(No Model.) 2 Sheets—Sheet 1.

J. J. WHEAT.

TRACK CLEANER.

No. 443,247. Patented Dec. 23, 1890.

FIG. 1.

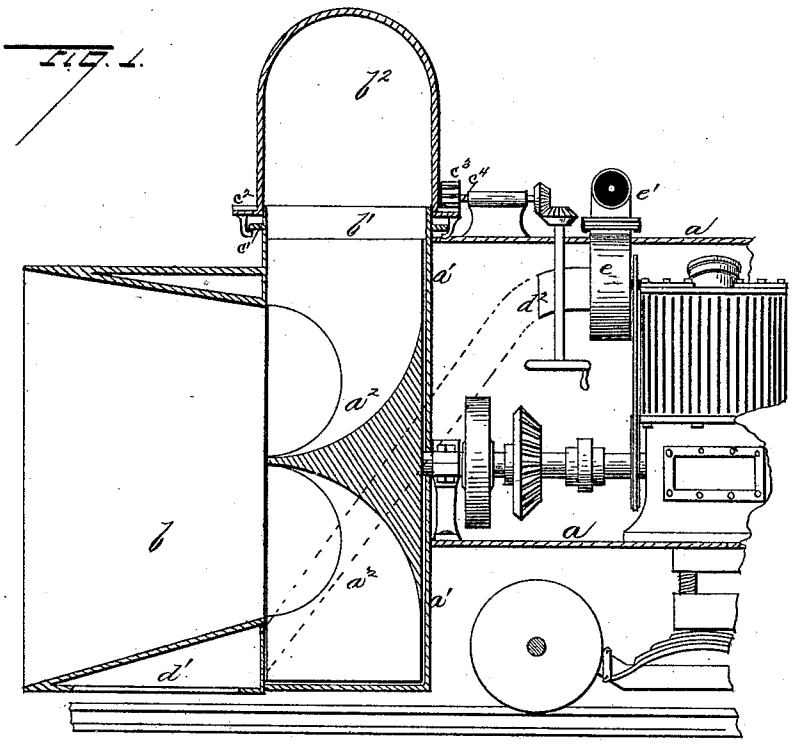
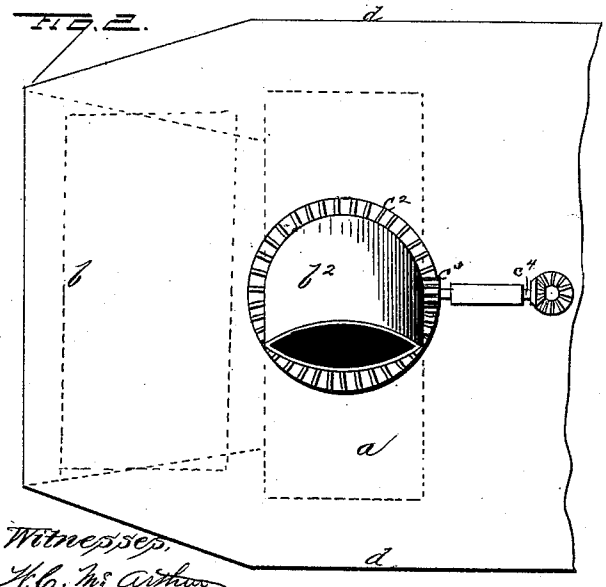


FIG. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

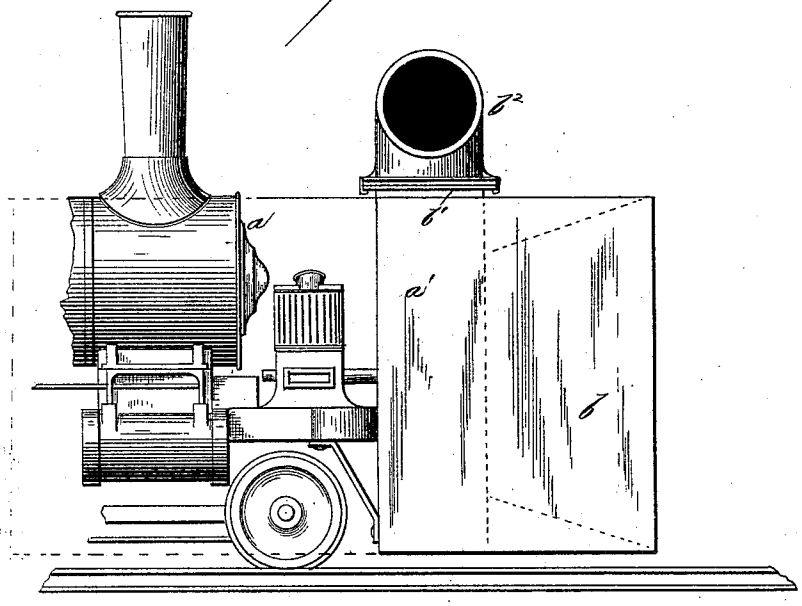


Fig. 4.

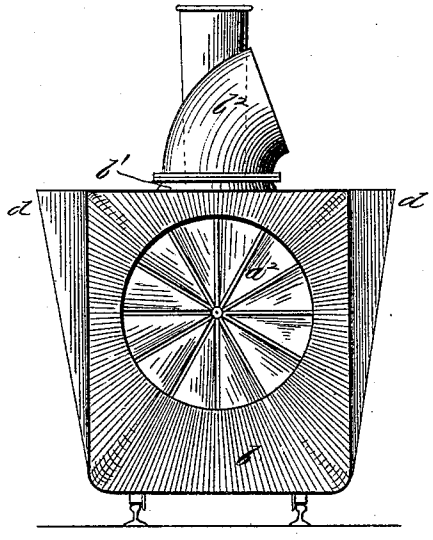
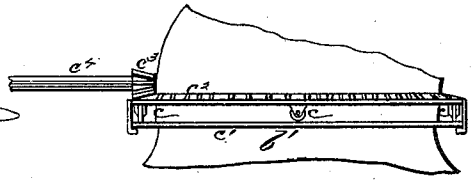


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN J. WHEAT, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF THREE-FOURTHS TO NATHAN M. NEELD, THOMAS F. THORNE, AND FREDERICK H. KILBOURN, OF CHICAGO, ILLINOIS.

TRACK-CLEANER.

SPECIFICATION forming part of Letters Patent No. 443,247, dated December 23, 1890.

Application filed August 31, 1885. Renewed May 29, 1890. Serial No. 353,640. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. WHEAT, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Track-Cleaners, of which the following is a specification, to wit:

This invention relates to railway-track cleaners; and it consists in certain peculiarities of the construction and arrangement of the same, substantially as will be hereinafter more fully described, and pointed out in the claims.

In order to enable other skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of my device applied to a car especially constructed for this purpose. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of my invention applied to an ordinary locomotive-engine. Fig. 4 is a front elevation of the device, and Fig. 5 represents the manner of controlling the direction of the discharge-pipe.

a represents a car or frame of any desired construction, upon the forward end of which is secured a casing a', in which revolves an exhaust-fan a^2 of suitable size and form for the purpose in view. The outer side of the casing is cut away to admit the snow or other obstruction, and to this side of the casing is secured a forwardly-projecting gatherer or guide-shell *b*, which serves to collect the air, snow, &c., and guide or deliver it to the fan. The upper side of the fan-casing a' is formed with an outlet b', on which is placed a discharge pipe or spout b^2, as shown.

It will be understood that when the fan is rapidly revolved the air is exhausted from in front of the device, and with it the snow, sand, or other obstruction is drawn into the fan and forcibly discharged through the pipe b^2. In most instances it will be sufficient to throw the snow, &c., off at one side of the track; but in city streets and in passing houses this is not practical, and to enable it to be delivered close alongside the track, or at any other point desired, I swivel this discharge-pipe and provide suitable means by which the attendant may at will throw the discharge to one side or the other and either at right angles or back alongside the track, as found desirable in use. This may be done in various ways; but I have herein represented the discharge-pipe as provided with small friction-wheels *c*, which support it and travel upon a flange c' on the casing. The discharge is also provided with a toothed gear c^2, with which meshes a pinion c^3 on a shaft c^4, which is extended within easy reach of the operator and by means of which he may direct the discharge at will without stopping or in any way interfering with the work.

In cutting into a bank of snow the fan will of course remove and throw off any snow which may be in front of its guide-funnel or gatherer, and a clear track be thus cut; but the snow at the side is liable to slide down upon the track either during or after the passage of the train, and to prevent this I form the sides of the funnel or gatherer and casing for a suitable distance flaring, or wider at the upper than at the lower edge, as at *d*, and this acts to press back and pack the wall of snow at the side and thus prevent its falling upon the track. The large funnel is carried within a few inches of the track-rails and will remove all snow of any considerable depth and likely to seriously block the passage of the train; but to remove such as may be left upon the rails, or for use in lighter snows, where the larger fan is not needed, I place beneath the large guide-funnel over each rail a hood or auxiliary gatherer or funnel d', which has a horizontal opening, as in Fig. 1. From each of these hoods a pipe d^2 extends around the large fan, and these two pipes are connected with a smaller exhaust-fan *e*, which is also provided with an adjustable discharge e', and through these hoods and fans the lighter snows, or residue left by the larger, is drawn off the rails, leaving a perfectly free track for the train.

I do not desire to confine myself to any particular mode of operating these fans. In Fig.

1 I have shown them placed upon a car built for their reception and operated by direct connection with an engine of well-known form. On the fan-shaft I have also shown a belt-pulley and a bevel-gear, either of which may be used to transmit motion from some other suitable power and located where desired.

In Fig. 3 I have shown the large fan attached to the front of an ordinary engine, such as are in common use upon railroads, and though I have here shown an auxiliary engine for driving this fan I may as well connect it to the main engine, either direct or by gearing or other well-known connection with the drive-wheels or axles, as may seem most desirable. In this figure I have not shown the auxiliary fan, as I do not desire to complicate the drawings, and its connection and use in this case are obvious from an inspection of Fig. 1. In any case, whether in use with the car of Fig. 1 or the engine of Fig. 3, I desire to use the flaring casing to press back and solidify the wall of snow on either side of the track and thus retain it in place. It is obvious that a car or engine having this exhaust-fan in use may be driven forward at fair speed, as the capacity of the fan is such as to remove the obstruction with sufficient rapidity for such forward motion. It will be obvious that an exhaust-fan drawing into it the loose particles of snow before they become pressed or packed will easily and rapidly discharge them through the adjustable pipe to any desired location and without any necessity for ramming or cutting the mass of snow, which thereby becomes much harder to remove. By reference to the drawings it will be seen that I form the adjustable discharge-pipe in such manner that it discharges at an upward angle and by this means am enabled to throw the snow out of a cut or over banks, &c., to any desired point, and this is important, as were this discharge to be made at right angles it would simply tend to place the snow in position to again fall upon the track and not remove it to the proper distance for utility.

The suction of the large fan is sufficiently strong to readily draw in all obstructions which may be within range of its gatherer or guide-casing, and the residue is entirely removed by the auxiliary suction. This latter is either in two separate gatherers, as just described, or in one large chamber having an opening extending clear across the track, and in this latter case all the snow is removed, not only from the track-rails, but also between them and on each side to the full width of the cross-ties, and I prefer this construction in consequence.

It will be understood that this machine is operated wholly by pneumatic force. The fan-blades do not cut the snow from the bank; but the outer ends of these blades, it will be seen, are covered, thus enabling the fan to create a vacuum in the flaring casing, by means of which the outside atmospheric pressure is made to drive the snow into and through the fan, and it is discharged entirely by such force and not by the contact with the fan. To accomplish this it is necessary to inclose the peripheral outer face of the fan and extend in front of it a gatherer, as shown.

I do not desire to be confined to the exact shape or angle of the flaring casing, as this is altered to suit and presses back the upper part of a bank of snow, so that it will not interfere with or be disturbed by the subsequent passage of trains. By thus pressing the snow back at the top by the successive passage of the cars it will be seen that the snow is by this incline pressed back substantially on the arc of a circle struck from or near the lower edge of the casing.

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

1. In a railway-track cleaner, an exhaust hood or chamber having a horizontal opening over the track-rail, in combination with an exhaust-fan connected with said chamber, substantially as and for the purpose set forth.

2. In a railway-track cleaner, the combination, with a main exhaust-fan provided with a guide-funnel and a discharge pipe or opening, of an auxiliary exhaust-fan connected to hoods or chambers suspended immediately over the track-rails, and also provided with a suitable discharge-opening, substantially as and for the purpose shown and described.

3. In a railway-track cleaner, an inclosing frame or case made flaring and wider at its upper edge, the sides inclining inwardly to a point at or near the rail, whereby the upper part of a snow-bank is packed, substantially as and for the purpose set forth.

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

JOHN J. WHEAT.

Witnesses:
W. C. McARTHUR,
F. STRATTON.