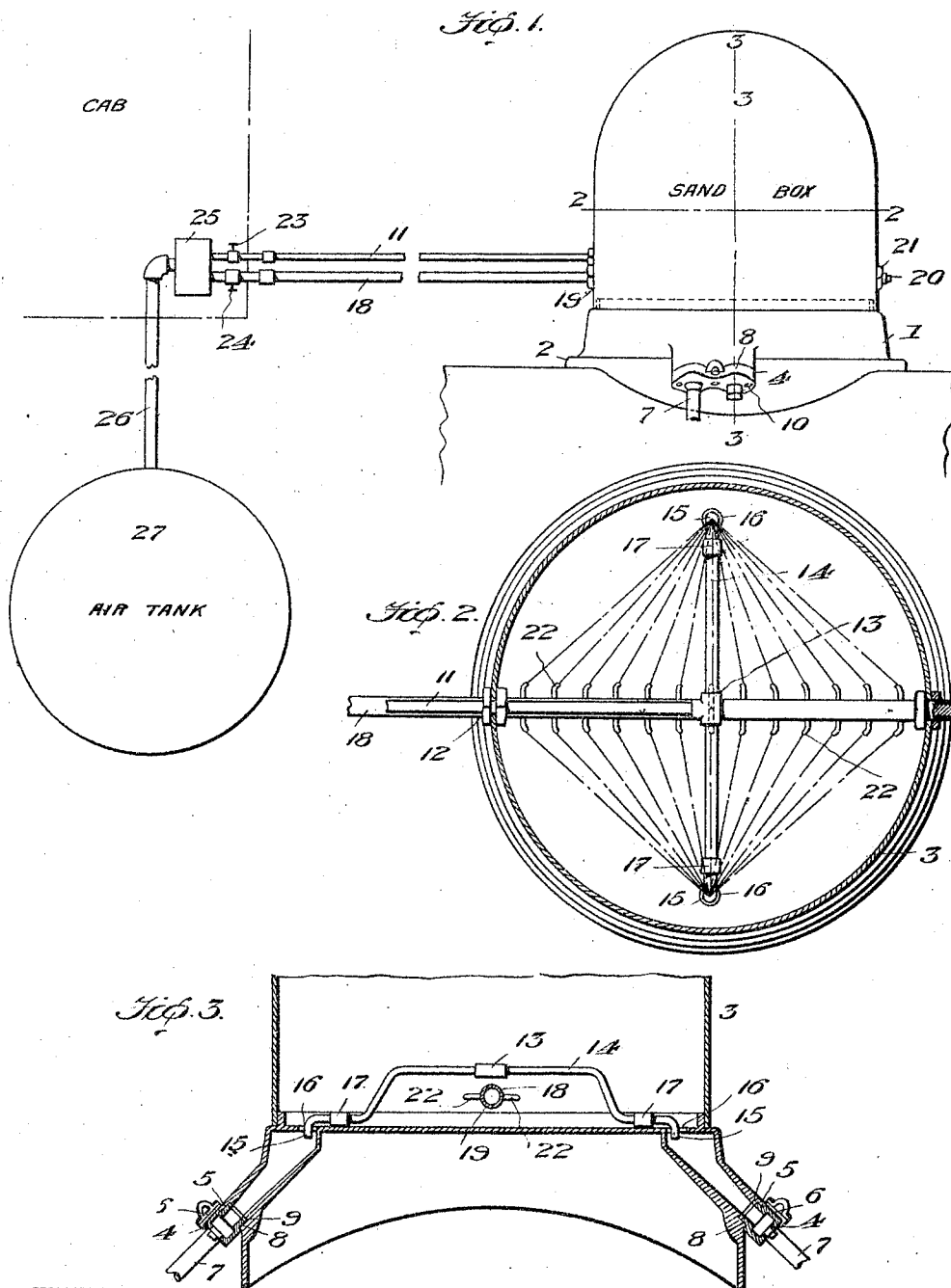


M. J. FOWLER.
 TRACK SANDER.
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1,029,284.

Patented June 11, 1912.



WITNESSES

W. H. H. H.
M. J. Fowler

INVENTOR

Mack J. Fowler
by Geo. H. H. H. Attorney

UNITED STATES PATENT OFFICE.

MACK J. FOWLER, OF ROANOKE, VIRGINIA.

TRACK-SANDER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MACK J. FOWLER, a citizen of the United States, residing at Roanoke, county of Roanoke, and State of Virginia, have invented certain new and useful Improvements in Track-Sanders, of which the following is a specification.

This invention relates to track sanders.

The sand in track sanders used on locomotives frequently refuses to flow and becomes massed and lumped in the sand box; further, the couplings or joints between the sand traps and the sand box are subject to heat and moisture and become loose and unpacked in the course of time.

This invention has for its object, first, the provision of a novel air blast arranged in the sand box in a new manner adapted for control from any suitable point, such as the engineer's cab, whereby the sand in the box may be disturbed or agitated and forced toward the take-off or sand pipes, thus insuring proper feed of the sand by gravity or forced blast through said pipes, and the invention in this respect has for its primary purpose the agitation of the sand and its direction to the sanding pipes, rather than the forcing of the sand through those pipes, and my improvements thus overcome the massing or lumping effect of the sand in the sand box so that the engineer at any time can inject a blast into the sand in the box to loosen it and to insure its feed.

The second object of my invention is the provision of a new connection or coupling and packing between the sand trap and the sand box, whereby heat and moisture cannot effect the packing or disturb the integrity of the coupling or connection.

In carrying out the second object of the invention I provide a recess in boss of sand box, to which the sanding traps are secured, which enters the boss on sand box in such a manner that condensed steam, water, etc., will be shed by gravity without obtaining access to the packing.

Another object of the invention is the provision of a sand trap air blast cleaner, whereby an air blast may be directed into the sand trap to blow out any sand clogging the same whenever such action becomes necessary and to insure the feed of the sand through the sanding pipes if it does not flow by gravity.

One embodiment of the invention which is set forth hereinafter and delineated in the

drawings is to be considered as illustrative, rather than restrictive, of the scope of the invention.

In the accompanying drawings:—Figure 60 1 is a diagrammatic view showing my invention applied; Fig. 2, a cross-section on the line 2—2 of Fig. 1; and Fig. 3, a vertical cross-section on the line 3—3 of Fig. 2.

The sand box base, 1, is adapted to seat on 65 the top of the locomotive boiler in a well known manner, this casting being provided with an annular flange, 2, to which the shell, 3, of the sand box is secured. The sand box base, 1, has at suitable points thereof, preferably its opposite sides, sand traps, 4. One 70 or more of these may be located at each point where but one is shown in the drawings, according to the number of sanding pipes which are used, and the exact formation of this trap is immaterial save its construction at its upper part. Here the sand box is recessed at 5 in the boss thereof. The trap, 4, to which the sanding pipe, 7, is connected by screw-threads, is provided with a 80 projecting part, 8, fitting and received in the recessed part, 5. Between the adjacent surfaces of the parts, 5 and 8, is located a gasket, 9. Suitable bolts or machine screws, 10, pass through apertures in the trap, 4, and 85 into the boss of the sand box, enabling any desired tightness of seating of the trap, 4, against the gasket, 9.

The slope of the sand trap, 4, and the fact that the part, 8, is received in a socket in the 90 boss of the sand box, causes any water or water of condensation to be shed from the sand box over the trap without having any access to the gasket, 9, and similarly, the combined effects of heat and water on the 95 gasket are thus avoided.

Leading from the engineer's cab or other suitable point is a pipe, 11, which enters the sand box at 12 and extends to the central part thereof, being there provided with 100 a union or T, 13, and with a cross pipe, 14, having nozzles, 15, entering the sand holes, 16, and directed into the sand traps. The nozzles, 15, may be suitably detachably connected to the pipe, 14, by couplings, 17. 105

Leading from the engineer's cab or other suitable point of control is a pipe, 18, which enters the sand box at 19, being there provided with a suitable bushing and lock-nuts and extends substantially diametrically 110 across the sand box just above the bottom thereof, its other end being closed by a re-

movable plug, 20, and connected to the sand box by the lock nuts, 21.

Secured to the opposite sides of the pipe, 18, are nipples or nozzles 22 which are so arranged and formed that the air blasts issuing therefrom are directed in lines which will substantially converge at or near the sand holes 16, as indicated by dotted lines, these nipples or nozzles being adapted to direct the air in a generally horizontal plane or direction just above the bottom of the sand box. Some of the nipples or nozzles, more especially the ones disposed toward the end portions of the pipe 18 where it is located in the sand box, may be so arranged that they will direct their blasts toward the sides of the sand box rather than at or about the opening 16 to thus insure a more thorough agitation or disturbing of the sand within the sand box.

I may substitute for the nipples 22 perforations in the sides of the pipe 18 and may so locate them that the blasts will be delivered in the same manner as they are delivered by the nipples 22 and I consider such modification within the scope of my invention in this respect.

The pipes 11 and 18 are provided with valves 23 and 24, whereby the air may be controlled. From a common coupling 25, joining the pipes, a pipe 26 leads to the air tank or reservoir 27.

In substitution for the valves 23 and 24, I may employ a single valve, for instance, a three-way valve, which would, when turned to one position, permit the air to pass into pipe 11 and when turned to another position, would cut off the air to that pipe and admit it to pipe 18, and when in still another position, close communication between the pipe 26 and the pipes 11 and 18.

Any suitable valve or controlling device may be employed for admitting the sand to the sand holes 16 or shutting it off therefrom so that a gravity feed of the sand may be employed, but whenever it is necessary to force the feed, the valve 23 may be opened to admit the air pressure to the nozzles 15. Primarily, however, the purpose of the nozzles 15 and pipes 11 and 14 is to clean the sand traps by an air blast whenever they become clogged or the sand does not feed satisfactorily.

When the sand cakes or lumps in the sand box, as is frequently the case, the valve 24 or other controlling device for the pipe 18, is opened to admit the air pressure to the nipples or nozzles 22. A series of air blasts

are then directed from the central part of the sand box in opposite directions through the body of sand contained within said box thoroughly agitating and stirring up the sand, breaking any cakes or lumps thereof and urging and forcing the sand toward the sand holes 16 so that the sand will be ready to feed by gravity through the sand pipes 7. Should the nipples 22 or the perforations which may be used in lieu thereof, become clogged with sand, the pipe 18 may be blown out by removing the plug 20 and admitting the air pressure to the pipe 18.

So far as I am aware, I am the first to admit air blasts at the central part of a sand box and to direct or distribute said blast on opposite sides of said central part so as to agitate and force the sand toward both sides of the sand box and toward the sand holes leading to the sanding pipes. It will be observed that the admission of the numerous air blasts in the lower part of the sand box, just above the bottom thereof, undermines the sand and insures its proper feed.

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

1. The combination with a sand box having sand holes at the sides thereof for the exit of the sand, of means for simultaneously admitting a plurality of air blasts into the sand in the central part of the sand box at points entirely separated from the sand holes aforesaid and directing such blasts in opposite directions through the intervening sand toward the respective exit holes aforesaid for the purpose of agitating the intervening sand and directing it toward the respective holes.

2. The combination with a sand box having sand holes on opposite sides thereof for the exit of the sand, of an air pipe centrally extending crosswise of the sand box in the same general plane as said sand-holes and provided on opposite sides with a plurality of outlets disposed at intervals of its length and arranged so that they will simultaneously distribute air blasts into the body of the sand and toward the respective sand holes aforesaid.

In testimony whereof, I hereunto affix my signature in presence of two witnesses.

MACK J. FOWLER.

Witnesses:

W. C. BURNS,
J. D. PERDUE