No. 668,388. Patented Feb. 19, 1901.

C. PICKRING & P. CLARKE.

SANDER FOR ROLLING STOCK.

(No Model.) (Application filed Apr. 15, 1899. Renewed Dec. 10, 1900.)

Fig. 2.

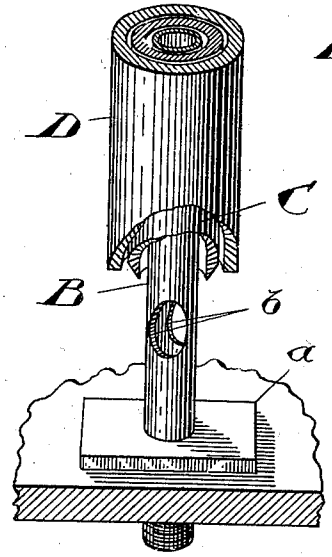


Fig. 1.

Witnesses

A. J. Colbourne
N. C. Dickson.

Inventors

Charles Pickring
and
Peter Clarke
by Ridout & Maybee
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES PICKRING AND PETER CLARKE, OF TORONTO, CANADA; SAID CLARKE ASSIGNOR TO SAID PICKRING.

SANDER FOR ROLLING-STOCK.

SPECIFICATION forming part of Letters Patent No. 668,388, dated February 19, 1901.

Application filed April 15, 1899. Renewed December 10, 1900. Serial No. 39,326. (No model.)

To all whom it may concern:

Be it known that we, CHARLES PICKRING, machinist, and PETER CLARKE, mechanical engineer, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented a certain new and Improved Sander for Rolling-Stock, of which the following is a specification.

The object of our invention is to provide a device for sanding rails which will be perfectly reliable and economical and subject to none of the disabilities under which sanders labor which are provided with valves of various kinds; and it consists, essentially, of a box provided with an outlet-pipe having one or more openings therein above the bottom and a slide-pipe suitably guided and vertically movable, so that it may be caused to cut off the sand from the opening in the outlet-pipe or to permit it to pass freely through the same, the whole being constructed in detail substantially as hereinafter more specifically described and then definitely claimed.

Figure 1 is a vertical sectional elevation of our improved sander with the slide-pipe down. Fig. 2 is an enlarged perspective detail, partly broken away, showing the outlet-pipe and the lower ends of the guard and slide pipes, with the latter in its raised position.

In the drawings like letters of reference indicate corresponding parts in both figures.

A is the sand-box, formed of sheet metal or other suitable material. Through the bottom of this box extends the outlet-pipe B, which is preferably secured to the metal plate *a*. In the sides of this pipe, a short distance above the bottom of the sand-box, are formed one or more holes *b*. Surrounding the outlet-pipe B is the slide-pipe C. Outside the slide-pipe is located the guard-pipe D. The upper end of this guard-pipe is preferably connected to the cross-bar E, which is suitably secured to the sides of the sander. The guard-pipe extends downwardly to a point near the opening in the outlet-pipe, but above the same.

F is a vertical rod secured within the end of the slide-pipe C by means of a pin *c*. The upper end of this vertical rod is pivoted to the inner end of the lever G, which is fulcrumed at *d* upon a suitable bearing extending upwardly from the cross-bar E. The other end of this lever is pivotally connected with the vertical rod H, which extends upwardly to a point convenient to the operator's hand and is preferably provided with a suitable head or button. The lower end of this rod extends through the floor I and is pivotally connected with the lever J, fulcrumed at *e* on a suitable bearing secured below the floor.

K is a foot-plunger projecting up through the floor of the car and provided with a suitable head for engagement by the foot of the operator. The lower end of this plunger is pivoted to the lever J. By pressing with the foot upon the upper end of the plunger it is evident that the slide-pipe C may be raised to the position shown in Fig. 2. The sand within the box will then run freely through the holes *b* and out through the pipe B. The sand may be allowed either to drop directly through this pipe or a suitable conveyer may be connected thereto by a proper coupling.

L is a spring the upper end of which is secured in any suitable manner to the rod F, preferably by being hooked over a pin passing through a hole therein. The lower end of this spring is hooked over a pin *f*, passing from side to side of the pipe D to one side of the rod F. This spring is in a state of tension and tends normally to maintain the slide-pipe in the position shown in Fig. 1. We do not wish to confine ourselves to the exact arrangement of this spring nor of the mechanism for operating the vertical rod F, as many variations might be devised which would not depart from the spirit of our invention.

When the slide-pipe C has been raised, as previously described, the spring L will promptly return it to its normal position, when the rod H is released, with its lower edge in contact with the metal plate *a*, or the

bottom of the box if the plate be located outside the same.

It will be noted that the lower edge of the pipe C is sharpened, so that it will the more readily penetrate the sand when pressed downward with the spring. When the parts are in the position shown in Fig. 1, it is found practically impossible for any of the sand in the box to rise up within the pipe C and flow out through the hole *b*. The lower end of the pipe should preferably make a tight fit upon the plate *a*, and even if it did not it is found that sand has very little tendency to rise up through any opening located below its surface. In other words, it will not seek its level, as water does. Leakage of sand is thus absolutely prevented by our device, and yet at the same time by pressure of the foot or hand the slide-pipe is quickly raised and a steady stream of sand will flow outward to the rail. When the pressure is removed, the spring L instantly stops the flow.

The guard-pipe D is a very important part of our invention and, indeed, is essential if there be a great depth of sand in the sand-box. By its use the pressure and friction of the sand are taken off the slide-pipe, except at such parts as are necessarily exposed to enable it to operate. This enables the device to be worked with very little power and insures its always acting freely.

The outlet-pipe B is preferably continued up well within the slide-pipe to act as a guide; but it might in many cases be cut off at the level of the lower portion of the holes *b*, the sand then flowing down its open end.

It should be noted that in practice we make the levers G and J double and pivot the vertical rods F and H between them. A weight might also in some cases be substituted for the spring L. The top of the box may be either flat or sloped, as desired, and the upper portion of the box, above the cross-bar E, is preferably slotted for the passage of the lever G.

If both rails are to be sanded, we may place a V-coupling M on the lower end of the pipe B, or if necessary a sander might be used for each rail and means provided for operating them simultaneously.

From the above description it will be seen that our invention is very simple and cheap, as there can be no waste, that it may be operated without the user's attention being directed away from his other work, that it is absolutely impossible for the parts to stick or cut, as always happens with ordinary sander-valves, and that it will be perfectly reliable under all conditions of use.

What we claim as our invention is—

1. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe suitably guided and vertically movable, so that it may be caused to descend to cut off the sand from the opening in the outlet-pipe, or raised to permit it to pass freely through the same, substantially as and for the purpose specified.

2. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe suitably guided and vertically movable so that it may be caused to descend to cut off the sand from the opening in the outlet-pipe or raised to permit it to pass freely through the same, and a suitably-supported guard-pipe surrounding the said slide-pipe and descending to a point near the opening in the outlet-pipe but above the same, substantially as and for the purpose specified.

3. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe surrounding loosely the said outlet-pipe and having its lower end normally in contact with the bottom of the sander or other fixed part; and means for raising the said pipe to bring its lower end above the level of the aforesaid opening, substantially as and for the purpose specified.

4. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe surrounding loosely the said outlet-pipe and having its lower end normally in contact with the bottom of the sander or other fixed part; means for raising the said pipe to bring its lower end above the level of the aforesaid opening; and a suitably-supported guard-pipe surrounding the said slide-pipe and descending to a point near the opening in the outlet-pipe but above the same, substantially as and for the purpose specified.

5. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe surrounding loosely the said outlet-pipe and having its lower end normally in contact with the bottom of the sander or other fixed part; means for raising the said pipe to bring its lower end above the level of the aforesaid opening; and means for automatically returning the slide-pipe to its normal position, substantially as and for the purpose specified.

6. In a sander an outlet-pipe having an opening therein above the bottom of the sander, in combination with a slide-pipe surrounding loosely the said outlet-pipe and having its lower end normally in contact with the bottom of the sander or other fixed part; means for raising the said pipe to bring its lower end above the level of the aforesaid opening; means for automatically returning the slide-pipe to its normal position; and a suitably-supported guard-pipe surrounding the said slide-pipe and descending to a point near the opening in the outlet-pipe but above the same, substantially as and for the purpose specified.

7. In a sander, an outlet-pipe having an

opening therein above the bottom of the sander, in combination with a slide-pipe suitably guided and vertically movable, so that it may be caused to descend and cut off the sand from the opening in the outlet-pipe or raised to permit it to pass freely through the same, means for raising the said pipe to bring said lower end above the level of the aforesaid opening, and means for automatically returning said slide-pipe to its normal position, substantially as and for the purpose specified.

Toronto, Canada, April 10, 1899.

CHARLES PICKRING.
PETER CLARKE.

In presence of—
JOHN G. RIDOUT,
N. C. DICKSON.