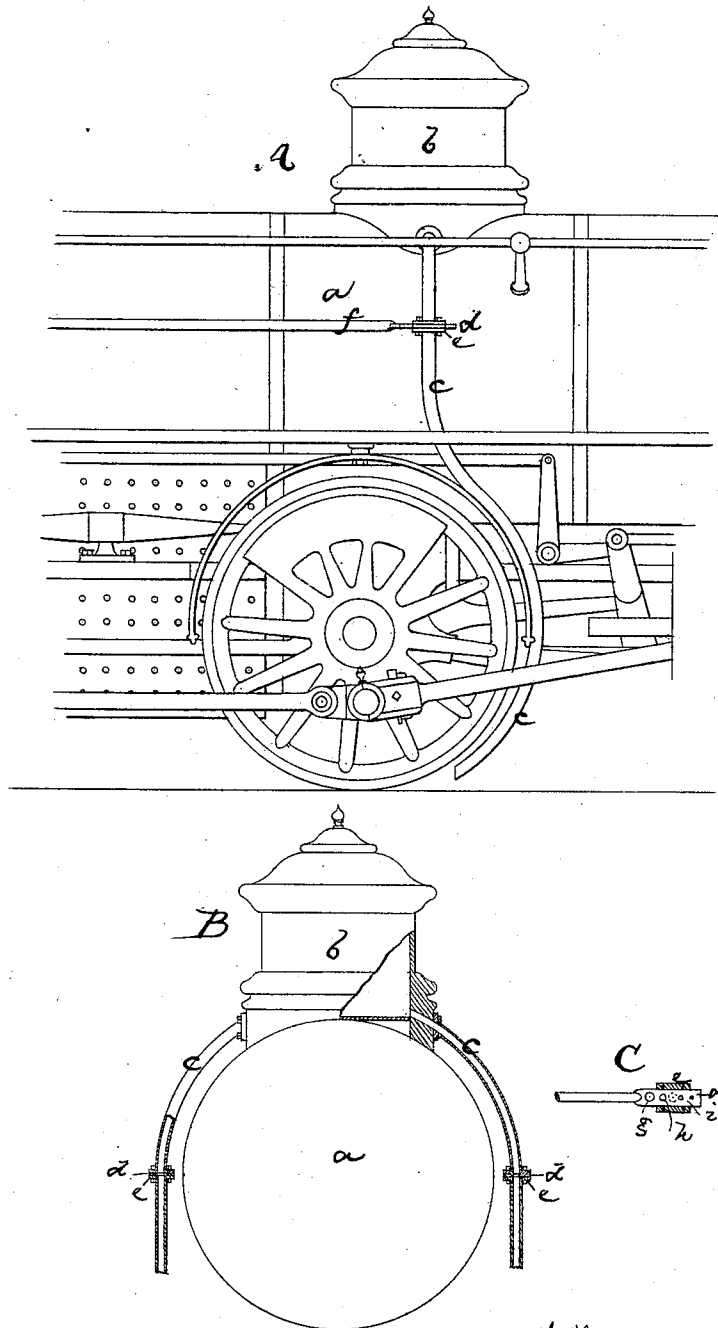


W. A. FOSTER.

Improvement in the Valves of Locomotive Sand-Boxes.

No. 128,382.

Patented June 25, 1872.



Witnesses.
M. W. Frothingham.
J. B. Hildet.

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UNITED STATES PATENT OFFICE.

WILLIAM A. FOSTER, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN VALVES OF LOCOMOTIVE SAND-BOXES.

Specification forming part of Letters Patent No. 128,382, dated June 25, 1872.

To all whom it may concern:

Be it known that I, WILLIAM A. FOSTER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented an Improved Valve Mechanism for Locomotive Sand-Boxes; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In all locomotive-engines it is customary to make provision for discharge of sand upon the tracks in front of the driving-wheels, so as to cause the wheels to bind or bite in starting with a heavy train, in ascending steep grades, and in cases where the track is smooth or slippery, a sand-containing box being placed upon the top of the locomotive, with a pipe extending from each side of the box down to the rail on the same side, the entrance to each pipe from the box being controlled by a valve having a rod or stem extending to them. By opening the valve the whole pipe is opened for discharge of sand, and there are no means of regulating or graduating the delivery of the sand, so that in almost all cases too much sand is thrown upon the track.

My invention relates to means for regulating the discharge of the sand; and consists in combining with each delivery-pipe a slide-valve, supported upon a suitable seat, and provided with a graduated series of openings, so that by sliding the valve more or less and to determined distances, the tube-passage may be either entirely closed, or may have brought into line or connection with it either of such openings, thus graduating the amount of sand thrown upon the track, according to the particular exigency requiring the use of the sand.

The drawing represents enough of a locomotive-engine to illustrate the invention.

A shows, in side elevation, the sand-box and discharge-pipe. B is a section through the sand-box and through the pipe leading

from one side thereof. C is a plan of the slide or feed-regulating valve.

a denotes the boiler; *b*, the sand-box on top thereof. Leading from the bottom of the sand-box, at each side thereof, is a discharge-pipe, *c*, said pipe being shown as leading directly from the box without restriction by any valve connected directly with the box. Thus free from obstruction the sand passes readily into the pipes, and down through each until arrested by a slide and gauge-valve, *d*, which slide is supported and moves and is guided upon a seat, *e*. The valve is attached to a rod or stem, *f*; and in the valve are three or any other suitable number of delivery-orifices, *g h i*, of varying size, so arranged that by operating the slide either orifice may be brought into connection with the pipe-passage. The largest orifice is preferably made a little smaller than the pipe, so that by locating the valve as shown, the pipe-passage over the valve will be kept supplied with sand, while the flow is regulated by the valve and valve-openings, the regularity in the discharge of the sand being thereby insured, and the discharge being increased, diminished or stopped, as occasion may require.

The sand-box may be provided with the ordinary valve, and the valve *d* used as an auxiliary valve, especially in applying my invention to sand-boxes already in use; but for new locomotives I prefer the use of the one valve *d* with its gauged orifices.

I claim—

In combination with the sand-box of a locomotive-engine, and the discharge pipe or pipes leading therefrom, the slide valve or valves, located as described, and provided with graduated orifices for regulating the discharge of sand, substantially as shown and described.

WM. A. FOSTER.

Witnesses:

W. W. BAILEY,
JAS. H. FAIRBANKS.