

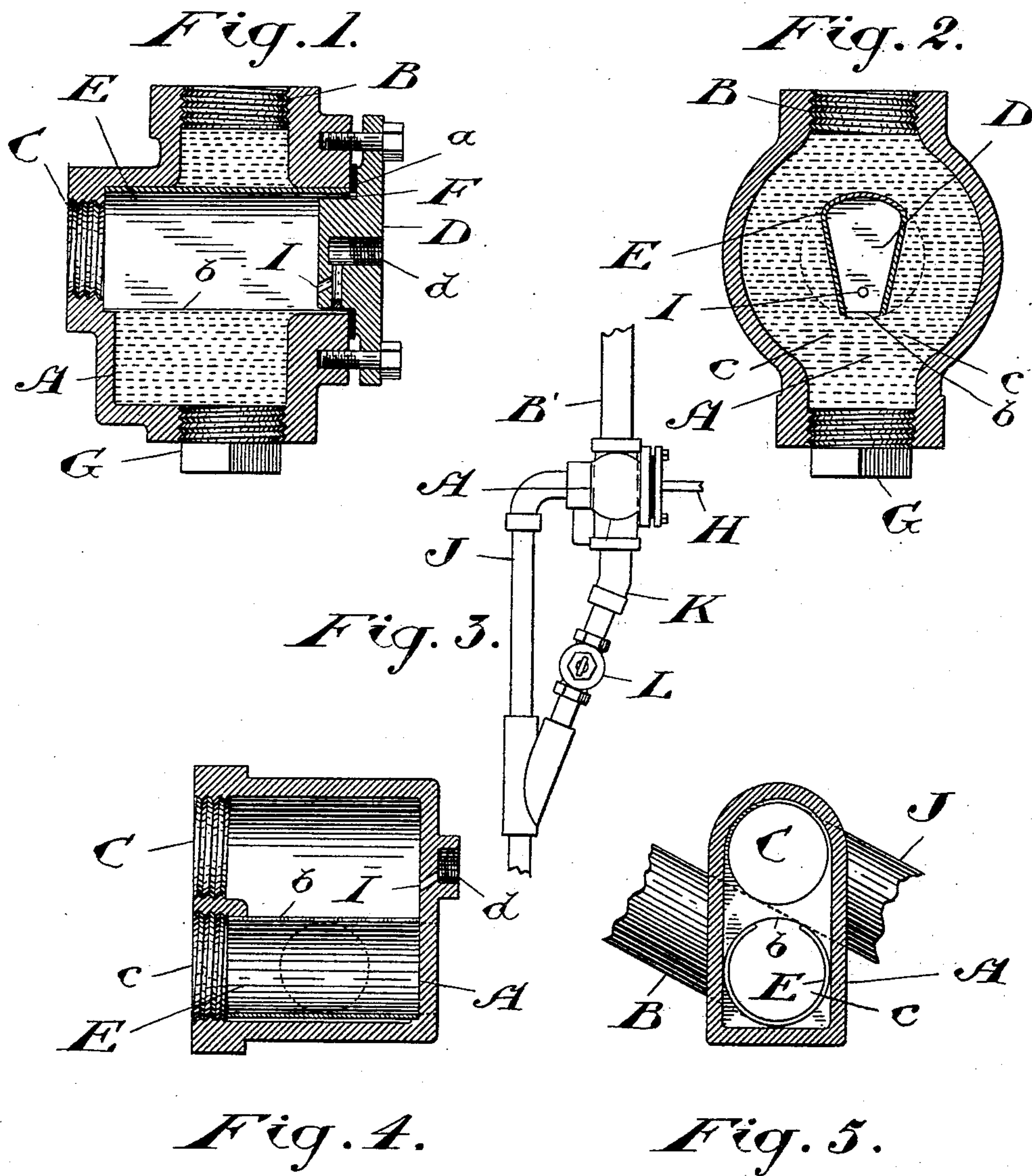
No. 633,406.

Patented Sept. 19, 1899.

J. B. WILSON, JR.  
SANDER FOR ROLLING STOCK.

(Application filed Apr. 11, 1899.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN BIRD WILSON, JR., OF SMITH'S FALLS, CANADA.

## SANDER FOR ROLLING-STOCK.

SPECIFICATION forming part of Letters Patent No. 633,406, dated September 19, 1899.

Application filed April 11, 1899. Serial No. 712,662. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BIRD WILSON, Jr., locomotive-fireman, of the town of Smith's Falls, in the county of Lanark 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 my invention is to devise a simple and effective sander for use with rolling-stock; and it consists, essentially, of a chamber provided with a supply-pipe or inlet, an outlet-pipe or opening, and an air-jet opposite the outlet and above the inlet, but directed downwardly at an angle to the surface of sand, substantially as hereinafter more specifically described and then definitely claimed.

Figure 1 is a vertical longitudinal section of my improved sander. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a side elevation showing the sander fitted and provided with a hand-valve. Fig. 4 is a vertical longitudinal section of a modification of the sander. Fig. 5 is a vertical cross-section of the same.

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

A is a chamber provided with an opening B at the top and an outlet C at one side. Opposite the outlet C is an opening F, with a removable cap D, which is secured to the body of the chamber by screw-bolts or other suitable fastenings. This cap is shaped to project within the mouth of the opening. A packing-ring *a* is preferably provided to cause the cap to make an air-tight fit.

E is a shell, preferably arch-shaped, which is inserted through the opening F and fitted close up against the outlet C. The projection on the cap D fits within this arch-shaped shell, being suitably shaped for that purpose. It thus prevents any twisting of the shell within the chamber. This shell is so shaped as to leave a narrow opening *b* at its lower side. The sides of the chamber A are bulged or curved outwardly, so as to furnish free passage-way around the shell E for sand entering the opening B. The shell E, with the sides of the chamber, thus practically serve to form two branches of the sand-supply pipe B', which is screwed into the opening B,

the real inlets into the chamber A being at *c*. The sand thus brought into the chamber A rises very slightly within the shell E, practically lying therein at a level a little above the opening *b*.

The bottom of the chamber A is provided with a plug G. The cap D has a hole *d* bored part way through it and threaded to receive the compressed-air pipe H.

I is the air-jet of the sander, which communicates, as shown, with the hole *d*. This air-jet is located above the level of the opening *b*, but is directed downwardly at an angle of about eighteen to twenty degrees, so that the blast of air therefrom will strike the surface of the sand and raise it in a cloud, which by the general movement of the air is carried out at the outlet C into the pipe J, leading to the rail.

The compressed-air pipe H is connected, preferably, with the air-brake system of the locomotive or other rolling-stock with which the sander may be used and must of course be provided with means for controlling the passage of the compressed air therein.

The precise angle and location of the air-jet I will depend somewhat on the size and shape of the chamber A and must in different cases be found by experiment; but the location and position shown will be found substantially correct for a sander of the proportions indicated.

In practice it may be found desirable to remove the plug G and replace it by a pipe K, connected by a V-coupling with the pipe J. This pipe K is provided with a valve L.

When it is desired to drop on the rail a larger supply of sand than that discharged by the air-jet I, the valve L may be opened, when the sand will run freely from the bottom of the chamber A through the pipes K and J to the rail. This valve L may be of any desired construction.

In practice of course a sander will be located at each side of the locomotive, and means will be provided for operating the valves L at opposite sides of the locomotive simultaneously.

In Figs. 4 and 5 I illustrate a modification of the device operating on the same principles as the form shown in Figs. 1 and 2. In this the supply-pipe B' connects directly with



the inlet *c*, which is located below the outlet C, either opposite the air-jet I, as shown in full lines, or at other points in the sides of the chamber, as shown in dotted lines. The shell E is located below the outlet C and serves merely to restrict the surface of the sand exposed to the air-blast, though it might in many cases be dispensed with entirely.

Other modifications might be made in following the same principle of operation—viz, that of continuously feeding the sand to the lower portion of a chamber and directing an air-blast downwardly at an angle upon its surface to discharge it from an outlet which is itself located above the level of the sand in the chamber.

It will be noticed that the lower portion of the chamber A is elongated between the air-jet and the outlet, so that there is no danger of the sand being blown by the air-jet violently against the portion of the chamber near the outlet, which would gradually wear it away. The only parts liable to wear are the sides of the opening in the shell, and as the shell is made of sheet metal and is removable the shell may be easily and cheaply replaced at any time.

What I claim as my invention is—

1. A sander having an inlet, an outlet, a diagonally-arranged air-jet, and a central sand-chamber, the outlet being on one side of said chamber and the air-inlet on the other side thereof, the surface of the sand being normally below the level of the outlet, and the said air-inlet arranged to direct an air-blast diagonally downwardly on the sand and toward the outlet substantially as and for the purpose specified.

2. A sander having an inlet, an outlet, a diagonally-arranged air-jet, and a central sand-chamber restricted in width above said inlet, the outlet being on one side of said chamber and the air-inlet on the other side thereof, the surface of the sand being nor-

mally below the level of the outlet, and the said air-inlet arranged to direct an air-blast diagonally downwardly on the sand and toward the outlet, substantially as and for the purpose specified.

3. A sander having an inlet, an outlet, a diagonally-arranged air-jet, a central sand-chamber, and a removable shell restricting the width of said chamber above said inlet, the outlet being on one side of the said chamber and the air-inlet on the other side thereof, the surface of the sand being normally below the level of the outlet, and the said air-inlet arranged to direct an air-blast diagonally downwardly on the sand and toward the outlet, substantially as and for the purpose specified.

4. As a sander a chamber provided with an opening at the top, and an outlet at one side, in combination with a shell open at the bottom and extending completely across the chamber from the outlet; and an air-jet located opposite the outlet but above the bottom of the shell and directed downward at an angle to the surface of the sand in the chamber, which chamber is so shaped as to provide a passage-way for the sand on the side of the said shell, substantially as and for the purpose specified.

5. As a sander the chamber A, shaped as shown and provided with the opening B, the outlet C, and the opening F, in combination with the removable shell E, with openings *b* extending through the chamber from the opening F, to the outlet C, and the removable cap D, closing the opening F, and provided with the air-jet I, substantially as and for the purpose specified.

Smith's Falls, Canada, April 6, 1899.

JOHN BIRD WILSON, JUNR.

In presence of—

NETTIE REBECCA WICKWARE,  
HARRY ANSON LAVELL.