

No. 721,960.

PATENTED MAR. 3, 1903.

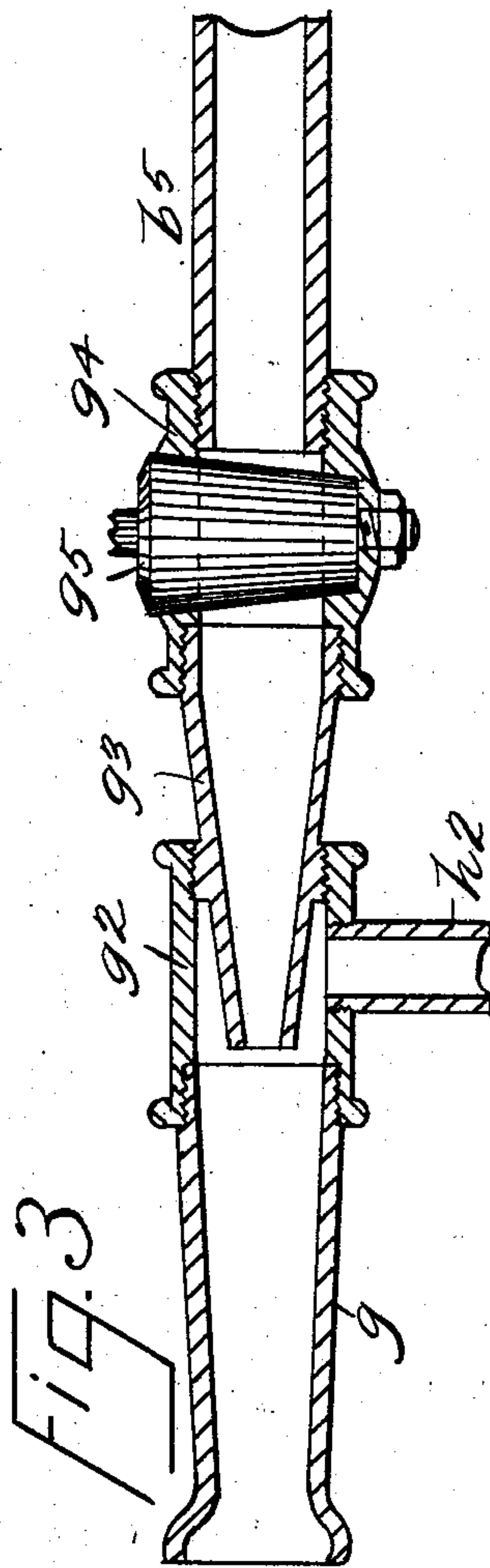
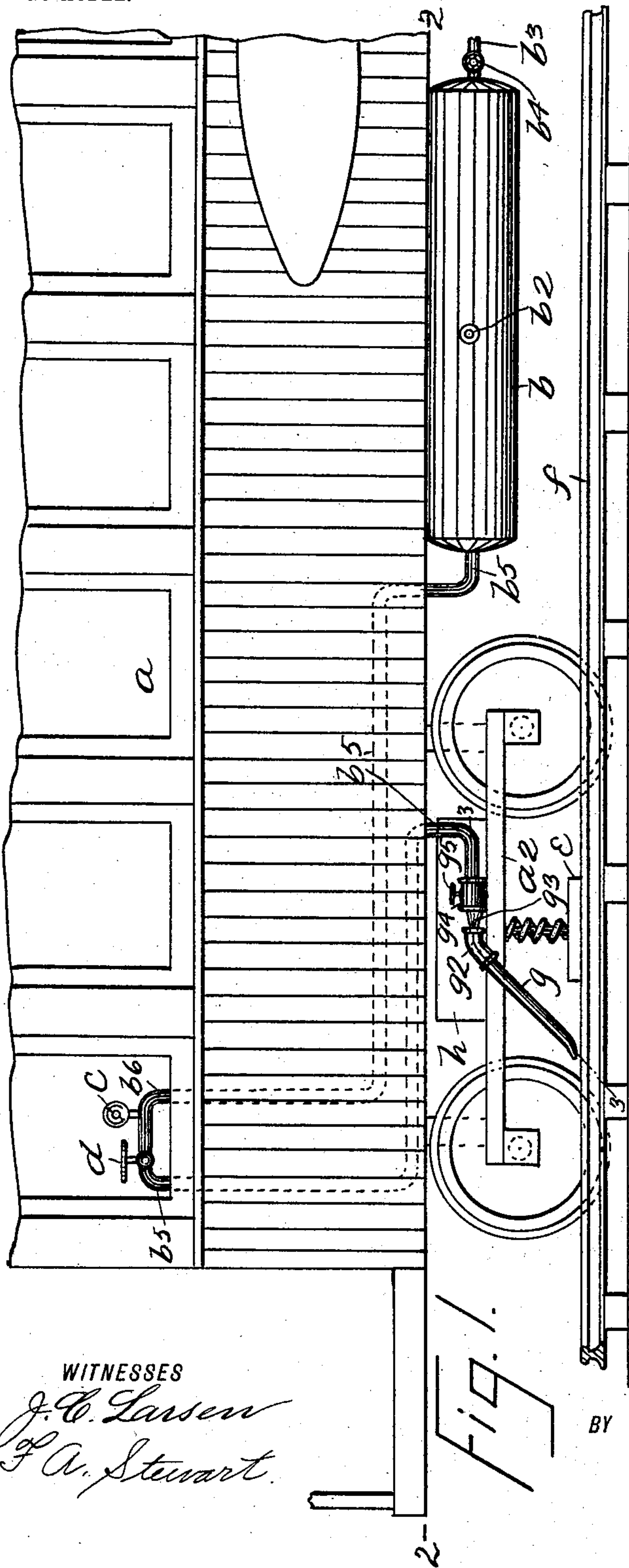
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MEANS FOR REMOVING SLEET, SNOW, AND ICE FROM THIRD RAILS.

APPLICATION FILED JAN. 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES

J. C. Larsen
F. A. Stewart.

INVENTOR

Peter Lindemann

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ATTORNEYS

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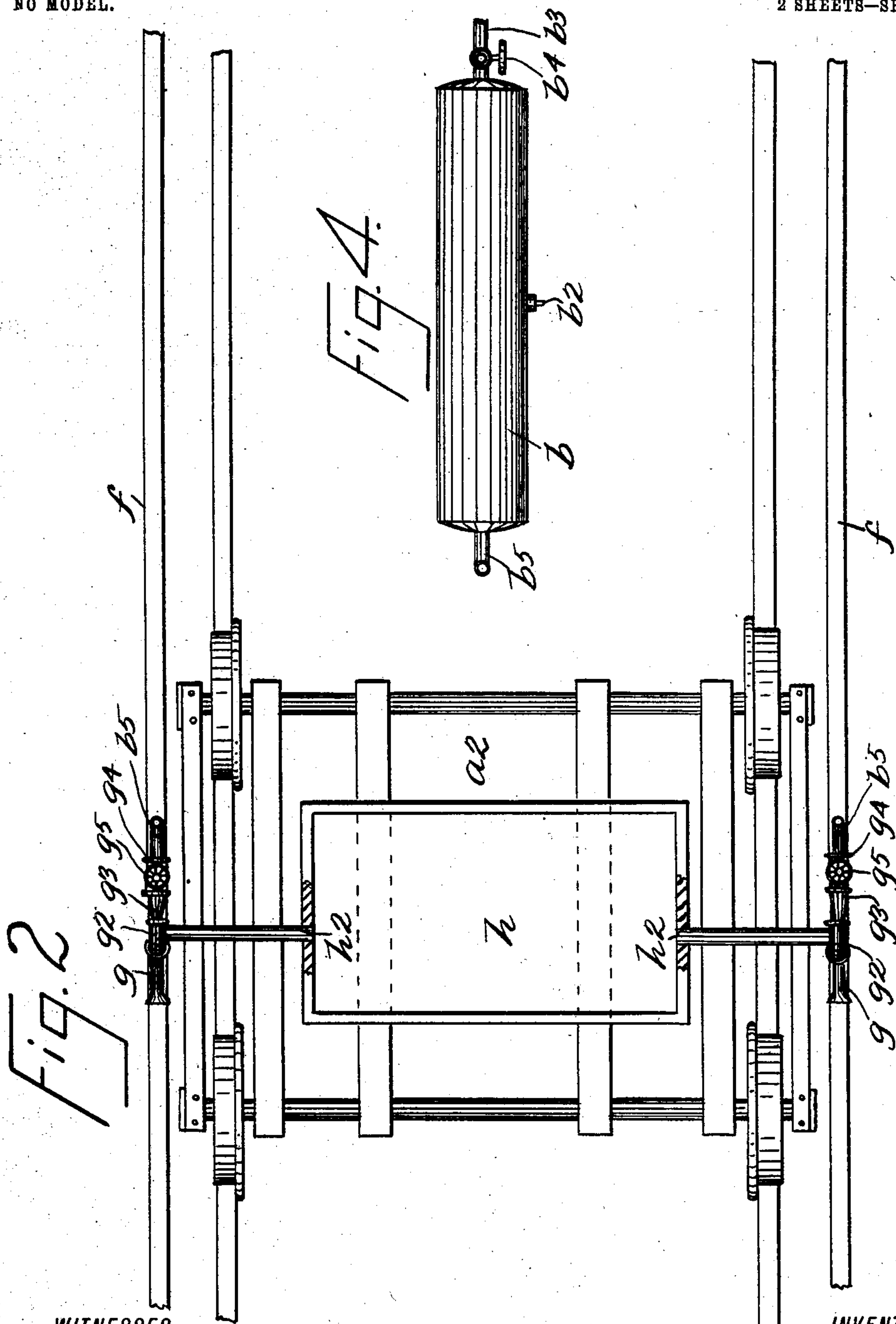
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UNITED STATES PATENT OFFICE.

PETER LINDEMANN, OF WESTCHESTER, NEW YORK.

MEANS FOR REMOVING SLEET, SNOW, AND ICE FROM THIRD RAILS.

SPECIFICATION forming part of Letters Patent No. 721,960, dated March 3, 1903.

Application filed January 7, 1903. Serial No. 138,118. (No model.)

To all whom it may concern:

Be it known that I, PETER LINDEMANN, a citizen of the United States, residing at Westchester, in the county of New York and State of New York, have invented certain new and useful Improvements in Means for Removing Sleet, Snow, and Ice from Third Rails, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The objects of this invention are to provide improved means for removing sleet, snow, ice, and rust from the third or conductor rail of an electric railway and also for preventing the collection of sleet, snow, and ice on said rail; and with these and other objects in view the invention consists in an apparatus for the purpose specified constructed as hereinafter described and claimed.

It is a well-known fact that in the operation of electric railways in which a third rail is employed as a conductor for the electric current the collection of sleet, snow, and ice on said rail frequently prevents proper contact between the contact-shoe and the rail, thus interfering with the operation of the railway and causing great inconvenience and loss of time and sometimes a complete block of the entire system, and one of the objects of this invention is to provide means whereby the third or conductor rail may always be kept perfectly clean, so that the contact-shoe by which the current is conveyed to the motor may not be prevented from operation.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of a part of a railway-car provided with my improvement; Fig. 2, a plan view of a part of the mechanism shown in Fig. 1; Fig. 3, a section on the line 3 3 of Fig. 1, part of the construction being turned into a different position; and Fig. 4, a plan view of an air-tank, which forms a part of my improved apparatus.

In the drawings forming part of this specification I have shown at *a* a part of a railway car or motor and one of the trucks thereof,

and beneath the car or motor I place in any convenient position a compressed-air tank *b*, and this tank may form a part of an ordinary air-brake system, or it may be used independently of said system, in which event any suitable means may be provided for filling the same with air at any desired pressure. The tank *b* is provided with a safety-valve *b*² and at one end thereof with an air-supply pipe *b*³, having a valve *b*⁴, and the other end of said tank is provided with a pipe *b*⁵, which extends over the truck *a*² of the car and up into one corner of the car, as shown at *b*⁶, where it is under the control of the motor-man. The pipe *b*⁵ is provided in the corner of the car with a pressure-gage *c* and with a valve *d*, and this pipe is also carried downwardly and backwardly over the truck *a*², said pipe *b*⁵ being shown partially in full lines and partially in dotted lines in Fig. 1. In Fig. 1 I have also indicated at *e* the ordinary contact-shoe, which bears on the third or conductor rail *f*, and this contact-shoe may be connected with the truck *a*² in the usual or any desired manner, and supported on and connected with the truck *a*² in any desired manner is a sand-blast nozzle *g*, having a tubular coupling-head *g*², with which is connected an air-blast nozzle *g*³, which is connected with a coupling *g*⁴, provided with a valve *g*⁵ and with which the pipe *b*⁵ is connected. I also support beneath the car and over the truck *a*² a sand-box *h*, with which is connected a pipe *h*², and this pipe *h*² is also connected with the coupling-head *g*² of the sand-blast nozzle *g*. As shown in Fig. 3, the sand-blast nozzle *g* and the pipe *h*² are turned half-way around, so as to better show the parts thereof and those connected therewith.

In Fig. 2 I have shown one of the sand-blast nozzles *g* at each side of the track and also a conductor-rail *f* on both sides, and this is sometimes necessary where there are curves in the track; but it will be understood that either one or both sides of the truck may be thus provided at either one or both ends of the car, and my invention is not limited to the location of the sand-box *h* nor to the exact location of the sand-blast nozzle or nozzles *g*; but when a sand-blast nozzle is located on the opposite sides of the same truck

it will be connected with the pipe b^5 or branch thereof leading to the tank b in the same manner as hereinbefore described.

In practice I prefer to place the sand-blast
5 nozzles so that they will be just in front of the contact shoe or shoes e and to support said nozzle or nozzles at an angle of about forty-five degrees, as shown in Fig. 1, so that the discharge thereof will be directed onto
10 the contact-surface of the contact-rail f and at an angle thereto. It will also be understood that wherever the air-blast nozzles are located they are under the control of the motorman in the corner of the car or at any
15 point at which he may be located, and the arrangement of the various parts of my improved apparatus may depend largely on the style of the car or motor to which it is applied. It will also be understood that the
20 sand-box h may be provided with a suitable cover, and whenever the motorman desires to direct a blast of sand onto the third or conductor rail f all that is necessary for him to do is to operate the valve d , it being under-
25 stood that the valve g^5 may be kept open, if desired, or may be opened or closed whenever necessary.

If the tank b forms a part of the ordinary air-brake system, the capacity of the means
30 employed for compressing the air in said system would probably have to be increased; but if said tank does not form a part of an air-brake system any suitable means may be provided for compressing air therein—as, for
35 instance, a pump geared in connection with the motor or with one of the axles of the car—or the said tank might be filled with air at a central station or at the end of the line.

In the drawings forming part of this specification I have not shown the electric motor
40 nor the electric connections for the shoe e , as they form no part of this invention; but it will be understood that these parts may be of the usual or any preferred form. It will
45 also be understood that various changes in and modification of the construction and arrangement of the various parts of my invention may be made without departing from the spirit thereof or sacrificing its advan-
50 tages, and I reserve the right to make all

such alterations as fairly come within the scope of my invention.

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

1. In a third-rail electric railway, a sand-blast nozzle connected with a car or motor adjacent to the contact-shoe and adapted to discharge a blast onto the contact-surface of the rail, substantially as shown and described. 55 60

2. In a third-rail electric railway, a sand-blast nozzle connected with a car or motor adjacent to the contact-shoe and adapted to discharge a blast onto the contact-surface of the rail, said sand-blast nozzle being under the
65 control of the motorman, substantially as shown and described.

3. The combination with the contact-shoe of an electric car or motor adapted to bear on a third rail or conductor, of a sand-blast nozzle supported adjacent to said shoe and adapted to discharge a blast onto the contact-surface of said rail, substantially as shown and described. 70

4. The combination with the contact-shoe
75 of an electric car or motor adapted to bear on a third rail or conductor, of a sand-blast nozzle supported adjacent to said shoe and adapted to discharge a blast onto the contact-surface of said rail, said car or motor being also
80 provided with a sand-box and a compressed-air tank in communication with said sand-blast nozzle, substantially as shown and described.

5. A railway car or motor provided with a
85 contact-shoe adapted to bear on a third or conductor rail, and an air-blast nozzle supported adjacent thereto and adapted to discharge a blast onto the contact-surface of said rail, and means for supplying sand, and
90 air under pressure to said sand-blast nozzle, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 5th day
95 of January, 1903.

PETER LINDEMANN.

Witnesses:

F. A. STEWART,
J. C. LARSEN.