(No Model.) 2 Sheets—Sheet 1.

T. B. CLARK.

SANDING ATTACHMENT FOR STREET CARS.

No. 498,706. Patented May 30, 1893.

Fig. 1.

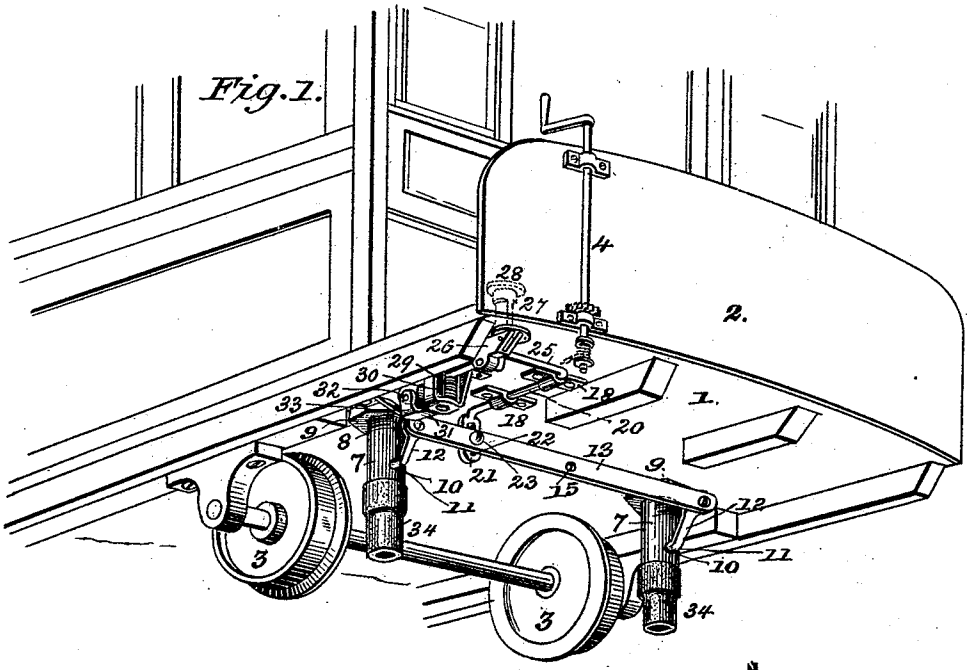


Fig. 2.

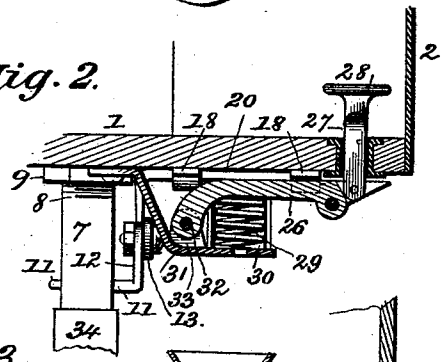
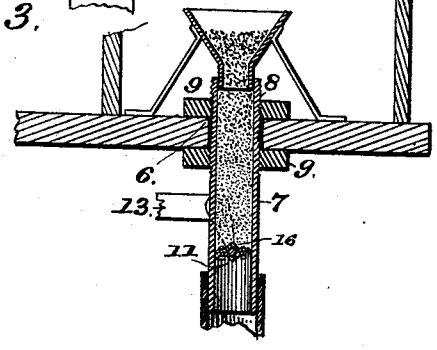


Fig. 3.



Witnesses
A. E. Dieterich
W. S. Duval.

Inventor
T. B. Clark

By his Attorneys,
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

T. B. CLARK.

SANDING ATTACHMENT FOR STREET CARS.

No. 498,706. Patented May 30, 1893.

Fig. 4.

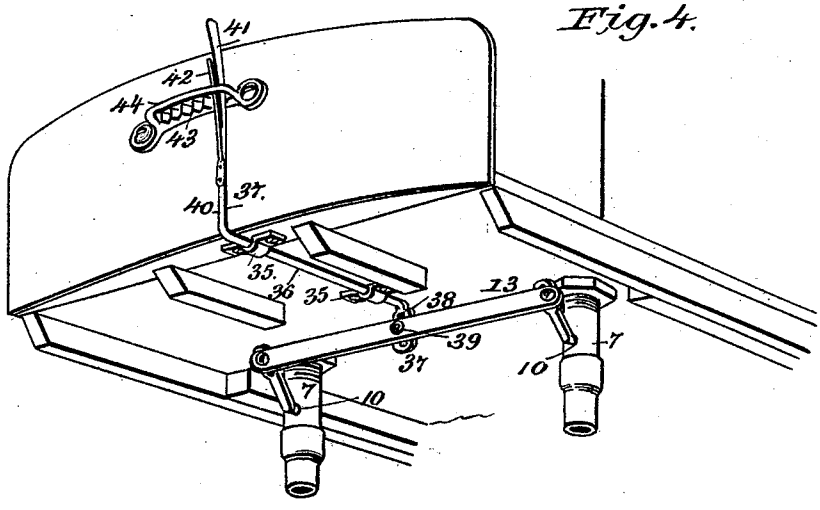
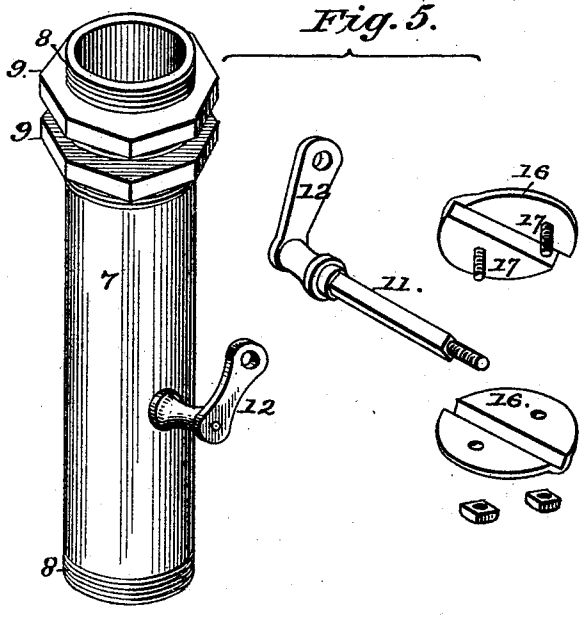


Fig. 5.



Witnesses
A. E. Dieterich
H. S. Duvall.

Inventor
T. B. Clark

By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

THOMAS B. CLARK, OF ZANESVILLE, OHIO.

SANDING ATTACHMENT FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 498,706, dated May 30, 1893.

Application filed February 23, 1893. Serial No. 463,400. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. CLARK, a citizen of the United States, residing at Zanesville, in the county of Muskingum and State of Ohio, have invented a new and useful Sanding Attachment for Street-Cars, of which the following is a specification.

My invention relates to improvements in sanding-attachments for street-cars; the objects in view being to provide an attachment of cheap and simple construction adapted to be located under the seats of the car in advance of the wheels and to be operated by foot or hand-power under the direction of the motor-man.

Other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of the front-portion of a car, the same being provided with a sanding-attachment constructed in accordance with my invention and illustrating the preferred form of my construction thereof. Fig. 2 is a longitudinal sectional view of a portion of the platform through the foot-plunger for operating the valve devices. Fig. 3 is a vertical longitudinal sectional view of one of the hoppers. Fig. 4 is a view similar to Fig. 1, the sander being constructed to be operated by hand. Fig. 5 is a detail in perspective of the hopper employed in both constructions.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the bottom of the car, 2 the dash-board at the front of the platform, 3 the front-wheels thereof, and 4 the ordinary hand-brake.

The bottom of the car immediately in advance of the front-wheels and under the seats is provided with a pair of openings 6, in which is located and from which depends, the circular hoppers 7. The hoppers 7 have their ends provided with screw-threads 8, and clamping-nuts 9 are arranged thereon and above and below the bottom or floor of the car, whereby, as will be obvious, the said hoppers are secured removably in position. Each hopper is provided with a pair of transverse perforations 10, and in each pair of perforations there is located a rocking transversely-disposed valve-shaft 11. These valve-shafts at their front ends are provided with perforated crank-arms 12, and the two arms are connected loosely by means of a transversely-disposed connecting rod 13, arranged under the platform of the car and provided at its center with a perforation, 15.

Various forms of valves may be employed in connection with the valve-shafts. In the present instance, however, the said shafts between their bearings are made angular, as shown, and are clamped at opposite sides by a pair of angularly-grooved valve or disk-sections 16, through which pass binding-screws 17, whereby they are tightly clamped upon the shaft and hence rock with the shaft. These valves when disposed horizontally entirely close or form the bottoms of the hoppers and hence prevent the escape of sand. It will be obvious that any longitudinal movement given to the connecting-rod will cause similar movements of the valve-shafts and hence either open or close the valves simultaneously and either partially or wholly as the case may be.

Secured to the under side of the platform at one side of the center thereof is a pair of longitudinally opposite clips 18, and mounted loosely in the clips is a rock shaft 20. The rock-shaft 20 has its rear end downwardly disposed to form an arm 21 provided with a slot 22 which engages loosely with a pin 23 that extends from the connecting-bar between the valve-shafts of the hopper so that any movement upon the part of this rock-shaft will cause a reciprocation of the connecting-bar or rod. The front end of the rock-shaft is provided with a laterally-disposed arm or branch 25, and the same loosely engages with a lever 26 located under the platform. The front end of the lever is bifurcated and receives the lower end of a foot-plunger 27 located in an opening in the platform and provided above the same with a head 28, while in rear of its point of connection it rests upon a coiled-spring 29 seated in a socket or cup 30 that is supported by a bracket 31. Under the platform, and beyond said spring its rear end is curved downward and is pivoted at 32 in a pair of bearing-ears 33. The lower ends

of the cylindrical hoppers are provided with depending flexible hose or tubes 34, which terminate just above the track and are designed to deliver sand directly on the rails in advance of the front wheels of the car.

In operation the hoppers are filled with sand, and the springs that support the levers serve to normally elevate the foot-plunger and hence through the medium of the rock-shaft and the connecting-rod between the valve-shafts to normally close the valves. When it is desired to deposit sand upon the rails the motor-man has simply to press the foot-plunger and depress the lever connected therewith against the tension of the spring, oscillating the rock-shaft and consequently in the manner heretofore set forth moving or reciprocating the connecting-rod, and hence the valves of the hoppers, thus permitting the sand to escape. As soon as his foot is removed from the foot-plunger the springs serve to return the parts to their former position and thus close the valves and cut off the escape of sand. It will be seen that this operation may take place wholly by the foot of the operator and his hands be left free to manipulate the brake and switch.

Referring to Fig. 4, it will be seen that I have slightly modified the means for operating the valve-shaft connecting-rod or bar, and in lieu of the foot-power for accomplishing this operation I employ a hand-power mechanism. To this end, a pair of bearing-clips 35 is located under the platform of the car longitudinally-opposite each other, and in these clips a rock-shaft 36 is loosely journaled. The rear end of the rock-shaft depends in rear of the valve-shaft connecting-rod and for such purpose is provided with an arm 37. The arm is slotted, as at 38, and engages a bearing-bolt 39 projecting from the connecting-rod. The front end of the rock-shaft extends to a point slightly in advance of the dash-board and is there provided with an upwardly-disposed lever 40, the upper end of which is provided with a handle 41, adapted to be readily grasped by the motor-man. Upon the front of the lever a spring-rod 42 is located. The lever moves over the teeth of a rack-bar 43, secured to the dash-board, and is embraced by a guard 44, that is located in front of and extends parallel with said rack-bar and is borne upon by the spring-rod which serves to press the lever to the rear and hence into engagement with any one of the notches of the rack-bar.

It will be seen that the operator by pushing the lever to the front so as to disengage it from the rack-bar may swing the lever to any desired extent and thus communicate a reciprocal motion to the valve-shaft connecting-bar or rod, whereby the valves are operated in the hoppers and immediately upon release of the lever the spring will serve to throw the same to the rear into engagement with a convenient notch of the rack-bar.

It will thus be seen that I have provided means for operating the sanding-attachment either by foot or hand power, and I prefer to employ the foot-power, inasmuch as the hand of the operator is then left free to operate the brake and switch. At the same time I do not limit my invention to the employment of the foot-power, but hold that I may substitute the hand-mechanism if desired, inasmuch as both are operated on the same principle and only differ in the slight details, to which I do not limit my invention.

Having described my invention, what I claim is—

1. The combination with a car provided with circular openings in its bottom or floor in advance of its front wheels, of a pair of cylindrical hoppers having their upper portions externally threaded and located in the openings, upper and lower clamping-nuts arranged upon the threaded portions above and below the floor, transverse valve-shafts journaled in the hoppers and having their outer ends terminating in cranks, valves carried by the shafts a transverse connecting-bar or rod between the cranks, and means for reciprocating said rod or bar, substantially as specified.

2. The combination with a car, a pair of hoppers depending therefrom in advance of the wheels thereof, valve-shafts journaled in the hoppers and provided at their front ends with cranks, and a transversely-disposed connecting-bar or rod pivotally connected with the cranks, of means for reciprocating said bar, substantially as specified.

3. The combination with a car, a pair of hoppers arranged in advance of the front wheels of the same, transverse crank-shafts journaled in the hoppers, and a rod loosely connecting the cranks of said shafts, of a rock-shaft loosely journaled under the car and having its rear end provided with a depending-arm having a slot, a bolt loosely mounted in the slot and passing through the connecting-bar, and means for oscillating said shaft, substantially as specified.

4. The combination with a car, a pair of hoppers depending from the bottom of the same in advance of the front walls, a pair of shafts mounted transversely in the hoppers and having cranks at their outer ends, a transverse connecting-rod loosely connecting the cranks, and valves mounted on the shafts, of a pair of bearings arranged in front of the connecting-rod, a rock-shaft arranged in the bearings, a depending-arm at the rear end of the rock-shaft loosely connected with the connecting-rod, a laterally-disposed arm at the front end of said rock-shaft, a spring for normally raising said laterally-disposed arm, and a foot-plunger extending from the platform and adapted to operate said arm and depress the same against said spring, substantially as specified.

5. The combination with a car, a pair of hoppers depending therefrom in advance of the front walls, transverse shafts arranged in

the hoppers, valves carried by the shafts, and a transverse connecting-bar connecting the outer cranked ends of said shafts, of bearings under the car, a rock-shaft arranged in the bearings, a depending slotted arm at the rear end of the rock-shaft, a bolt connecting the slot with the connecting-rod, a laterally-disposed arm or branch at the front end of the shaft, a bifurcated lever loosely connected to said arm or branch, a plunger extending through an opening in the platform, a bearing on the front end of said lever, a bracket depending from the platform below the lever and having bearing-ears to which the rear ends of the lever are pivoted, a socket arranged in the bracket in advance of the bearing-ears, and a coiled-spring seated in the socket and bearing against the under side of the lever, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS B. CLARK.

Witnesses:

JOHN A. GREEN,

CLARA CHURCH.