(No Model.)

W. T. BUTLER & G. H. HATHAWAY.

TRACK SANDING APPARATUS FOR STREET CARS.

No. 336,891. Patented Mar. 2, 1886.

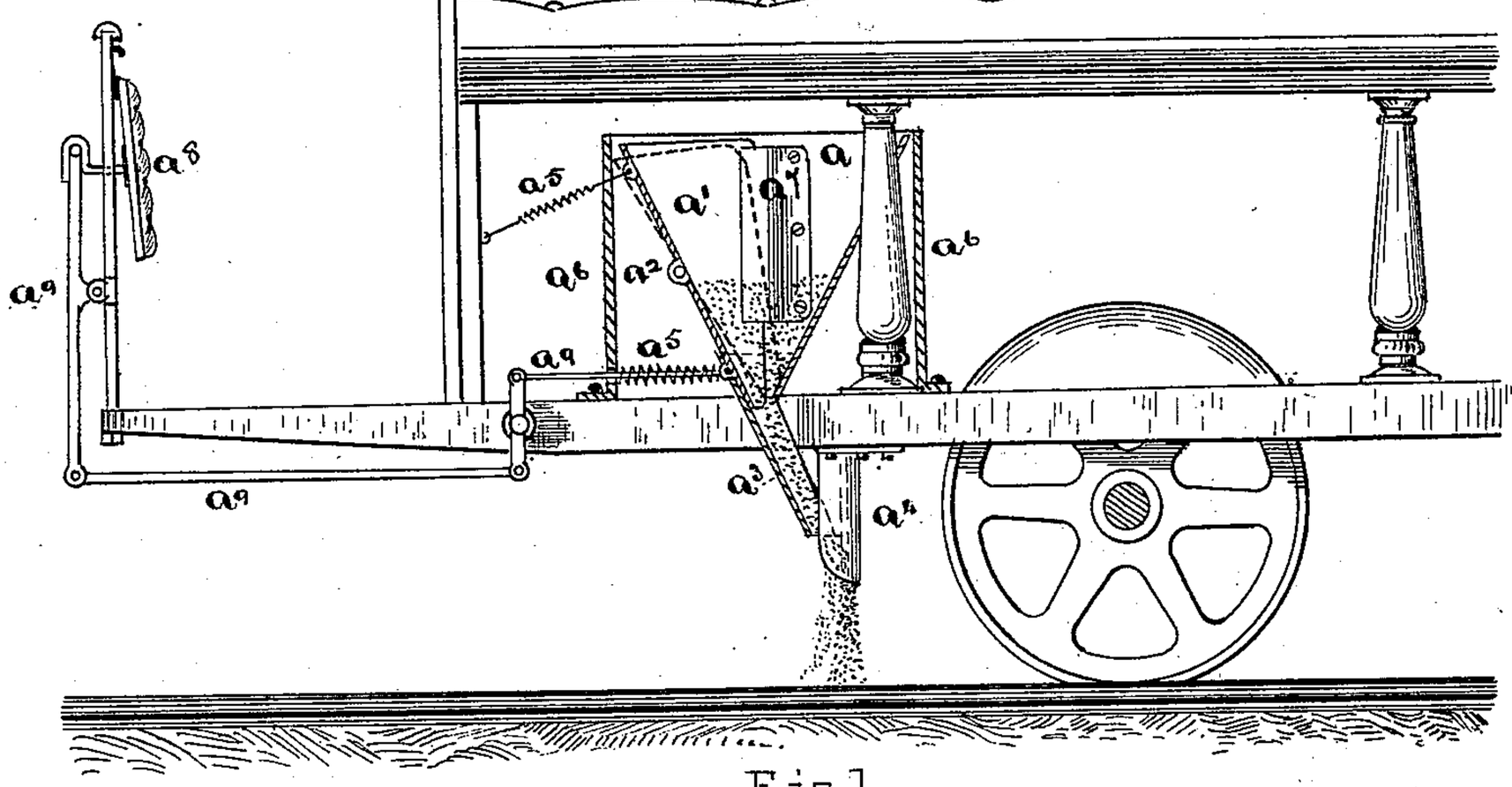

Fig. 1.

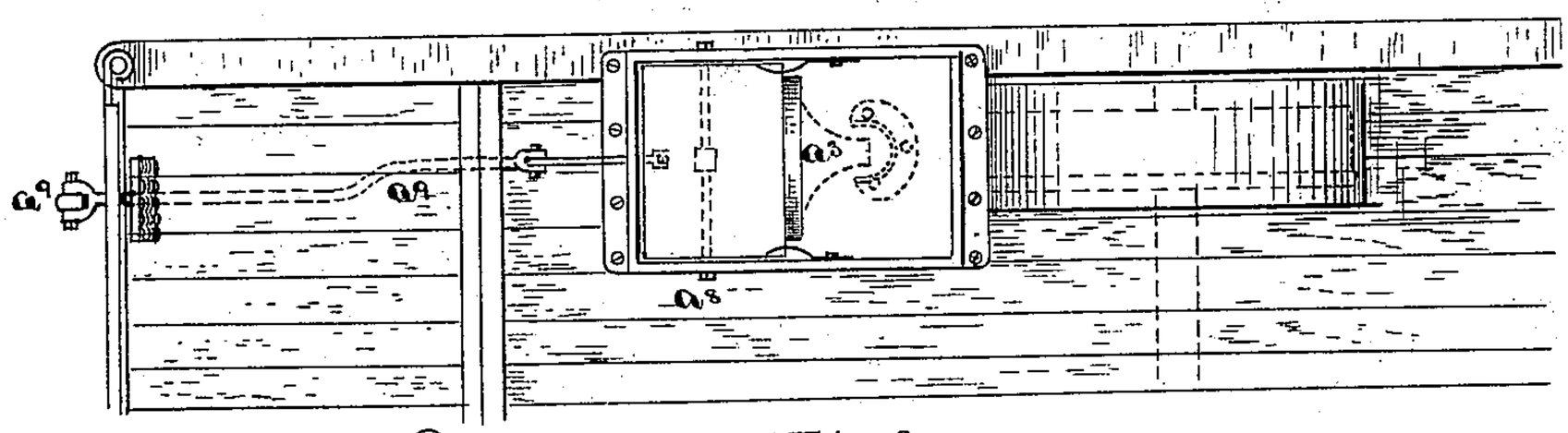

Fig. 2.

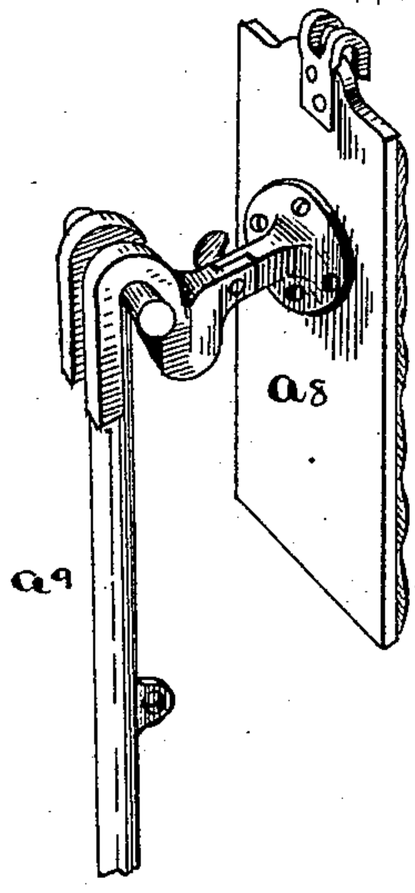

Fig. 3.

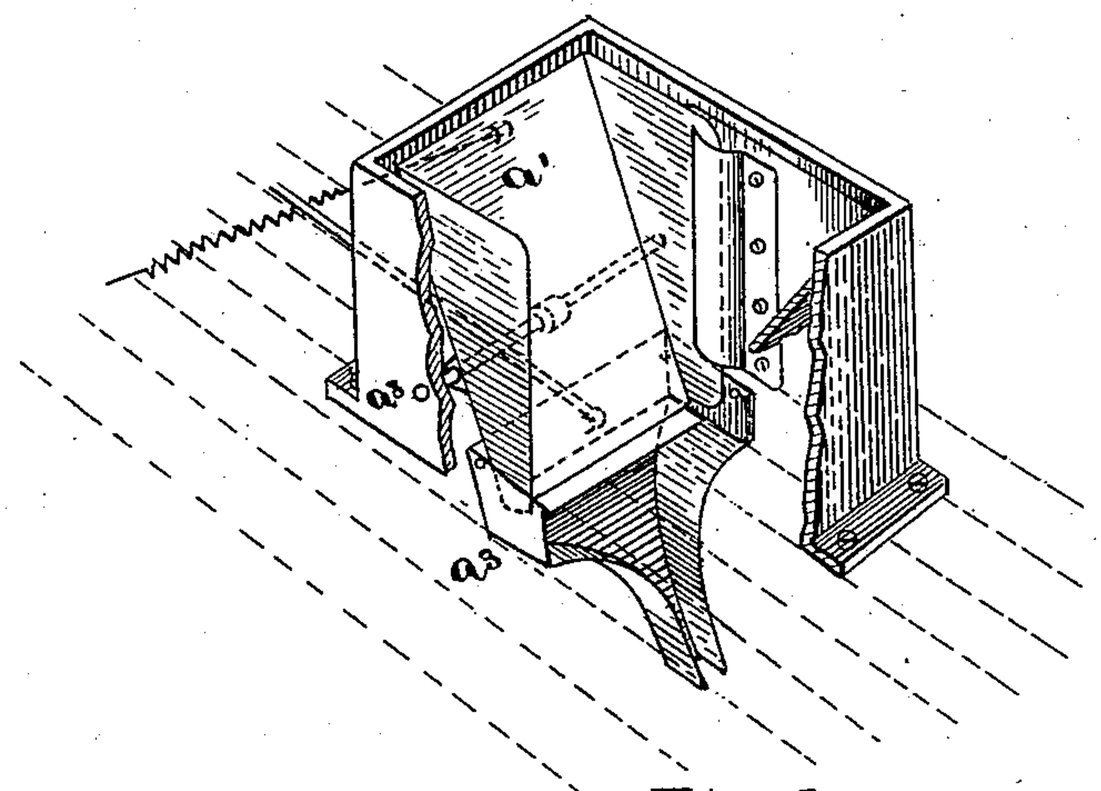

Fig. 4.

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TRACK-SANDING APPARATUS FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 336,891, dated March 2, 1886.

Application filed December 26, 1885. Serial No. 186,824. (No model.)

To all whom it may concern:

Be it known that we, WARREN T. BUTLER, of Chelsea, in the county of Suffolk and Commonwealth of Massachusetts, and GEORGE H. HATHAWAY, of Fairhaven, in the county of Bristol and Commonwealth aforesaid, have invented a new and useful Improvement in Apparatus for Discharging Sand from a Car or other Vehicle Moving on the Top of the Rail of a Railroad, of which the following is a specification.

This invention is an improvement upon that patented by George H. Hathaway, January 1, 1884, No. 291,341, and relates to the construction of the hopper, chute, and actuating-levers forming the apparatus, the object of it being to obviate some defect found to exist in the apparatus made as described and shown in the patent referred to; and it consists of a hopper made in two vertically-corresponding parts—one part fixed and the other part made to have a lateral vibrating motion, the edges of the vibrating side moving by the edges of the fixed part, and its lower end closing upon the lower end of the fixed side, where it is held by springs suitably arranged, closing the lower end of the hopper to retain the sand; also a chute from the lower end of the hopper upon an incline of about sixty degrees, pointing toward the top of the rail to be sanded, open on its uppermost side, with a shield or guard before it, to keep mud and snow out of it, and a system of crank-levers and connecting-rods, extending on a horse-car to the front of the platform, so that the driver can, by pressure with his knee or foot, retract the movable side of the hopper from the fixed side, and open a passage at the bottom of the hopper for the flow of sand into and down the chute to the rail.

In the drawings annexed, Figure 1 shows a portion of a forward part of a horse-car, where the sanding apparatus is to be placed, (one on each side of the car,) with a vertical section of the sand-hopper and box in which it is placed and a side view of the system of levers, cranks, and connecting-rods. Fig. 2 is a top plan of the box, sand-hopper, and the levers, cranks, and rods. Fig. 3 is a device to hang upon the front dash-board of the car, against which the driver may press with his knee and actuate the system of levers, cranks, and rods to open the bottom of the sand-hopper. Fig. 4 shows the box in which the sand-hopper is located, with a corner of it broken away, and the movable side of the hopper and a perspective of the chute; also by dotted lines the bar or fulcrum upon which the movable side of the hopper is supported and vibrates and the connecting-rod by which it is to be opened.

a is the fixed side of the hopper. This is made, preferably, of cast-iron, and is secured in the box by any suitable means. The outer lateral wall of it is set at an angle to the perpendicular, the lower part inclining toward the opposite side, so that the hopper has a funnel shape.

a' is the movable side of the hopper, also preferably made of cast-iron and corresponding in form, construction, and size to the fixed side, but enough narrower to allow its sides to move within the sides of the fixed part. It is supported by and vibrates or oscillates on a bar or fulcrum extending across and supported by bearing at each end of it in the box which incloses the hopper. This movable side of the hopper is held in its place with its lower end bearing against the lower end of the fixed part by a spring or springs, and is the gate by which the lower end of the hopper is opened to allow the passage of sand down and closed to retain it.

a^2 is the bar or fulcrum on which the movable side of the hopper rests and vibrates or oscillates. It is supported at each end by suitable devices in the sides of the box inclosing the hopper, and is attached to the movable side of the hopper in any suitable manner.

a^3 is the chute through which sand runs from the hopper onto the rail below. This chute is as wide at its upper end as the opening at the lower end of the hopper; but as it extends at an angle toward the rail it is narrowed to about the width of the rail. It is open on the uppermost side, to prevent the clogging of sand in it, and it is protected from mud and snow by a shield affixed to the bottom of the car, between it and the wheel.

a^4 is the shield which protects the chute a^3.

It should be of metal, bent into semi-cylindrical form, with a flange at its upper end, by which it is affixed to the bottom of the car by nails or screws.

a^5 represents springs by which the movable side of the hopper is held in its place, with its lower end against the lower end of the fixed side of the hopper. The lower one is a push-spring, and the upper one is a pull. Any different kind of or arrangement of springs which will answer the purpose may be used.

a^6 represents the walls of the box in which the hopper is inclosed. These are made of plank of suitable thickness or of metal, as may be found most desirable. This box, inclosing the hopper, will in a horse-car be located under the seats near the end of the car—one on each side, and at both ends of the car, if necessary.

a^7 is a lip of sheet metal affixed to the inside of the fixed part of the hopper, one on each of the sides, so made that the edges of the movable side will work between it and the wall of the fixed side of the hopper when it vibrates or oscillates. The object of this is to keep the sand from impeding the vibrating or oscillating of the movable side.

a^8 is a swinging device hung on the inside near the top of the dash-board of a horse-car, with an arm and connecting-hook on the back side of it extending through the dash-board, and connecting with the first lever of the system, extending to the hopper. This is about five or six inches wide, and about eight or ten inches long, and is covered with a soft pad.

a^9 is a system of levers and cranks, with connecting-rods extending from the arm on the back of a^8 to the lower end of the movable side of the hopper. The driver of a horse-car, by pressing with his knee against a^8, moves the whole system of levers, cranks, and connecting-rods, and draws the lower end of the movable side of the hopper away from the fixed side of it, and opens a passage for sand from the hopper into the chute. When the pressure on the pad a^8 is removed, the springs a^5 force the lower end of the movable side of the hopper up against the fixed side, closing the opening and stopping the passage of sand.

These improvements render it possible and perfectly practicable to use damp, or unsifted sand, sand and gravel and small stones mixed.

We claim as new and our invention—

1. In a sanding apparatus for horse-cars or other vehicles running on iron rails, a sand-hopper consisting of two vertically-corresponding parts—one part fixed and the other part made to have a vibrating or oscillating motion—substantially as described, for the purpose specified.

2. In a sanding apparatus for horse-cars and other vehicles moving on iron rails, a chute to guide the sand from the hopper to the rail upon an incline of about sixty degrees, with the uppermost side of it open, with a shield at a little distance from it, all substantially as described, for the purpose specified.

3. In a sanding apparatus for horse-cars or other vehicles running on iron rails, in combination with a hopper having one side movable, the swinging pad a^8 and the levers, cranks, and connecting-rods a^9, all substantially as described, for the purposes specified.

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