

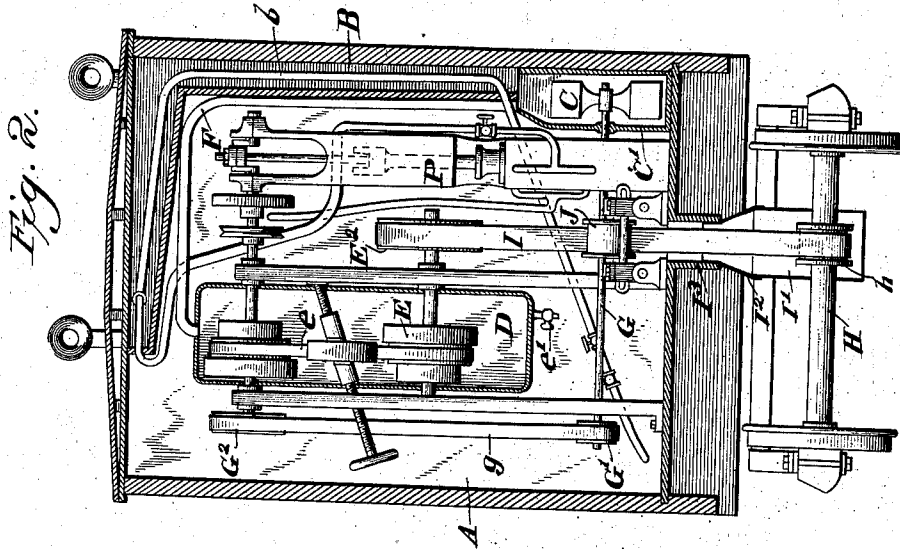
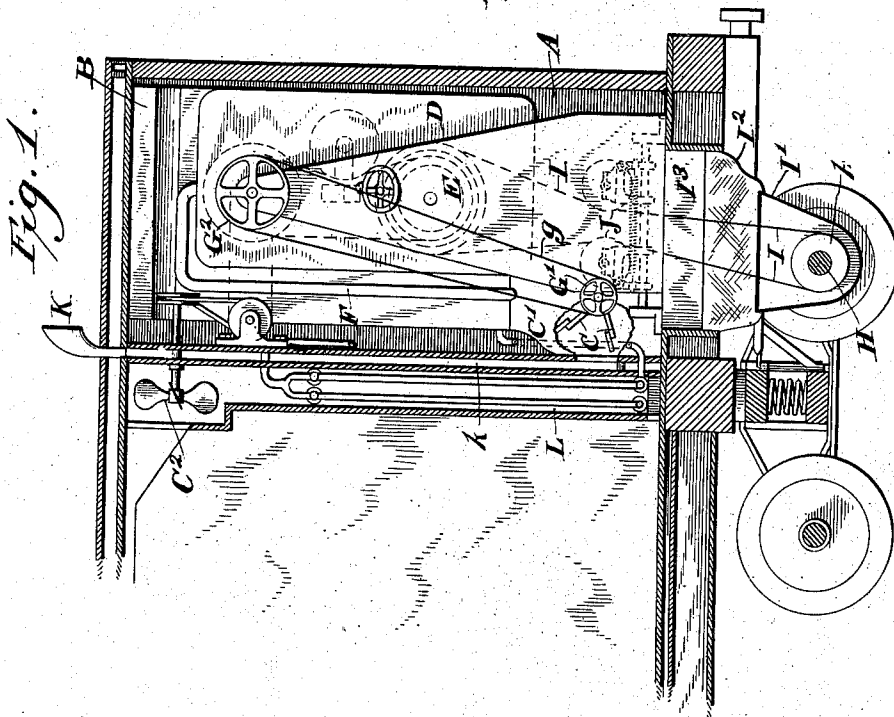
No. 716,091.

Patented Dec. 16, 1902.

C. C. PALMER.
AUXILIARY POWER DEVICE FOR CARS.

(Application filed Jan. 24, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

CASSIUS CLAY PALMER, OF NEW YORK, N. Y., ASSIGNOR TO THE RAILWAY ELECTRIC REFRIGERATING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

AUXILIARY POWER DEVICE FOR CARS.

SPECIFICATION forming part of Letters Patent No. 716,091, dated December 16, 1902.

Application filed January 24, 1901. Serial No. 44,526. (No model.)

To all whom it may concern:

Be it known that I, CASSIUS CLAY PALMER, a citizen of the United States, and a resident of New York city, borough of Manhattan, in the county and State of New York, have invented a new and Improved Auxiliary Power Device for Cars, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the driving mechanism for auxiliary devices used on cars and similar vehicles, and comprises certain novel features which will be hereinafter described, and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side sectional elevation of a portion of a car having a refrigerating apparatus mounted therein and having my invention applied thereto, and Fig. 2 is a sectional end elevation of the same parts.

Mechanisms of this character which are mounted upon cars, whether consisting of refrigerating, lighting, or other auxiliary apparatus, are especially subject to the action of dust, which will get in the mechanism and interfere with the proper working of the parts, especially if the mechanism be driven from the car-axle.

The object of my invention is to so protect certain portions or all of the auxiliary mechanisms that the dust will be kept out of the same as far as is possible.

I have herein shown my device as applied to a refrigerating apparatus; but it will be evident that the same principles and constructions may be employed in connection with lighting apparatus or, in fact, any form of auxiliary mechanism which is carried by such vehicles. I do not, therefore, wish to be limited to the use of my improvements in connection with the refrigerating apparatus only.

In Fig. 1 one end of a car K is shown having a chamber A formed therein by a partition which extends entirely across the car, said chamber or room containing the auxiliary mechanism, which in this case consists of a refrigerating apparatus. The refrigerating ap-

paratus comprises a pump P, which is used for compressing the refrigerating fluid and for forcing it through the pipes *b* in the condenser B, and then for conducting it through the refrigerating-pipes located within the chamber L; also, of the mechanism for driving said pump from the car-axle H the circulating-fans C and C², and suitable ventilating-pipes K. Such refrigerating apparatus is not in itself a part of my invention, and a complete description thereof is not necessary. The power for driving this mechanism is taken from a band-wheel *h*, which is secured to one of the car-axles H. The floor of the car is provided with an opening I³, through which said belt may pass in to the chamber A, which contains the auxiliary mechanism. The band-wheel *h* upon the car-axle is inclosed by a hood or casing I¹ which is connected with the hole in the floor of the car by means of an apron I², which is preferably formed of some flexible material, as canvas or leather. The belt passes between guide rollers or pulleys J, and thence over a pulley E², mounted upon a shaft, upon the other end of which is placed one of a pair of stepped or cone pulleys E. The other stepped or cone pulley E is secured to a shaft lying above the other and is provided with a crank, by means of which the pump P is operated.

In devices of this character considerable trouble has occurred in connection with the belt *e*, which connects the two stepped or cone pulleys, by reason of the fact that the dust which enters the opening through which the belt I passes gets beneath the belt *e* and the surfaces of the cone-pulleys and causes the belt to slip. To prevent this, I inclose these pulleys and the connecting-belt within the case D, which may be made of any suitable material and completely incloses said parts.

The refrigerating apparatus contains a fan C, which is run by means of a belt *g*, which runs upon a pulley on the upper counter-shaft and a pulley G', which is secured to the shaft G of the fan. The fan C is used for causing a circulation of air over the pipes *b* from the condenser, so as to cool the refrigerating liquid after it has passed through the pump. From the chamber of this fan or any

other suitable point a branch pipe F leads to the chamber D, so that a small portion of the air delivered by said fan is discharged into the chamber D, or at least a sufficient amount is discharged into said chamber to maintain thereon a slight outward pressure sufficient to prevent entrance of dust. In this manner the pulleys E and the belt *e* are protected from the action of the dust. The casing which forms the chamber D will hardly be air-tight, and there will be a leakage or filtering of the air from the casing to the outer chamber A, containing the major part of the machinery. This will prevent dust from entering, and the same air escaping from the cracks of the outer chamber A will tend to prevent dust from entering said outer chamber. This action may be supplemented by using a small exhaust-cock *e'*, communicating between the inner casing D and the outer chamber A, which may be opened more or less, if desired. By using a chamber within a chamber and inclosing the parts which would be worst affected by the dust within the inner chamber a double insurance against dust is provided, as it must make its way through the cracks in the walls of two chambers against an escaping current of air.

It has been found in connection with such apparatus as that described, and especially where it has been sought to drive such apparatus from the car-axle, that even a slight amount of dust getting between the belt and the surfaces of the stepped pulleys will prevent their proper operation. By inclosing them in the manner herein shown and dis-

charging a small amount of pure air into said chamber the entrance of dust is thoroughly prevented and the operation of the device is much more reliable than where such precautions are not taken.

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

1. The combination with a car containing an inclosed chamber and a machinery-receiving case within said chamber, said case having an air-discharge into said chamber, of a fan having a discharge connection with said case, an air-supply connection with a source of pure-air supply, and means for running the fan whereby an outward flow of air is maintained from the case to the chamber, and from the chamber to the outer air and entrance of dust is prevented.

2. The combination with a refrigerating-car having a chamber at one end for the reception of the refrigerating machinery, a driving connection from said mechanism to a car-axle, including a belt and step-pulley change-gear device, a casing inclosing the said belt and step-pulleys, a circulating-fan for said refrigerating machinery, a supply-conduit leading from said fan to a source of pure-air supply, a branch discharge connection from said fan to said casing, and a regulatable discharge-opening from said casing into the machinery-chamber.

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