

(No Model.)

C. H. TAYLOR.
SAND BOX FOR CARS.

No. 559,549.

Patented May 5, 1896.

Fig. 1.

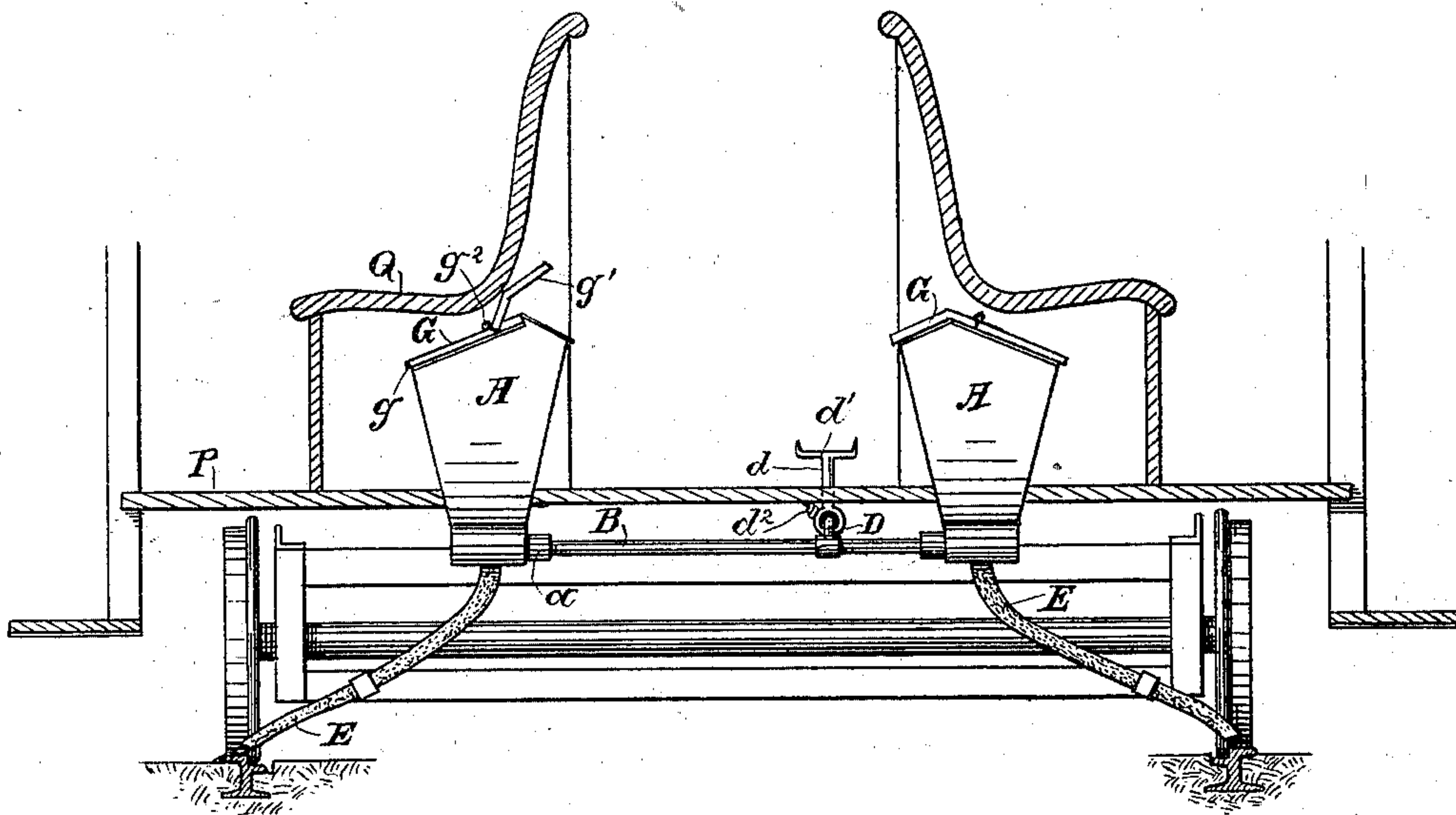


Fig. 2.

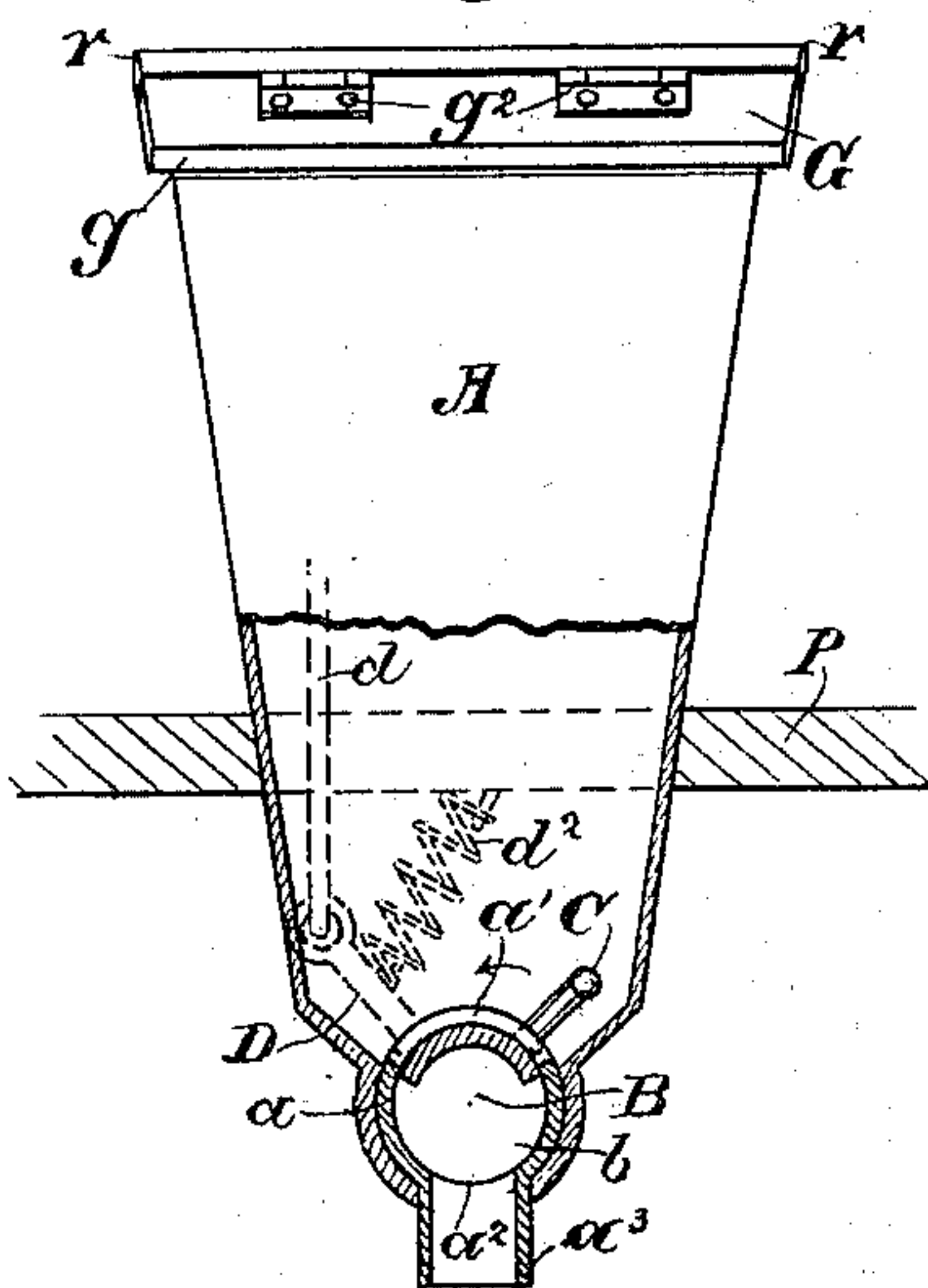
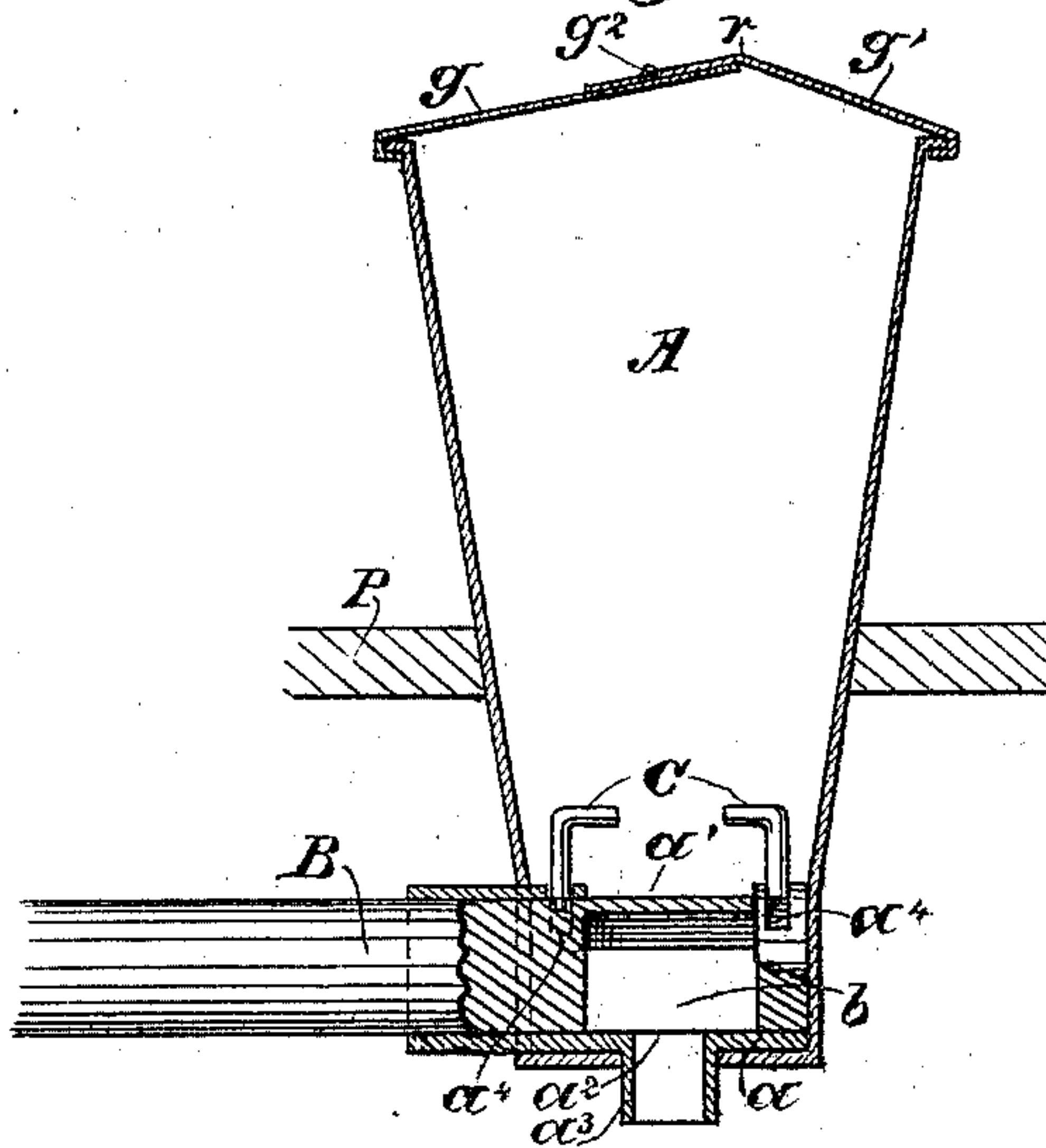


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. TAYLOR, OF SAN FRANCISCO, CALIFORNIA.

SAND-BOX FOR CARS.

SPECIFICATION forming part of Letters Patent No. 559,549, dated May 5, 1896.

Application filed December 5, 1895. Serial No. 571,105. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY TAYLOR, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Sand-Boxes for Cars; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of devices attached to railway and street cars for depositing sand upon the rails to increase the tractive power of the wheels at points of great gradient, or where for any reason, as moisture or grease, the wheels are inclined to slip.

My invention consists in the novel construction and arrangement of the box, and of the mechanism for controlling its discharge, as I shall hereinafter fully describe.

The object of my invention is to provide a simple and effective sand-box for cars, from which the delivery of the sand shall at all times be accurate and positive, and in which the sand shall always remain dry and loose enough to be discharged with certainty.

Referring to the accompanying drawings, Figure 1 is an elevation of my sand-box, showing its application to a car. Fig. 2 is a side view, the lower portion of the hopper being in cross-section. Fig. 3 is a section in the line of the valve and valve-seat.

A is the hopper or box for the sand. It is located in any suitable position on the car P, but its best position is under the seat Q thereof, its lower end extending down through the car-floor. The bottom of the hopper is best made inclining downwardly to the middle, where is located or formed a valve-seat a , having an entrance-aperture a' on top and a discharge-hole a^2 in its lower side, which said hole communicates with a connection a^3 for the flexible conveying-tube, to be presently described. In this valve-seat a is fitted an oscillating valve B, having a port b , adapted by the movement of the valve to be thrown into alinement with both the entrance-aperture a' and the discharge-hole a^2 of the valve-seat a , whereby the communication is opened between the hopper and the conveying-tube, and also to be thrown out of line with said entrance-aperture a' , whereby said communication is closed.

Upon the valve B are the agitators or stir-

rers C, which play in slots a^4 in the valve-seat. These agitators may be in any suitable number, preferably two, as here shown. They are bent arms extending into the hopper, their freely-moving extremities being in such proximity to the entrance-aperture a' of the valve-seat as to insure the freedom of said aperture and keeping it clear for the inflowing sand. These arms may also serve as stops to limit the movement of the valve and define with accuracy its open and the closed position.

D is a crank-arm on the valve outside of the hopper. From this a rod d extends to a treadle or foot-rest d' or any other convenient power device on or above the car-floor, whereby the valve may be rocked. A spring d^2 returns the valve. Connected suitably with the hopper below is a conveyer or conductor E, which is preferably a flexible one. This is attached to connection a^3 and extends down in a suitable course to a proper position over the track-rail to deposit the sand thereon. Though the sand-box may be a single one adapted to deposit sand on one rail only, I have here shown it as a double one, there being two hoppers A. The valve B is a long shaft extending between and into the hoppers, so that the sand is let out of both simultaneously.

The device, as stated before, is located in suitable position on the car. When placed upon the car-body anywhere the flexible, conductors E, carried down and guided by the truck-frames, permit the necessary swinging movement of the truck.

The operation is as follows: The valves B being closed the sand in the hoppers is confined; but upon opening the valves the sand will pass out. The agitators C serve the necessary and useful purpose of keeping the sand from caking or packing, so that whenever the valves are turned the sand is stirred up and lightened, so that it will be discharged with certainty. The best location of the hoppers, as I have heretofore mentioned, is under the car-seats, one on each side. In this position they are not only out of the way, but are better protected from rain or other water, as in washing. This protection is of importance, because it is very necessary to keep the sand absolutely dry. To further this object,

I shape the tops of the hopper peculiarly and provide them with novel covers, as I shall now describe. The hopper-top is a ridged one, the ridge-line being represented by $r r$, and it is preferably situated nearer the inner than the outer wall of the hopper. From this ridge-line the top slopes downwardly toward the outer side and is wholly under and protected by the car-seat, and it also slopes downwardly toward the inside, this narrower portion being inside the vertical plane of the seat, whereby access may be had to the hopper to replenish it or for any other purpose. The cover G of the box is fitted to it in any suitable manner, preferably by flanges, providing for its ready removal, and said cover consists of a main part g , adapted to cover the main or outwardly-sloping part of the hopper-top, and a lid g' , adapted to cover the smaller or inwardly-sloping part of said hopper. The lid g' considerably overlaps the part g and is hinged thereto at g^2 . By the arrangement and construction thus described the hoppers are partially protected from water by the car-seats, but fully by their sloping covers, as the water will flow down the slopes thereof, and the overlapping of the cover-lids protects the hinge-joints.

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

1. A sand-box for cars consisting of a hopper, a valve-seat in the bottom of the hopper having an entrance-aperture above, and having slots beside said aperture and a discharge-hole below, an oscillating valve under the control of the operator, fitted to the valve-seat and having a port adapted to be thrown into and out of line with the openings of said seat, to control the passage of sand, agitator-arms on the valve projecting through and working in the slots, having their upper ends

bent inwardly toward each other, and lying over the discharge-aperture, and a flexible tube leading from the discharge-outlet to the rail.

2. An improved sand-box for cars consisting of hoppers along each side of and under the seats of the car, each having a discharge-hole below, and a valve-seat provided with slots arranged on each side of the discharge-aperture, a valve in each valve-seat having a port adapted to be thrown into and out of line with the openings of said seats, a shaft extending from one valve to the other and a flexible tube extending laterally from each discharge-hole to the contiguous rail, agitator-arms secured to the valves, projecting through said slots and bent toward each other at their upper ends, a crank-arm on the shaft and a connecting-rod and power device by which the shaft is rocked, substantially as herein described.

3. In a sand-box for cars, the receiving-hopper having in its bottom a valve under the control of the operator for the discharge of sand, said hopper having a downwardly-inclined bottom and a ridged top, the ridge-line of the top being nearer to the inner wall of the hopper than to the outer wall and said top sloping in opposite directions, a cover for the box consisting of a main part adapted to cover the outwardly-sloping part of the hopper-top and a lid to cover the inwardly-sloping part thereof, said lid overlapping the hinged joint of the two parts of the cover and said cover being removably fitted to the box by means of flanges.

In witness whereof I have hereunto set my hand.

CHARLES H. TAYLOR.

Witnesses:

S. H. NOURSE,
GEO. H. STRONG.