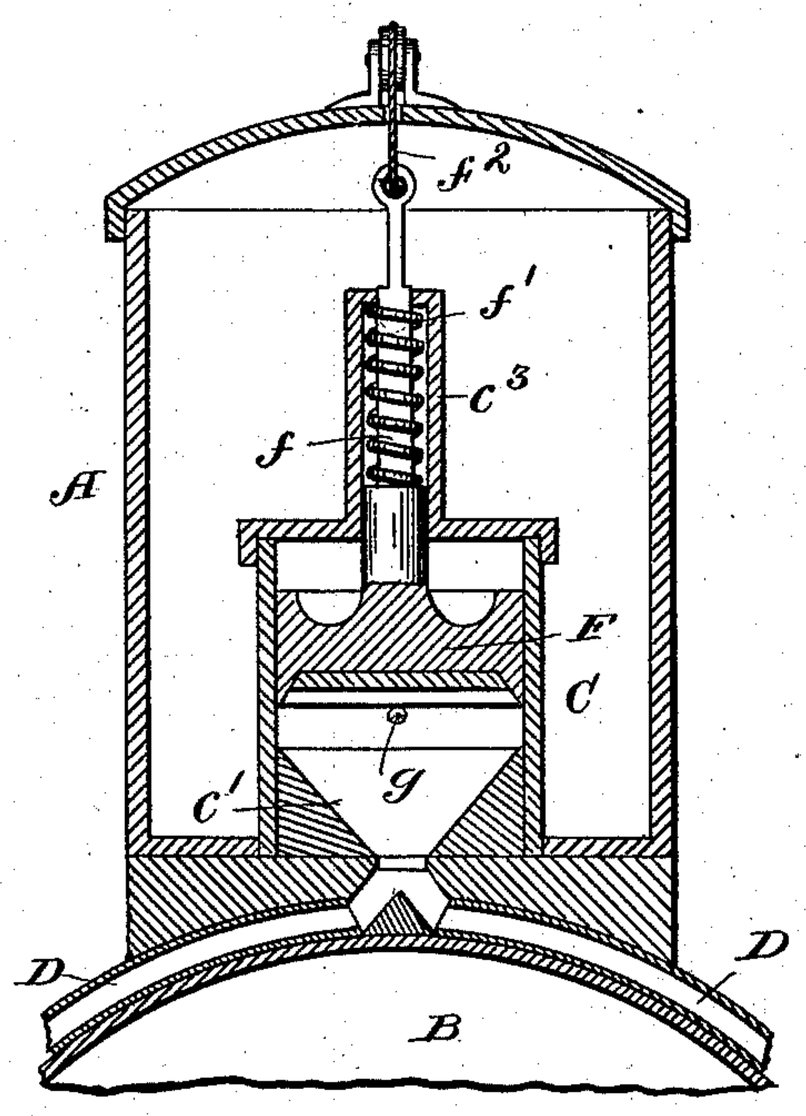
(No Model.)

H. TIRMANN.

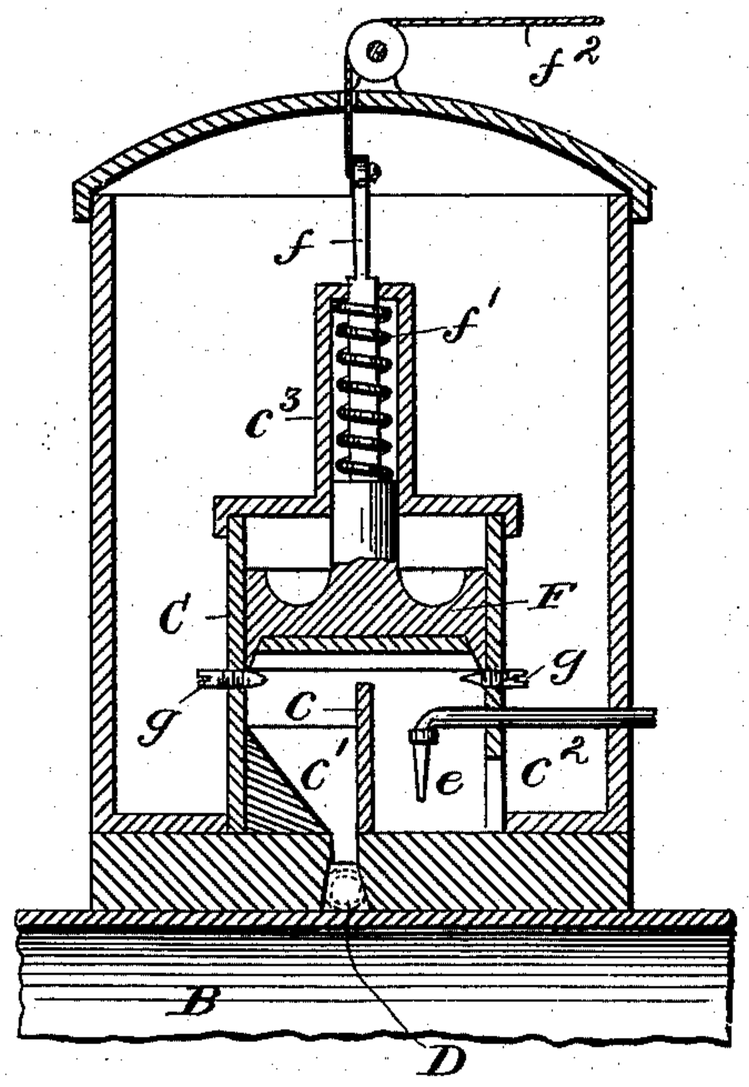
TRACK SANDING DEVICE FOR LOCOMOTIVES.

No. 559,006. Patented Apr. 28, 1896.

-FIG. I-



-FIG. II-



WITNESSES:

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INVENTOR:

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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. 559,006, dated April 28, 1896.

Application filed December 7, 1895. Serial No. 571,348. (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 the invention may be used.

In said annexed drawings, Figure I represents a transverse section of a portion of the boiler-shell of a locomotive and of a sand-box provided with my improvement, and Fig. II a section at right angles to said former section.

The sand-box A is secured upon the locomotive-boiler shell B in the usual or any desired manner, and an upright casing C is secured within the sand-box upon the bottom of the same. Said casing has a vertical partition *c* projecting from its bottom, and a hopper *c'* is formed at one side of said partition and has its bottom opening communicating with the sand-pipes D, which convey the sand to the track in front of the drive-wheels. An opening c^2 is formed in the side of the casing and leads into the first chamber of the casing, so that said chamber may have sand enter it from the sand-box through said opening. An air-pipe E enters the first chamber of the casing above the opening, passing through the walls of the sand-box and the casing, and the air-pipe has a downwardly-projecting nozzle *e*. A piston F fits and slides in the casing, which is preferably cylindrical, and said piston has a stem *f*, which slides in a neck c^3 at the closed upper end of the casing. A spring *f'* upon the stem serves to depress the piston toward the upper edge of the partition, and a cord f^2, which is suitably guided to the cab of the locomotive, serves to raise the piston. The piston is stopped in its downward movement by means of plugs *g*, screwed through the sides of the casing in such manner that the normally-existing space above the partition, between the upper edge of the latter and the piston, may be gaged by the stop-plugs.

When it is desired to apply sand to the track, air-blast is admitted through the air-pipe, and such downward blast will strike the bottom of the chamber within the casing and be deflected upward, thereby creating an eddy in the sand within the chamber, causing it to fly upward and over the partition into the hopper, whence it will pass down on the track through the sand-pipes. The small space between the piston and the upper edge of the partition will admit of a limited quantity of sand flying into the hopper, such as is sufficient when applying the brakes and stopping a train under ordinary circumstances. When, however, a greater quantity of sand is required, the piston may be more or less raised in accordance with the quantity of sand required.

As the air-blast exerts its influence in all directions within the chamber of the casing, it will loosen any sand which may have a tendency to clog, and sand may freely pass from the sand-box into the chamber through the opening in the side of the latter. The partition in the chamber and the piston will form an adjustable opening between the blast-chamber and the receiving end of the sand-pipes, through which the sand may be forced by the eddy created by the blast. The sand will pass down through the sand-pipes, actuated principally by its gravity, in contradistinction to sanding devices in which a jet of sand is forced through the sand-pipes by means of a direct air-blast. Where such direct air-blast is used, the nozzle of the air-pipe is liable to become clogged with sand, as the sand will be forced into the nozzle by gravity.

In my device sand is not liable to be forced into the nozzle, and will fall out of the nozzle by gravity, if any sand accidentally gets into the same, as soon as the slightest blast is admitted through the pipe.

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 dis-

closed, provided the principles of construction set forth, respectively, in the following claims are employed.

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

1. In a track-sanding device for locomotives, the combination with a sand-box and a sand-pipe, of a blast-chamber communicating with the sand-box to have sand pass into it from said box and having an opening at its upper portion communicating with the receiving end of the sand-pipe, an adjustable piston for adjusting the area of said opening, and an air-pipe entering said blast-chamber and having its nozzle pointing toward the bottom of the chamber, substantially as set forth.

2. In a track-sanding device for locomotives, the combination of a sand-box, an interior casing inclosed within said sand-box and communicating therewith and with the sand-pipes, a partition within said interior casing, an adjustable piston, and means, substantially as described, for expelling the sand over the top of said partition, substantially as set forth.

3. In a track-sanding device for locomotives, the combination of a sand-box, a casing within the same formed with two chambers in its lower part one of which communicates with the sand-box and the other with the sand-pipe and which chambers are separated by means of a partition, a vertically-adjustable piston within said casing, and an air-blast pipe which enters the chamber communicating with the sand-box and has a nozzle pointing downward, substantially as set forth.

In testimony that I claim the foregoing to 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.