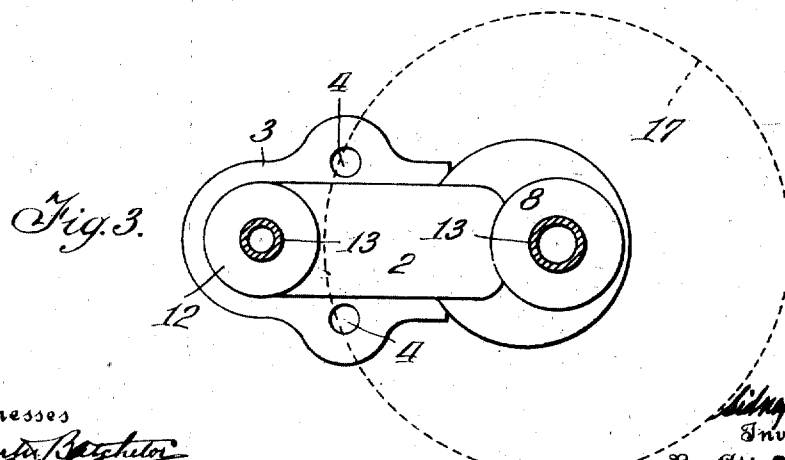
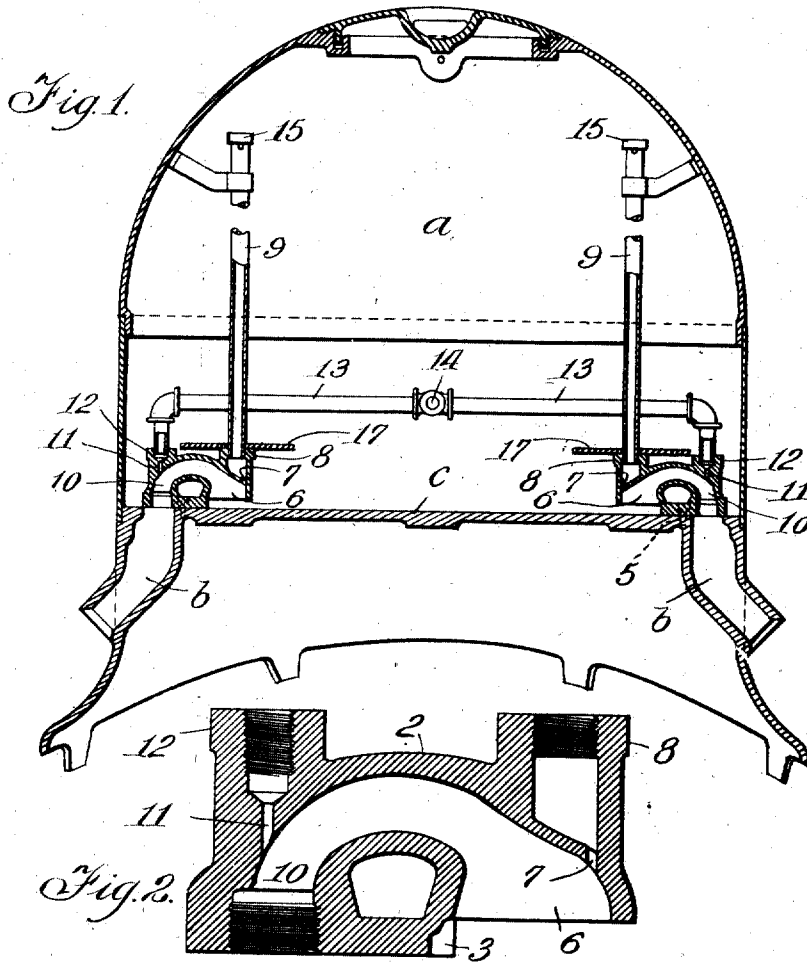


S. S. UNDERWOOD.
 TRACK SANDER.
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1,000,055.

Patented Aug. 8, 1911.



Witnesses
Arthur Richter
Ed. [unclear]

S. S. Underwood
 Inventor
 By Attorney
Oliver W. [unclear]

UNITED STATES PATENT OFFICE.

SIDNEY SMITH UNDERWOOD, OF MONTREAL, QUEBEC, CANADA.

TRACK-SANDER.

1,000,055.

Specification of Letters Patent.

Patented Aug. 8, 1911.

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To all whom it may concern:

Be it known that I, SIDNEY SMITH UNDERWOOD, a citizen of the United States of America, residing in Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Track-Sanders; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates more particularly to track sanders of the type shown in United States Patent No. 959596 in which a supply of free dry air is mingled with the sand to facilitate expulsion of same from the sand box by the air blast.

The present improvements comprise first arranging a simple casting presenting base flanges for securing it in place and, so as to be in close operative relation with the commingling chamber formed therein, the sand inlet thereto, the free air inlet, the blast orifice and the discharge outlet from such chamber and the relation being such that the blast orifice is in immediate proximity to the sand and free air in the chamber and in rear of the discharge outlet but in advance of such sand and free air; second, the arrangement of means for supporting the body of sand above the point where it is drawn from the heap on its way to the discharge outlet; and, third, the special form of the casting, which embodies the commingling chamber with its inlets and outlet, to facilitate its construction and ready application to the ordinary locomotive and electric car sand boxes at present in use.

For full comprehension, however, of the invention reference must be had to the accompanying drawings in which—

Figure 1 is a vertical transverse section of a locomotive sand box showing my improvements applied thereto; Fig. 2 is an enlarged detail vertical section of the casting embodying the commingling chamber, air inlets, and discharge outlet; and Fig. 3 is a plan view of such casting.

In applying my improvements to a locomotive sand box *a* of the well known form as shown in Fig. 1 I place my improved commingler device or casting so as to communicate with the discharge outlets *b* from the floor *c* of such box and dispose the compressed air or blast supply connections and free air supply preferably as shown and hereafter described.

The commingler device as stated com-

prises a single integral casting 2 preferably of arched tubular form with a base 3 pierced at 4 to allow of its being readily secured in place by screw bolts 5, and presenting a sand inlet 6 at the bottom of one end, preferably of hood formation overhanging such inlet, which faces the floor of the sand box and communicates with the latter through the space between the edge of the hooded end portion and the floor of the box, a free air orifice 7 in the top above the sand inlet close to the end wall and preferably surrounded by a boss or nipple formation 8 tapped to receive the free air supply pipe 9, a discharge outlet 10 in the bottom of the opposite end and a blast orifice 11 in the top immediately above and in a vertical line coinciding with the axis of the discharge outlet, such orifice leading through a boss or nipple formation 12 tapped to receive the air pressure or blast supply pipe 13.

In the present instance, where as before mentioned the device is shown as applied to the well known form of locomotive sand box, a commingler device is arranged in connection with each discharge outlet of the sand box the commingler being bolted to the floor of the box in such position that its discharge end fits over and communicates with the outlet *b* of the box and it will be noted that the blast orifice 11 of the commingler is most advantageously arranged above and in vertical line with the coinciding axes of the commingler and sand box outlets and while in rear of the outlet is yet in advance of and in close proximity to the commingled sand and free air with the decidedly improved result that the dried sand at the outset of its travel is subjected to the maximum suction and propulsive effect of the blast.

The present application of my improvements shows of course two blast supply branch connections 13 leading from a common source 14, and independent free air supply pipes 9 with slitted upper ends and regulating caps 15, but it is obvious that such arrangement of free air and pressure supply connections may be varied to suit different applications of the commingler devices.

A further improvement as before mentioned consists in arranging means for supporting the body of sand above and immediately adjacent the point where it is drawn from the heap and in the present case I have shown a support or bracket preferably in

the form of a disk 17 centrally perforated to enable it to be fitted over the free air supply pipe and rest upon the boss 8 of the commingler casting, so that it supports the body of sand above it and naturally avoids all chance of caking or blocking at the point where it is drawn from the main heap and discharged by the blast.

It is to be noted that by making the hooded sand inlet end as shown, an extensive semi-annular horizontal slot or opening is formed between the edge of the circular hooded end and the floor of the sand box and such slot or opening can be of such a diminished height as to be less in width than the interior passageway and so prevent all possibility of large objects, such as pebbles, &c., that might be in the sand, entering the interior or blocking any single restricted circular inlet such as found in most sanders.

I claim:

1. In a track sander, an air and sand commingler device in the form of a single casting presenting a commingling chamber, a sand inlet, a free air inlet distinct from the sand inlet, a passage the outer portion of which is adapted to receive a blast supply pipe and the inner portion constituting a blast orifice, and a discharge outlet, with means for securing the device in place.

2. In a track sander, an air and sand commingler device of hollow arch form having a base portion and terminating in a horizontal plane above the floor level so as to present a hollow hooded portion the horizontal edge of which surrounds an inlet opening facing the floor of the sand box and communicating with the sand box through the space between such horizontal edge of the hooded portion and the floor of the box.

3. In a track sander, a commingler device in the form of a single casting presenting base flanges for securing it in place and providing a commingling chamber for sand and free air, an inlet for sand and a free air orifice at one end, a discharge outlet and blast orifice at the opposite end, the

blast orifice being located above and in line with the discharge outlet, and tapped nipple formations surrounding said orifices with which the free air and blast supply pipes are connected.

4. In a track sander, the combination with a sand box having a pair of discharge outlets in the bottom thereof, of a pair of commingler devices one located at each discharge outlet and presenting a commingling chamber, a sand inlet, a free air inlet, a blast orifice, and a discharge outlet communicating with the sand box outlet, a free air stand pipe for each free air inlet, a main motive fluid supply and branch connections therefrom to the blast orifice of each of the commingler devices.

5. In a track sander, the combination with a sand box and a commingler device having a hooded end portion with a sand inlet thereto facing the floor of the box and communicating with the box through the space between the edge of such hooded end portion and the floor of the box,—of a ledge or bracket located above said hooded end portion and projecting in a horizontal plane beyond the edge of same to support the body of sand above said ledge.

6. In a track sander, the combination with a sand box, a commingler device having a sand inlet thereto and an air supply connected with said commingler, of a flat plate perforated to accommodate said supply pipe and resting on said commingler device to support the sand above said inlet.

7. In a track sander, the combination with a sand box, a commingler device having a sand inlet thereto and an air supply pipe connected with said commingler, of a disk centrally perforated to fit said supply pipe and resting on said commingler device to support the sand above said inlet.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

SIDNEY SMITH UNDERWOOD.

Witnesses:

FRED J. SEARS,
JOHN A. O'KEEFE.