

(No Model.)

C. W. SHERBURNE.
TRACK SANDING APPARATUS.

No. 487,496.

Patented Dec. 6, 1892.

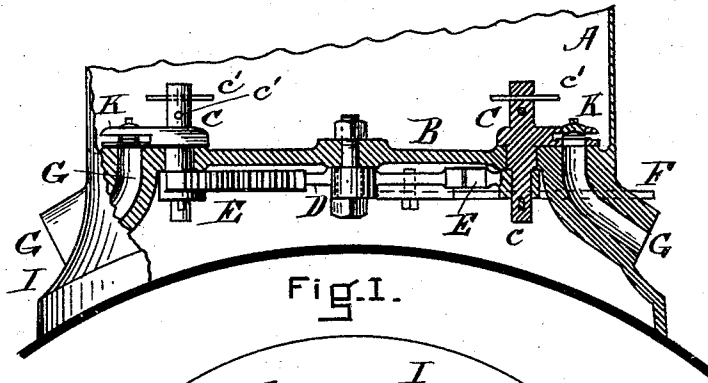


Fig. 1.

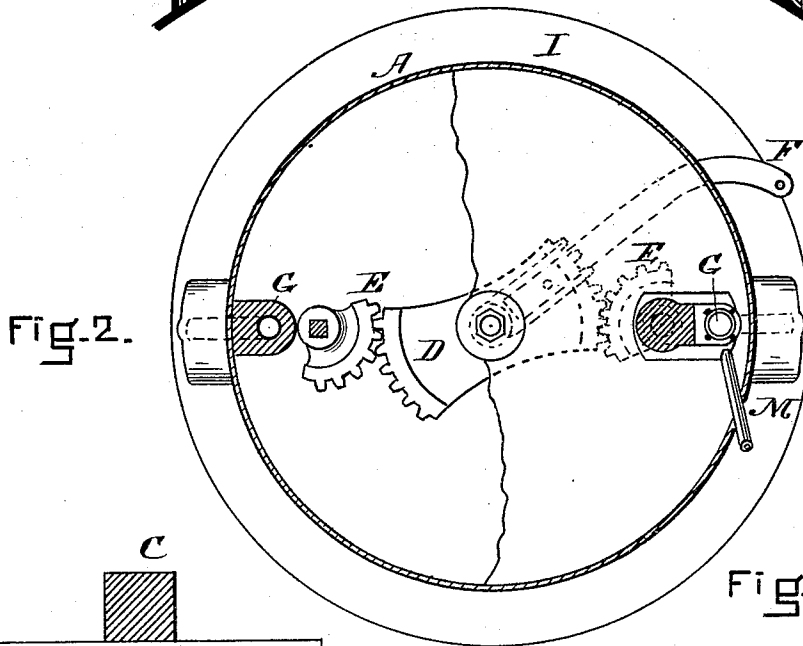


Fig. 2.

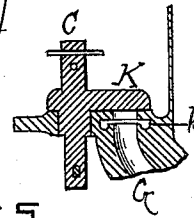


Fig. 5.

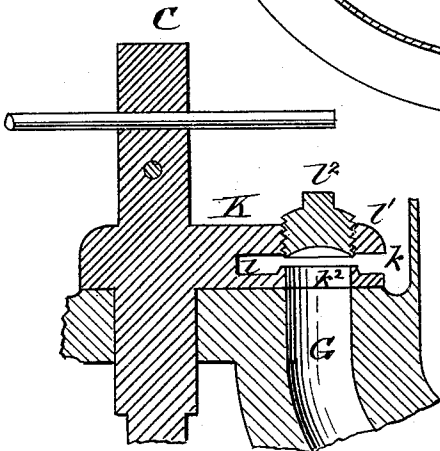


Fig. 3.

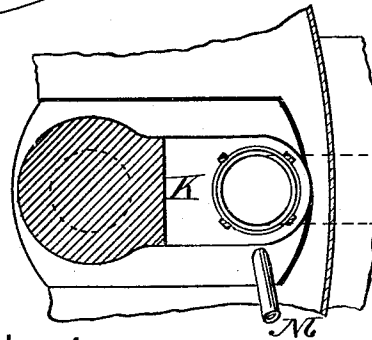


Fig. 4.

WITNESSES

J. W. Dolan
M. Lynch

INVENTOR

Chas. W. Sherburne
by his atty.
Charles Raymond

UNITED STATES PATENT OFFICE.

CHARLES W. SHERBURNE, OF BOSTON, MASSACHUSETTS.

TRACK-SANDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 487,496, dated December 6, 1892.

Application filed October 3, 1892. Serial No. 447,608. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SHERBURNE, a citizen of the United States, residing at Boston, in the county of Suffolk, in the State of Massachusetts, have invented a new and useful Improvement in Track-Sanding Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, sufficient to enable others skilled in the art to make and use my invention without other invention on their part.

In the drawings, Figure 1 is a vertical section of the base of a sand-box with its sand-pipes to which my invention has been applied. Fig. 2 is a plan of the same, and Figs. 3 and 4 are details of said apparatus. Fig. 5 represents an equivalent form of construction.

Like letters represent like parts in all the figures.

In the drawings Fig. 1 is a wall of the shell of the sand-box as it is now made. B is the floor of the same. H is the shell of the boiler to which the same is fitted, and I is the flange which fits the same.

C is the stem of the swing-valve which is now used in the ordinary track-sanding apparatus. This stem has two transverse pins $c' c'$, and which serve to stir the sand as it descends past or at the time when the valve is revolved, very much as the pins in a salt-caster for table-salt do with regard to the salt. This stem C passes through the bottom B of the sand-box and has upon its lower side a segment-gear E, which meshes into another segment-gear D, pivoted on a hub which is below the center of the bottom of the sand-box and between the bottom of the sand-box and the shell of the boiler. This segment-gear D is on each side of this hub and engages with the segment-gear E on each side, each of which segment-gears controls a swinging sand-valve. The central segment-gear D is actuated by a lever F, worked at the will of the engineer upon the locomotive.

The sand-pipes leading from the sand-box are marked G in the drawings, Figs. 1 and 2. The valve proper of this apparatus is marked K in the drawings, Fig. 1, and is a swing-valve. It is shown enlarged in detail in Figs. 3 and 4. Formerly in this apparatus this

swing-valve was without division or slot, and by its motion covered or uncovered the openings of the sand-pipes G; but it is my intention to combine an air-blast introduced into the sand-box with the sand-pipes of the track-sanding apparatus. These sand-pipes G descend from the track-sanding apparatus down in front of the driving-wheels and are unobstructed from top to bottom.

The swing-valve K of Fig. 1 is shown in section in Fig. 3. The plan of it is as shown in plan, Fig. 4. It has a horizontal slot through its center, as shown at k , which forms a chamber-opening at all sides, except toward the stem C, into the cavity of the sand-chamber. This swing-valve is perforated from top to bottom in or near its center, as shown in Fig. 3, partly for convenience of manufacture, and around the perforation in the lower member thereof (lettered l) a slight bead is formed, (marked in the drawings k^2 .) The upper member of the swing-valve K, above the slot k , is lettered l' in Fig. 3 and forms a roof to the lower member l . The perforation in the upper member l' is closed by a screw-plug l^2 , which is inserted for the purpose of making the roof complete. By adjusting this plug up or down the distance between the top of the bead k^2 and the roof may be adjusted and the aperture in the valve adapted to feed sand of different fineness at the same speed. It is obvious that when this swing-valve is in place over the sand-pipe G no sand will feed through it without the assistance of some other force than gravity.

M is an air-pipe placed adjacent to the said valve and opposite the opening of the slot k . This pipe M is connected with the source of air-supply under pressure, preferably with the air-supply of the Westinghouse brake, and when desirable air is admitted through the pipe end and draws through the slot k into the hollow of the swing-valve K, and thence down the air-pipe G, carrying with it sand, practically according to the strength of the blast.

The specification of a patent granted to me August 30, 1892, No. 481,595, shows and describes a method of connecting a track-sanding apparatus with the air-pressure system of the Westinghouse brake, and the pipe M

of the apparatus described in this specification is to be connected with the Westinghouse air-brake system in the same manner in which the blast-pipes of the apparatus referred to are connected with such air-pressure system. This connection with the air-blast of the Westinghouse apparatus having been patented in said application is not further described in this. This arrangement enables an air-pipe to be adapted at very small expense to feed sand direct from the sand-box, the cost being practically the cost of substituting the new swinging sand-valve and its stem for the old swinging sand-valve and of adding the air-pipe M and its connection. This does not interfere with the old system of feeding sand by gravity, as that remains intact and can be worked with the rod and lever, as before. This would be convenient where the locomotive was on a train and air was not in use for a train-brake.

It is obvious that the arrangement described as having an air-chamber in the valve proper, as shown and illustrated in Figs. 1, 2, 3, and 4 of the drawings, might be replaced by an air-channel in the valve-seat, as shown in Fig. 5 of the drawings, in which the swinging sand-valve is represented as of the usual form. The sand-pipe in this case is lettered G, as in the other cases. The stem of the swinging sand-valve is, as in the other cases, marked C. The air-chamber corresponding to the horizontal slot in the swing-valve K of the apparatus heretofore described is marked k in Fig. 5, as the horizontal slot is marked k in Fig. 3. The air-pipe M of Fig. 4 would have its nozzle introduced into the cavity or air-chamber k of Fig. 5 in order to create an agitation in the sand. The swing-valve K of Fig. 5 would require to be slightly open in order to feed the sand.

This apparatus, described with the modification of detail produced by placing the air-chamber and air injection in the seat instead of in the swing-valve, is clearly equivalent to the arrangement in which the air-chamber is placed in the swing-valve. The upper member of the valve in the arrangement shown in Fig. 5 is movable and the lower member is stationary. The separation by the hori-

zontal slot is between the stationary member and the pipe G; but it is a mechanical equivalent for the lower member l, the upper member l', and the intervening horizontal slot k, the parts being simply changed about.

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

1. In a track-sanding apparatus, and in combination with the sand-box, the improved swing-valve K, consisting of a lower member l and an upper member l', separated by a horizontal slot k, substantially as and for the purposes described.

2. In a track-sanding apparatus, and in combination with the sand-box, the improved swing-valve K, consisting of a lower member l, provided with a bead k², and an upper member l', separated by a slot k, substantially as and for the purposes described.

3. In a track-sanding apparatus, and in combination with the sand-box, the improved swing-valve K, consisting of a lower member l, an upper member l', and a screw-plug l², substantially as and for the purposes described.

4. In a track-sanding apparatus, and in combination with the sand-box, the improved swing-valve K, consisting of a lower member l and an upper member l', separated from each other by the slot k, and the adjustable plug l², substantially as described.

5. In a track-sanding apparatus, and in combination with the sand-box, the improved valve K, having a chamber formed by a horizontal slot k, in combination with the air-pipe M, substantially as and for the purposes described.

6. In a track-sanding apparatus, and in combination with the sand-box, the improved valve K, consisting of the lower member l and the upper member l', separated from each other by an intermediate chamber, in combination with the air-blast pipe M, substantially as described.

CHARLES W. SHERBURNE.

Witnesses:

F. F. RAYMOND, 2d,
J. M. DOLAN.