

C. H. ROBERTSON.
SANDER.

APPLICATION FILED MAR. 8, 1910.

960,584.

Patented June 7, 1910.

3 SHEETS—SHEET 1.

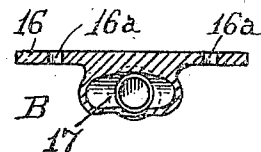
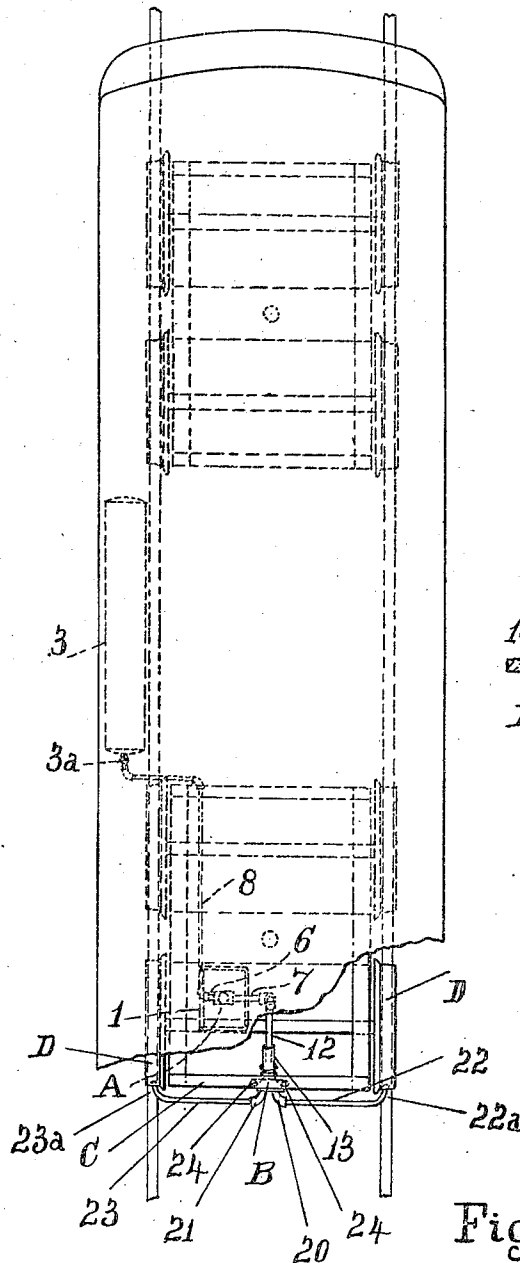


Fig. 5.

Fig. 1.

Witnesses.

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Joseph L. Kavanaugh.

Inventor.

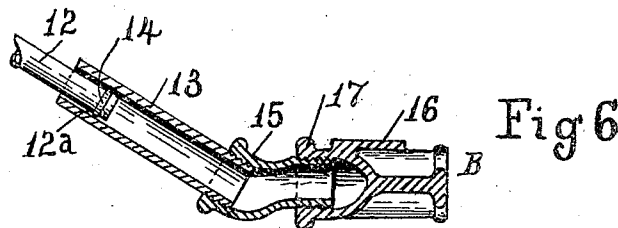
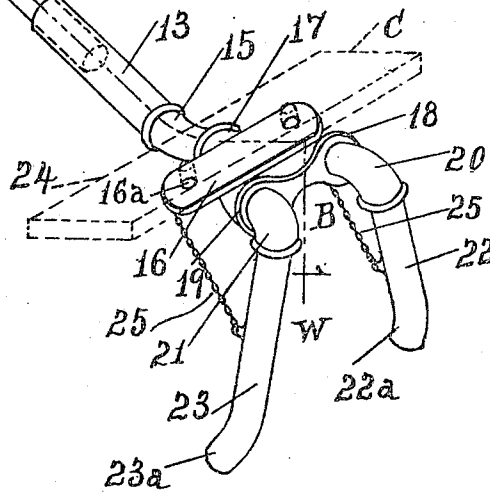
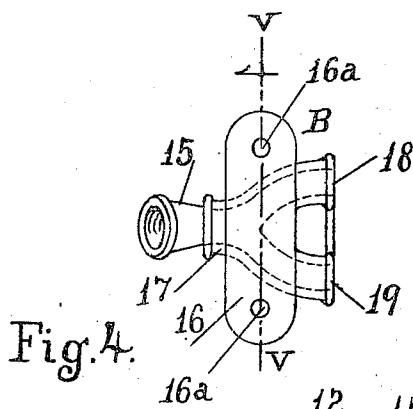
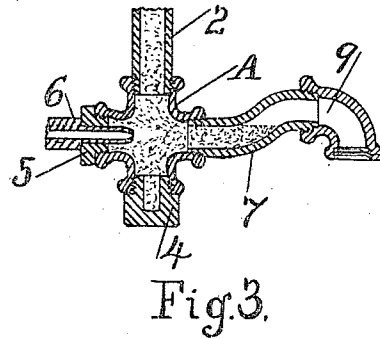
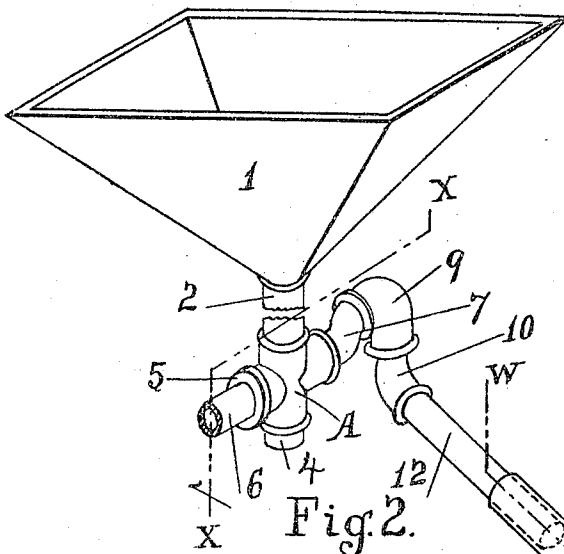
CHARLES H. ROBERTSON.
By Atty. N. D. DuBois.

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3 SHEETS—SHEET 2.



Witnesses.
Pearl Coleman.
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3 SHEETS—SHEET 3.

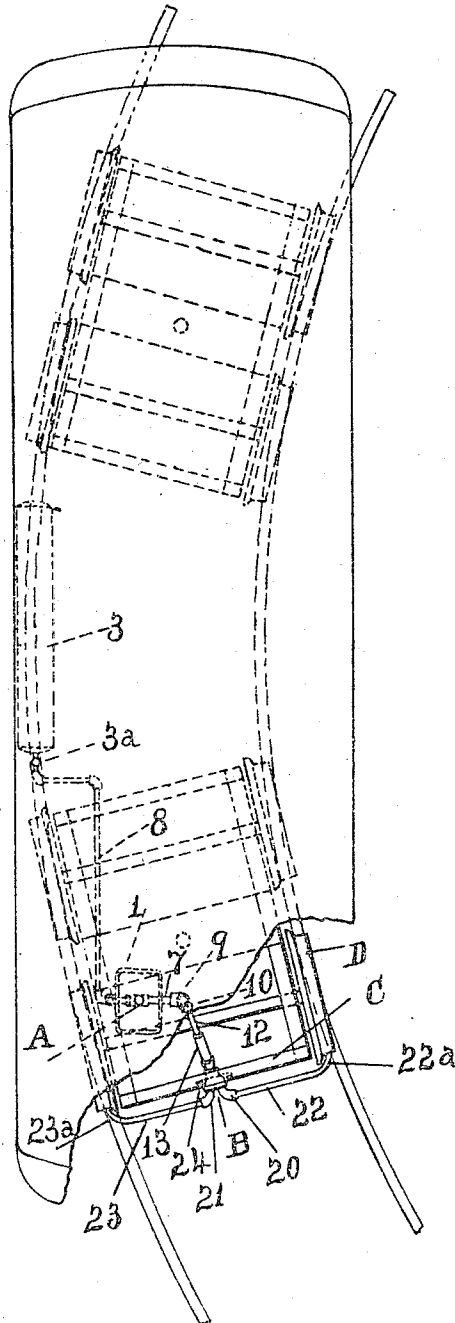


Fig. 7.

Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES H. ROBERTSON, OF SPRINGFIELD, ILLINOIS.

SANDER.

960,584.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed March 8, 1910. Serial No. 548,090.

To all whom it may concern:

Be it known that I, CHARLES H. ROBERTSON, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Sander, of which the following is such a full, clear, and exact description as will enable others skilled in the art to make and use my said invention.

This invention relates to means for applying sand on the rails of rail-way tracks to prevent slipping of the wheels of the cars running on the rails.

The purposes of the invention are to provide a flexible sander, which will readily adapt itself to use in a variety of different positions on the car and which will apply sand on the rails in front of the wheels while rounding a curve as effectively as while running on a straight track; to provide a sander constructed entirely of metal, thereby avoiding the annoyance and expense incident to the breaking or rupturing of rubber hose or other similar pipes hitherto commonly used to form the flexible connection of sanders; to provide a receiver adapted to keep the sand at a uniform level within said receiver; and to provide other new and useful features of construction.

With these ends in view my invention consists in the novel features of construction and combinations of parts shown in the annexed drawings to which reference is hereby made and hereinafter particularly described and finally recited in the claims.

Referring to the drawings, in which similar reference numerals and characters designate like parts in the different views: Figure 1 is a plan of the sander in position on a car; Fig. 2 is an enlarged isometric view of the detached sander; Fig. 3 is a vertical section on the line X. X. of Fig. 2; Fig. 4 is a top plan of the distributor; Fig. 5 is a vertical section on the line V. V. of Fig. 4; Fig. 6 is an enlarged vertical section on the line W. W. of Fig. 2; and Fig. 7 is a plan showing the position of the sander on a car which is rounding a curve.

The sand-box 1 may be of wood, or metal, of any approved form, and may be located in any convenient position in or under the car.

The invention contemplates using compressed air to apply the sand, the air supply being obtained from a cylinder 3 located in any suitable position on the car.

For the sake of economy in construction, and to facilitate repairs in case of emergency, the several elements of the mechanism, such as the pipes, tees, elbows, nipples, union, etc., except where otherwise specified, are of standard forms and sizes.

The sand receiver, designated as a whole by the letter A, comprises an iron cross-fitting of the standard form. The supply pipe 2 screws into the upper end of the cross. A plug 4, removable for cleaning the receiver, screws into the lower end of the cross. A plug 5 supporting a nozzle 6, screws into one arm of the cross, and a bent nipple 7 screws into the other arm of the cross.

A pipe 8 connects the nozzle 6 with the air cylinder 3. The supply of air to the nozzle 6 may be controlled by a valve 3^a of any approved construction.

A 90° elbow 9 screws onto the nipple 7, and a 45° street-elbow 10 screws into the lower end of the elbow 9. The outer end of the nipple 7 fitting in the elbow 9, is higher than its lower end, which screws into the arm of the cross A, and the cross A, the pipe 2, and the nipple 7 are of such relative size that the sand will normally occupy the position shown in Fig. 3, and when there is no air pressure on the sand it will maintain that level and will not dribble through the sander, but when the air is applied the sand will start easily and the air will act effectively to blow the sand which is in front of the nozzle 6, outward through the elbow 9 and its connections.

The supply pipe 12 screws into the lower end of the elbow 10 and telescopes within the pipe 13. The pipe 12 has a circumferential groove 12^a (Fig. 6) accommodating a spring ring 14, conforming to the inside of the intake pipe 13. The purpose of the ring 14 is to prevent air blowing outward through the space between the pipes 12 and 13, and thereby causing sand to pack within said space. The ring 14 is used because it is inexpensive and easily applied; but any other suitable packing around the pipe 12, adapted to prevent back pressure through the pipe 13, may be used without departure from my invention. The pipe 13 screws into a 45° street-elbow 15.

The distributor, designated as a whole by the letter B, is a hollow Y-shaped casting comprising a plate 16, a stem-member 17 and branches 18 and 19. The elbow 15

screws into the stem-member 17 of the distributor B.

90° street-elbows 20 and 21 screw into the branches 18 and 19 respectively, and delivery pipes 22 and 23 screw tightly into the lower ends of the elbows 20 and 21 respectively. The elbows 20 and 21 are fitted loosely in order that they may swivel in the branches 18 and 19 respectively, to permit the pipes 22 and 23 to be spread apart, so that the lower ends of the pipes may be located accurately above the rails. In the drawings I have shown the pipes 22 and 23 of equal length, but if the distributor is located to one side of the center of the truck frame, pipes 22 and 23 of unequal lengths will be used. The lower parts 22^a and 23^a of the pipes 22 and 23 respectively are curved to extend under the car wheels D, so that the pipes will apply the sand on the rails immediately in front of the wheels.

The distributor B is connected with the truck frame C, by bolts 24 extending through the truck frame and through the holes 16^a in the plate 16.

In fitting and assembling the parts the screw of the nipple 7 will fit loosely in the elbow 9; the screw of the elbow 10 will fit loosely in the lower end of the elbow 9; and the screw of the elbow 15 will fit loosely in the member 17 of the distributor B, and the screws of the elbows 20 and 21 fit loosely in the members 18 and 19 respectively; in order that the elbow 9 may have oscillative movement on the nipple 7, the elbow 10 may oscillate in the elbow 9, the elbow 15 may oscillate in the member 17, and the elbows 20 and 21 may oscillate in the members 18 and 19 respectively. All the other parts will be securely connected together. The loose connections of the parts 7 and 10 with the elbow 9; the loose connection of the elbow 15 with the distributor B; and the loose connections of the delivery pipes with the distributor make the connections flexible, and admit of universal movement of the distributor B relatively to the receiver A, and render the apparatus readily attachable in different positions on cars of different constructions, so that no matter what the construction of the car may be, nor what the position of the distributor relative to the receiver may be, the apparatus will operate effectively under all conditions. This flexibility and adaptation for different situations, and the use of standard tees, elbows, pipes and connections; and the pivotal or oscillative connections of the parts with each other are valuable features of this invention.

I have shown the distributor mounted in a central position on the car frame and the pipes 22 and 23 of equal length, but the flexibility of the apparatus admits of attaching the distributor at either side of the center of the truck frame; the only dif-

ference being that if the distributor is attached at one side of the center of the frame the delivery pipe on that side, running from the distributor downward in front of the car wheel will be shorter and the corresponding delivery pipe on the other side will be longer.

Chains 25 connected with the pipes 22 and 23 may be suitably connected with the car truck frame to support the delivery pipes so that their lower ends will run close to, but will not contact with the rails.

In practical operation if the truck frame rises or falls to any extent the elbow 9 will swivel on the nipple 7 and the pipe 12 will slide in the pipe 13 to compensate for the rise or fall. If the truck frame swings to the right or the left the elbow 10 will swivel in the elbow 9 to permit free swing of the truck, and if the truck frame rocks upward or downward at either end, the elbow 15 will swivel in the member 17 to permit free oscillation of the truck frame. It will be seen therefore that the apparatus automatically adapts itself to inequalities of the grade of the tracks, to the swinging of the car in turning curves, and to the rocking of the car.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination of a sand box; a receiver in communication with the sand box; a distributor in operative relation to the receiver; a flexible connecting device connecting the distributor with the receiver; and two delivery pipes connected with the distributor and adapted to apply sand on the rails of a rail-way track immediately in front of two wheels on the same car truck.

2. The combination of a sand-box, a receiver in communication with the sand-box, means for supplying compressed air within said receiver, a distributor adapted to be connected with a car truck frame, an intake pipe connected with said distributor, delivery pipes connected with said distributor and adapted to discharge sand onto the rails of a rail-way track immediately in front of the car wheels running on said rails, and a supply pipe in communication with said receiver and telescoping in the intake pipe connected with said distributor.

3. The combination of a cross-fitting, a pipe screwing into the cross-fitting and connected with a source of sand supply, a removable plug fitting in the lower end of said cross; a plug screwing into one arm of the cross and supporting a nozzle, a nozzle mounted on said last named plug and communicating with a source of compressed air supply, a bent nipple connected with the other arm of said cross, a first elbow having a swivel connection with said nipple, a second elbow having a swivel connection with said first elbow, a pipe connected with said

second elbow, a distributor attachable to a car truck frame, a third elbow having a swivel connection with said distributor, an intake pipe secured on said third elbow, and
 5 a supply pipe secured on said second elbow and slidable within said intake pipe.

4. The combination of a distributor, means for supporting the distributor, delivery pipes having a swivel connection with said distributor, an intake pipe having a swivel
 10 connection with said distributor, and means for supplying sand within said intake pipe.

5. The combination of a distributor and its support, delivery pipes having a swivel connection with said distributor, means for
 15 supporting said delivery pipes in different positions, an intake pipe having a swivel connection with said distributor and means for supplying sand within said intake pipe.

6. The combination of a sand-box, a receiver communicating with said sand-box, means for supplying air under pressure within said receiver, a distributor in operative
 20 relation to said receiver, delivery pipes communicating with said distributor, an intake pipe having a swivel connection with

said distributor, a supply pipe telescoping in said intake pipe, a nipple connected with said receiver, an elbow swiveled on said nipple and a second elbow connected with said
 30 supply pipe and swiveled in said first named elbow.

7. The combination of a distributor and its support, delivery pipes mounted on said distributor and adapted to apply sand on
 35 the rails of a rail-way track, an intake pipe communicating with said distributor, a supply pipe telescoping within said intake pipe, a sand-box, a receiver communicating with the sand-box, a supply pipe communicating
 40 with said receiver and telescoping within said intake pipe, and a packing ring surrounding the supply pipe within the intake pipe.

In witness whereof I have hereunto signed
 45 my name at Springfield, Illinois, this 28th day of February 1910.

CHARLES H. ROBERTSON.

Witnesses:

PEARL COLEMAN,
 ROY G. TROXELL.