W. H. WHITE.

SAND TRAP.

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1,086,964.

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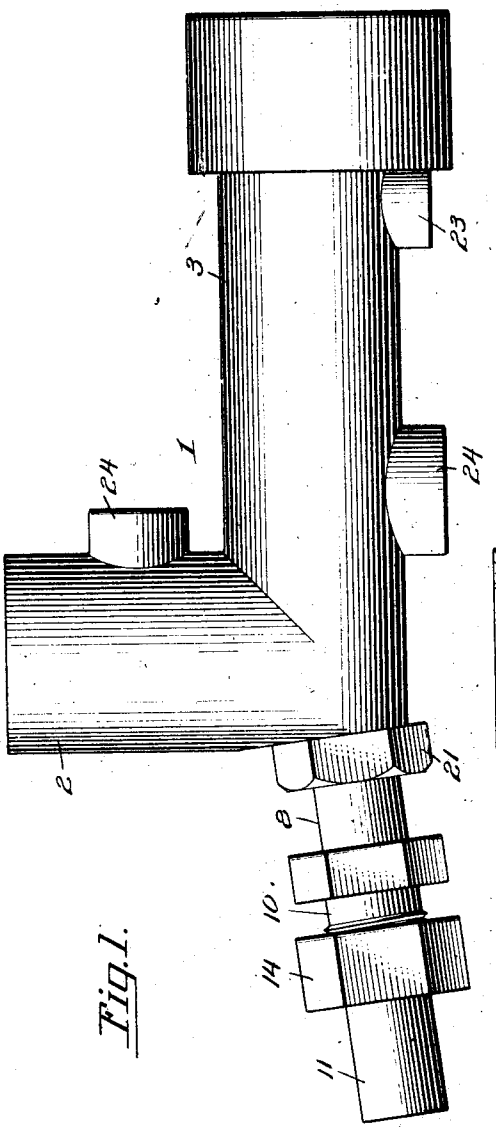


Fig. 1.

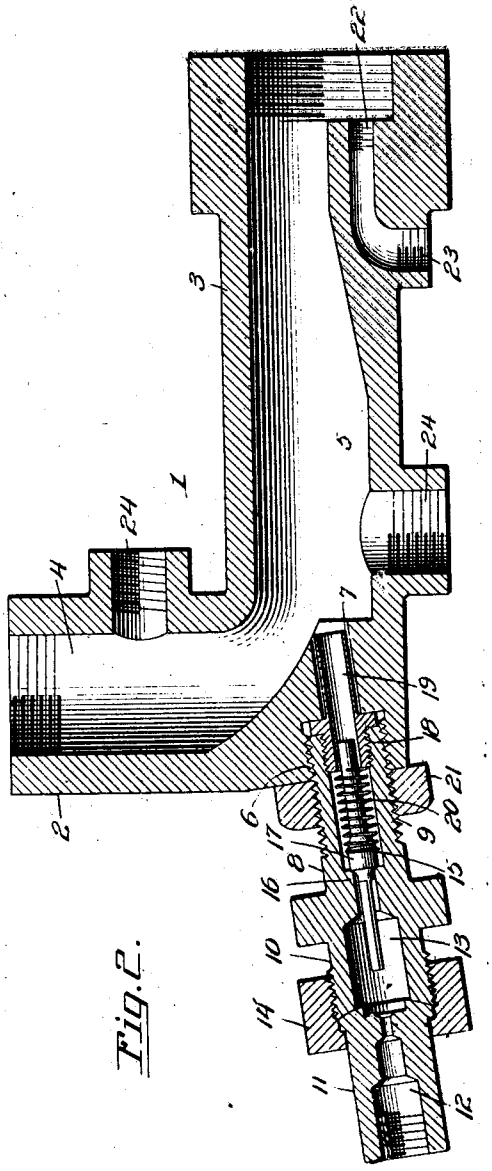


Fig. 2.

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SAND-TRAP.

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To all whom it may concern:

Be it known that I, WILLIAM H. WHITE, a citizen of the United States, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented new and useful Improvements in Sand-Traps, of which the following is a specification.

The invention relates generally to an improvement in sanding devices for locomotives, and particularly to an element of such devices known as the sand trap, wherein the sand is lodged by gravity from the source of supply, and from which it is forced through the feed tube to the track.

The main object of the present invention, is the provision of a sand trap and air feeding means therefor, with the latter adjustable with relation to the trap proper so as to control the feeding of the sand as may be desirable.

A further object of the invention is the provision of a trap in which the sand channel is so formed as to prevent the gravity feed of the sand therethrough, while at the same time affording little obstruction to the movement of the sand under the influence of the air blast.

A further object of the invention is the utilization of an air blast operating through a portion of the trap and beyond the sand channel therein, which blast is utilized when necessary as a cleanout medium for the feed tube beyond the trap, whereby said tube may be at all times maintained in effective condition for the proper movement of the sand therethrough in sanding the track.

The invention in the preferred form of details, will be described in the following specification reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a side elevation of the improved trap and connections. Fig. 2 is a longitudinal section of the same.

The improved trap, which aside from the details hereinafter described may be in any form, preferably comprises an L-shaped body 1 having an upright section 2 designed for connection to a suitable pipe leading from the source of supply, and a lateral section 3, the terminal of which is designed to be connected in any usual or preferred manner to the sanding tube for the delivery of the material to the track.

The body is interiorly and longitudinally cored to provide what I term a sand channel 4, the bottom wall of this channel from a point within the upright of the body to a point a slight distance from the outlet end of the body being on a downward curved plane as at 5, the curved portion of the channel forming a trap to prevent the travel of the sand through the channel by gravity or under the jars to which the body is subjected in the travel of the engine. The body 1 at approximtely the juncture of the upright and lateral portions of the channel is cored at 6 and interiorly threaded, the relatively inner portion of the opening thus formed, or that portion immediately joining the channel, being of reduced diameter as at 7.

The openings 6 and 7 are designed to receive the blast pipe for feeding the sand from the trap, and one of the essential features of the present invention is the adjustability of this pipe connection to provide for controlling the blast. The blast pipe or terminal includes a section 8 comprising a threaded end 9 for connection with the cored opening 6 and a somewhat enlarged exteriorly threaded end 10 for connection with the air pipe leading from the source of air supply. The latter end 10 is preferably connected with the air pipe by a connector 11 having a longitudinal bore 12 terminating in a comparatively small opening or outlet 13, a union nut 14 joining said connector to the end 10 of the section in the usual manner. The pipe section 8 is longitudinally cored at 15, a transverse partition 16 being arranged in the opening to form a valve seat, said partition having a comparatively small central opening to reduce the blast. A valve 17 is operable within the bore 15 and coöperates with the seat, to permit free opening of the valve under the blast in one direction, but to prevent the entrance of the sand into the blast pipe section. The wall of the bore 15 at the terminal of the section 9 is interiorly threaded at 18 to coöperate with the threaded end of a jet tube 19, the latter being of a size to freely fit within the reduced portion 7 of the opening in the body. A coiled spring 20 encircles a stem projecting from the valve 17, and bears against that portion of the jet tube threaded within the blast pipe, said spring serving to normally hold the valve on its seat. The exteriorly threaded portion of the end 9 of the blast pipe provides for the introduction of the delivery end of

the jet tube at different or adjustable points within the sand channel, and a lock nut 21 is arranged to coöperate with the threaded portion 9 of the pipe and the body of the trap to secure the parts in such adjusted position.

An auxiliary pressure channel 22 is formed in the body opening into the delivery end thereof below the delivery end of the sand channel, said pressure channel entering the body at a point adjacent its forward end, the entrance opening 23 being interiorly threaded to provide for connecting an air pipe leading from any suitable source of air under pressure. The trap is also formed at appropriate points, as in the upright section and in the lower section of the trap bottom of the channel, with openings 24 adapted to be closed by ordinary plugs, and providing a means whereby the sand channel may be cleaned by any suitable tools, when such may become necessary.

The important feature of the present invention resides in the adjustability of the blast with respect to the trap, gained through the means provided for inserting the delivery end of the blast nozzle or jet at different distances into the sand channel. It will be obvious that if the delivery end of the jet is located well within the channel, that is, in close proximity to the opposite wall, the feeding effect of the blast on the sand will be materially reduced, while if the delivery end of said jet is located at practically the inner limit of the opening 7, the maximum effect of the blast will be had. The present invention therefore by providing a means whereby the blast pipe may be adjusted at any desired point intermediate, as well as at the extreme positions noted, provides for the control of the sand feed under the blast in a simple and effective manner.

Another feature of the invention is the provision of the auxiliary blast by which the feed tube beyond the trap may be cleaned of obstruction and maintained in the proper condition, the important essential of this detail residing in the utilization of the blast without in any way affecting the sand in the trap. The jet nozzle of the sand blast opens into the trap at a slight upward angle, thereby directing the sand practically longitudinally of the channel, and thus avoiding to a material extent the usual cutting of the trap body by the sand.

What is claimed, is:—

1. A sand trap formed with a sand channel, a blast pipe directing the blast at an angle to the channel, and means operative from beyond the trap for adjusting said blast pipe to vary the distance between the end thereof and the upper wall of the channel.

2. A sand trap formed with a sand channel, a blast pipe directing the blast across the channel and against the upper wall thereof, and means operative from beyond the trap for varying the projection of the blast pipe within the channel whereby to adjust its distance from the said upper wall of the channel.

3. A sand trap formed with a sand channel having the lower portion thereof downwardly curved to provide a trap, and a sand blast opening into the channel through the curved bottom thereof, said blast being directed against that wall of the channel opposing the curved bottom.

4. A sand trap formed with a sand channel having the lower portion thereof downwardly curved to provide a trap, a sand blast opening into the channel through the curved bottom thereof, said blast being directed against that wall of the channel opposing the curved bottom, and means for adjusting the blast with relation to the channel to vary the distance of the delivery end thereof from the channel wall opposite the curved wall.

5. A sand trap formed with a sand channel, a blast pipe connected therewith, and a clean-out blast connected to the trap and closed against the channel.

6. A sand trap formed with a sand channel, said trap being formed with an auxiliary blast channel opening through the trap beyond and out of communication with the sand channel.

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

WILLIAM H. WHITE.

Witnesses:
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