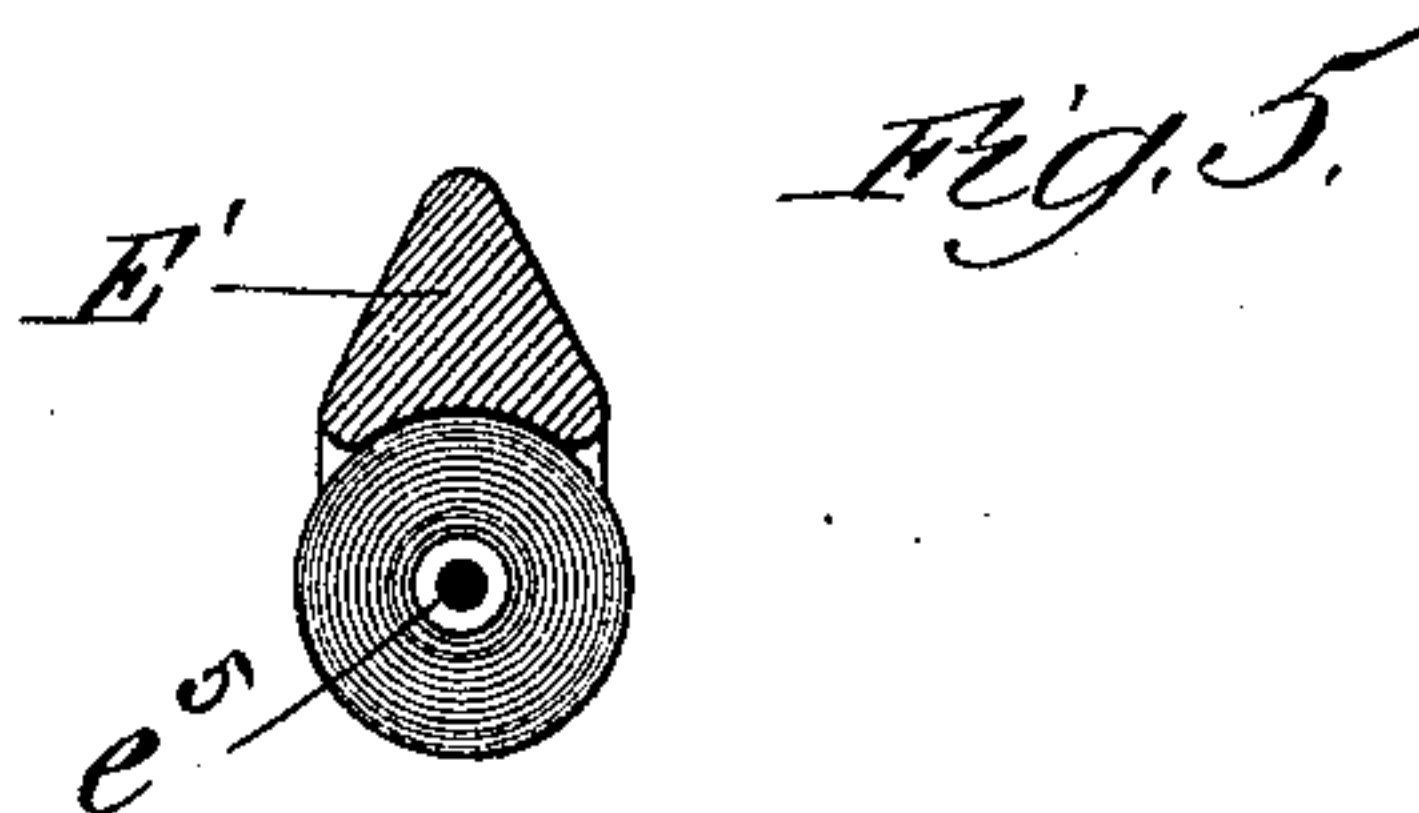
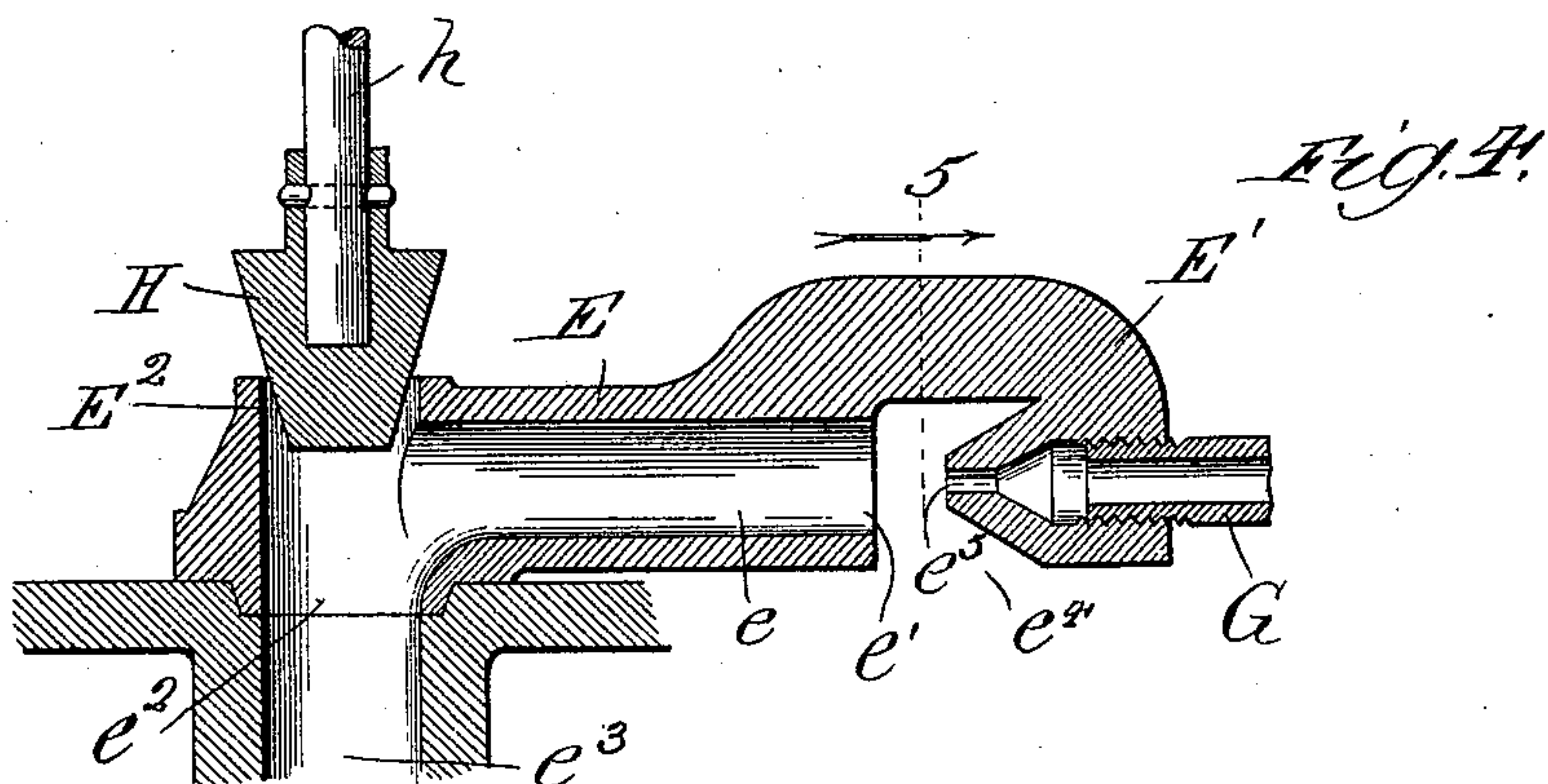
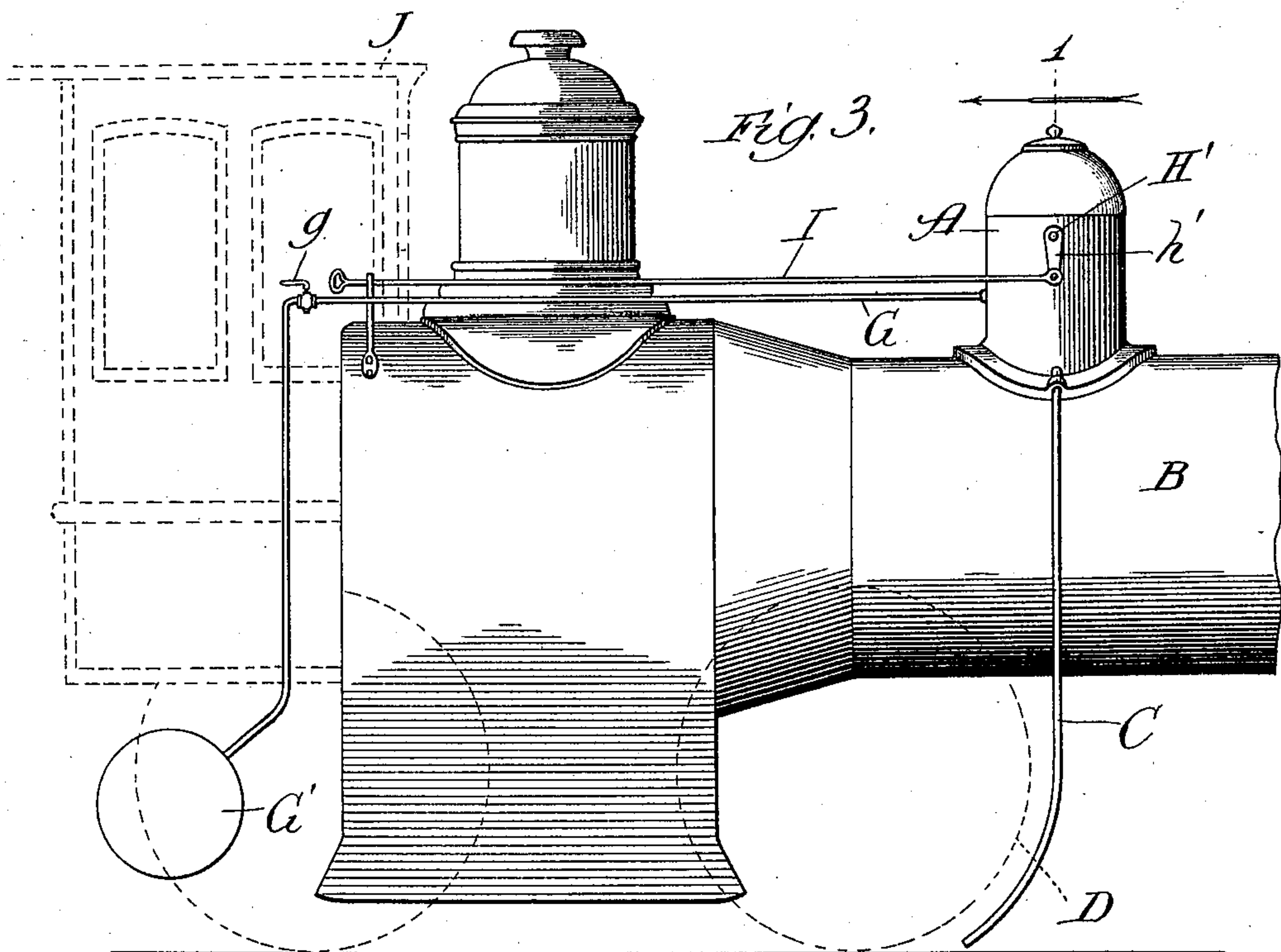
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Witnesses:
Capt. Gaylord,
Lieut. J. Allen.

Inventor:
Evan Jones,
By Banning & Banning & Sheridan,
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UNITED STATES PATENT OFFICE.

EVAN JONES, OF CRESTON, IOWA.

SANDING ATTACHMENT FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 587,504, dated August 3, 1897.

Application filed April 17, 1896. Serial No. 587,945. (No model.)

To all whom it may concern:

Be it known that I, EVAN JONES, a citizen of the United States, residing at Creston, in the county of Union and State of Iowa, have invented certain new and useful Improvements in Sanding Attachments for Locomotives, of which the following is a specification.

The object of my invention is to provide a simple, economical, and efficient mechanism for forcing sand out of the sand-box to a point under or adjacent to the driving-wheels of a locomotive by the use of pneumatic pressure.

A further object of my invention is to provide an auxiliary mechanism whereby the sand may be fed out of the sand-box to a point under the driving-wheels by gravity only; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a transverse sectional elevation taken through the sand-box of a locomotive; Fig. 2, a horizontal sectional view taken on the line 2 of Fig. 1; Fig. 3, a side elevation of a portion of a locomotive with my improvements attached thereto in position ready for use; Fig. 4, an enlarged sectional view of the compound valve, taken on line 4 of Fig. 2; and Fig. 5, a transverse section taken on the line 5 of Fig. 4.

In constructing my improvements and fitting them to a locomotive I provide a sand-box A, of the usual type and of any desired size and shape, and attach it to the body of a locomotive-boiler B by riveting it thereto or in any of the ordinary and well-known methods. Adjacent to the lower side portions of the sand-box I provide delivery-pipes C, that lead therefrom to a point directly under the driving wheel or wheels D, so that as sand is delivered from the box it strikes the rail or rails adjacent to the under portion of the driving-wheels for the purpose of enabling the same to obtain better traction on the surface of the track.

In order to feed the sand, as desired, in the box to the delivery-pipes, I provide what I term a "compound valve" E, arranged in the bottom of the box and horizontally so as to provide a substantially horizontal passage e through the same and which opens at a point adjacent to the bottom of the sand-box, as at

e' . The other end is provided with an opening e^2 , which connects directly with the delivery-channel e^3 , with which the delivery-pipes are connected. The compound valve is provided with a horizontally-projecting portion E' , that practically covers the upper portion of the inlet-opening e' , so as to prevent the sand from directly entering such opening, or, in other words, keep the weight of the larger portion of the sand off of such opening, but in such a manner as to permit the sand to enter a slot e^4 between the projection and the main body of the valve. This prevents the sand from being jarred or shaken out of the box while the train is in motion. Arranged at the front part of this projecting portion E' and substantially in line with the passage e is an injecting-perforation e^5 , in which is secured a pipe G , that has its opposite end connected with a source of fluid-pressure—compressed air. This pipe is provided, as is shown to the left of Fig. 3, with a valve g , which may be operated to open or close connection with the air-reservoir G' for the purpose of shutting off or admitting the desired quantity of fluid-pressure, the action resulting in injecting the sand that may be in the slot e^4 into the passage e and forcing it down through the delivery-channel to a point underneath the driving-wheel.

The advantages of the structure are that the sand will not spill or run down the channel without the use of the fluid-pressure, and the passages and the arrangement of the injector are such that the valve may be outside of the sand-box and the flow of sand be regulated to any degree required.

It is often desirable, especially in climbing or descending grades, to save all of the fluid-pressure for the purpose of the brake mechanism, and in such conditions it is desirable to have mechanism, operated, preferably, by hand, that will allow or permit of the sand being fed to the track by the force of gravity only. In order to accomplish this result, I provide the compound valve with a second vertical passage E^2 , directly in line with the delivery-channel e^3 , and in this opening I fit a vertically-movable valve H , having its stem portion l connected with a rock-shaft H' , this rock-shaft in turn being provided with a bell-crank lever h' , having an actuating-rod I ,

with its free end extending into the cab J of the locomotive, so that it may readily be reached by the engineer or fireman for the purpose of operating the valve H and admitting sand into the delivery-pipe or preventing it from entering such pipe.

The advantages of the entire structure are that the engineer at all times is furnished with a mechanism that permits him to control the outflow of sand without the use of pneumatic pressure, and at times, when desired, pneumatic pressure can be used for forcing out desired quantities of sand for the usual purpose.

I claim—

In mechanisms of the class described, the combination of a sand-box, a delivery-pipe leading therefrom to a point adjacent to the driving-wheel, a valve-casing provided with

a substantially right-angular passage the vertical portion connecting with the delivery-pipe and a horizontal portion opening adjacent to the bottom of the sand-box, a horizontal projecting portion on the valve-casing covering the upper portion of the inlet-opening of the horizontal passage and provided with an injecting-perforation substantially in line with the horizontal passage, a manually-operating valve closing communication between the vertical opening and the sand-box, and a pipe connecting the injecting-passage of the valve with a source of fluid-pressure—compressed air—substantially as described.

EVAN JONES.

Witnesses:

J. J. KNOWLES,
S. R. COTTON.