

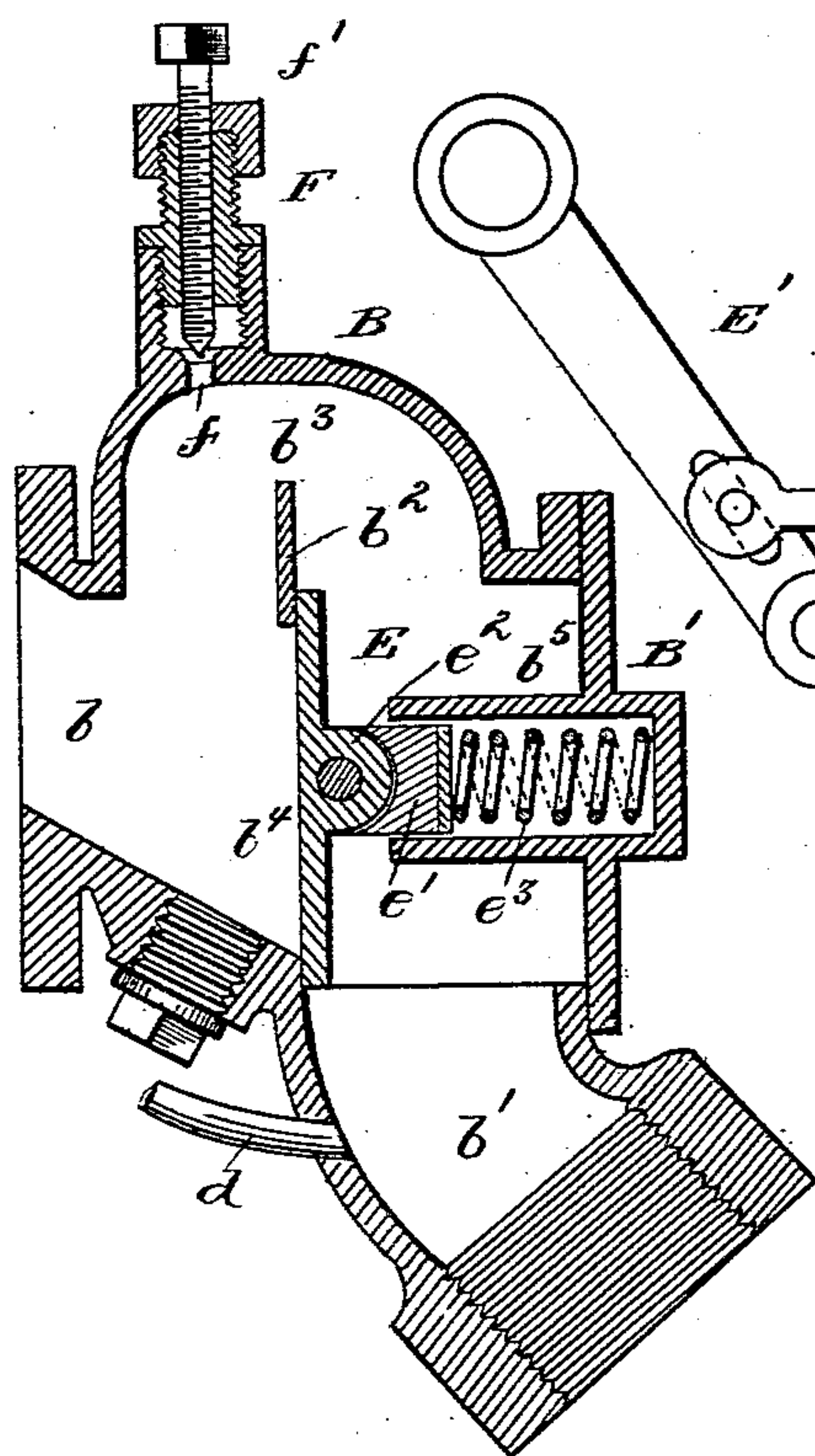
(No Model.)

H. TIRMANN.
TRACK SANDING DEVICE FOR LOCOMOTIVES.

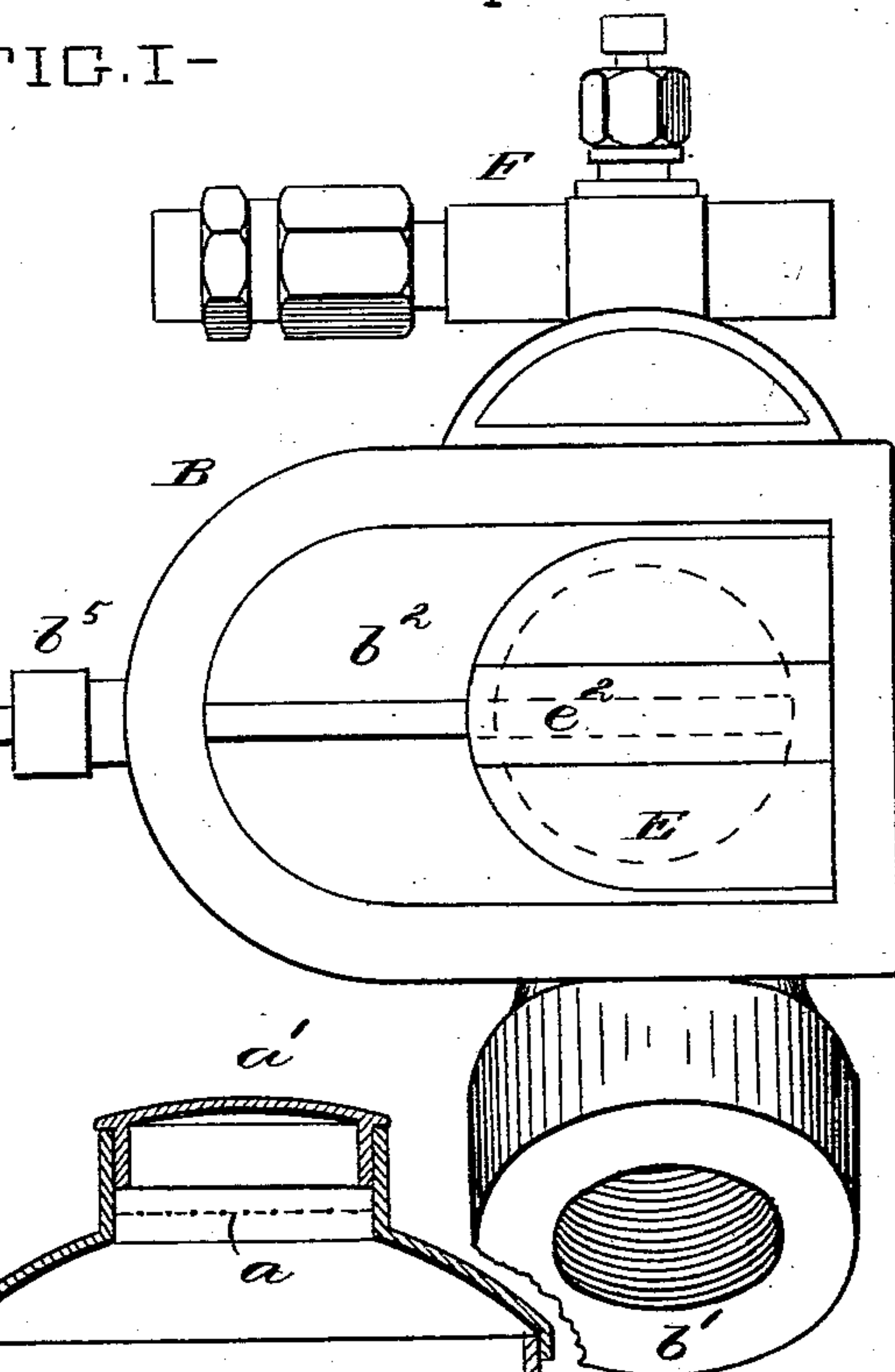
No. 557,724.

Patented Apr. 7, 1896.

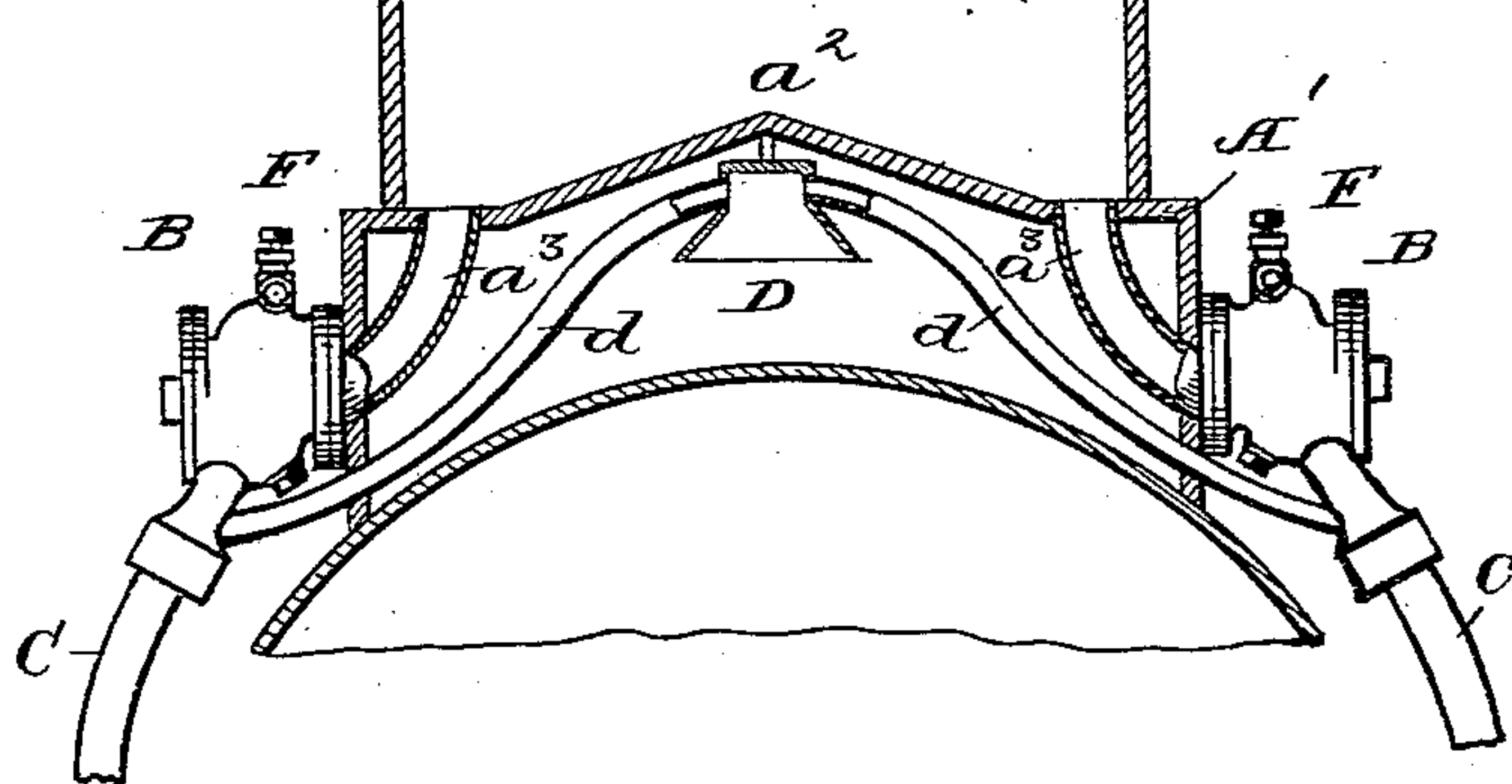
- FIG. II -



- FIG. I -



- FIG. III -



WITNESSES:

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INVENTOR:

Hugo Tirmann
By Hall & Fay ATTORNEYS.

UNITED STATES PATENT OFFICE.

HUGO TIRMANN, OF CLEVELAND, OHIO, ASSIGNOR TO BENJAMIN PATTERSON, OF SAME PLACE.

TRACK-SANDING DEVICE FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 557,724, dated April 7, 1896.

Application filed December 7, 1895. Serial No. 571,352. (No model.)

To all whom it may concern:

Be it known that I, HUGO TIRMANN, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Track-Sanding Devices for Locomotives, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of my invention may be used.

In said annexed drawings, Figure I represents a transverse section of a sand-box for a locomotive embodying my invention; Fig. II, a view of the sand-valve mechanism with the front cover and spring-actuated follower removed, and Fig. III an axial section of the sanding device.

The sand-box A is provided with a screen *a* at its feed-opening, which opening is closed by a cap *a'*. Said screen serves to separate all pebbles, lumps, or other large objects which would be liable to obstruct or interfere with the work of the valves. The bottom *a*² of the sand-box has an upward bulge, whereby the sand is directed toward two sand-outlet pipes *a*³, one at each side of the box. Two valve-casings B are secured, one at each side of the base A' of the sand-box, and said valve-casings are each formed with an inlet *b*, which connects with the outlet-pipe of the sand-box, and an outlet *b'*, which has a sand-pipe C connected to it, by means of which pipe the sand is conveyed from the valve-casing to the track. A funnel-shaped hot-air collector D is secured beneath the apex of the upwardly-bulging bottom of the sand-box within the hot-air chamber formed between the top of the boiler and the bottom of the sand-box, in the base of the latter, and two pipes *d* extend from said hot-air collector to the outlets of the valve-casings, so as to supply hot air to the sand-pipes and thereby prevent their being clogged during cold weather by snow,

frozen sand, or other frost obstructions. The valve-casing has a diaphragm *b*², which forms a normally open passage *b*³ at the upper part of the valve-casing, and a lower passage *b*⁴, which is closed by a sliding valve E, which has a seat against said diaphragm. The valve is constructed to slide in the casing, and has a rod *e*, which projects through a stuffing-box *b*⁵ in the side of the casing. A lever E', to which a cord or rod extending from the locomotive-cab may be secured, is pivotally connected to the valve-rod, so that the valve may be slid over the lower passage or away from it. A follower *e'* bears against a rib *e*² upon the back of the slide-valve, and a spring *e*³, incased in a box *b*⁵, formed upon the inner face of the cover B' of the valve-casing, bears against the follower, by which means the valve is held against its seat with a yielding pressure. A pipe-coupling F is provided upon the upper side of the valve-casing to the rear of the diaphragm, and said pipe-coupling has a jet-opening *f* into the upper portion of the interior of the valve-casing, which opening is controlled by means of a valve *f'*.

The pipe-coupling derives a supply of air under pressure from suitable pipe connection to the air-pump or air-reservoir of the locomotive, and such pipe connection is usually provided with controlling-valve mechanism within convenient reach of the engineer within his cab. As this pipe connection and valve mechanism form no part of the present invention, it is not necessary to further describe or to illustrate the same in this connection.

When sand is to be applied to the rails in normal quantities, the air-blast is started, and said blast will cause the sand to eddy upward and to fly through the upper opening in the diaphragm, whence it will drop through the valve-casing and sand-pipe to the rail. When a large quantity of sand is required, the valve is drawn open, and a direct passage for the sand, through the valve-casing, is provided.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be

made as regards the mechanism thus disclosed, provided the principles of construction set forth respectively in the following claims are employed.

5 I therefore particularly point out and distinctly claim as my invention—

1. In a track-sanding device for locomotives, the combination of a sand-box, sand-pipes, a hot-air chamber between the box and
10 boiler-top, a funnel-shaped hot-air collector in said chamber, and pipes extending from said collector into the sand-pipes, substantially as set forth.

2. In a track-sanding device for locomotives, the combination of a casing having a
15 sand-inlet and a sand-outlet, a diaphragm in said casing and between the inlet and outlet and formed with an upper and a lower passage, an air-jet opening in the upper portion
20 of the casing and at the inlet side of the diaphragm, and a valve movable over the lower

passage of the diaphragm, substantially as set forth.

3. In a track-sanding device for locomotives, the combination of a casing having a
25 sand-inlet and a sand-outlet, a diaphragm having an upper and a lower passage and arranged between the inlet and the outlet, an air-jet opening in the upper portion of the casing and at the inlet side of the diaphragm,
30 a valve sliding over the lower opening of the diaphragm and a spring-pressed follower bearing against the back of said valve, substantially as set forth.

In testimony that I claim the foregoing to
35 be my invention I have hereunto set my hand this 20th day of November, A. D. 1895.

HUGO TIRMANN.

Witnesses:

WM. SECHER,
J. C. TURNER.