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R. M. NEWBOLD.

SUSPENSION MEANS FOR AXLE DRIVEN DYNAMOS.

APPLICATION FILED APR. 27, 1904.

NO MODEL.

Fig. 1.

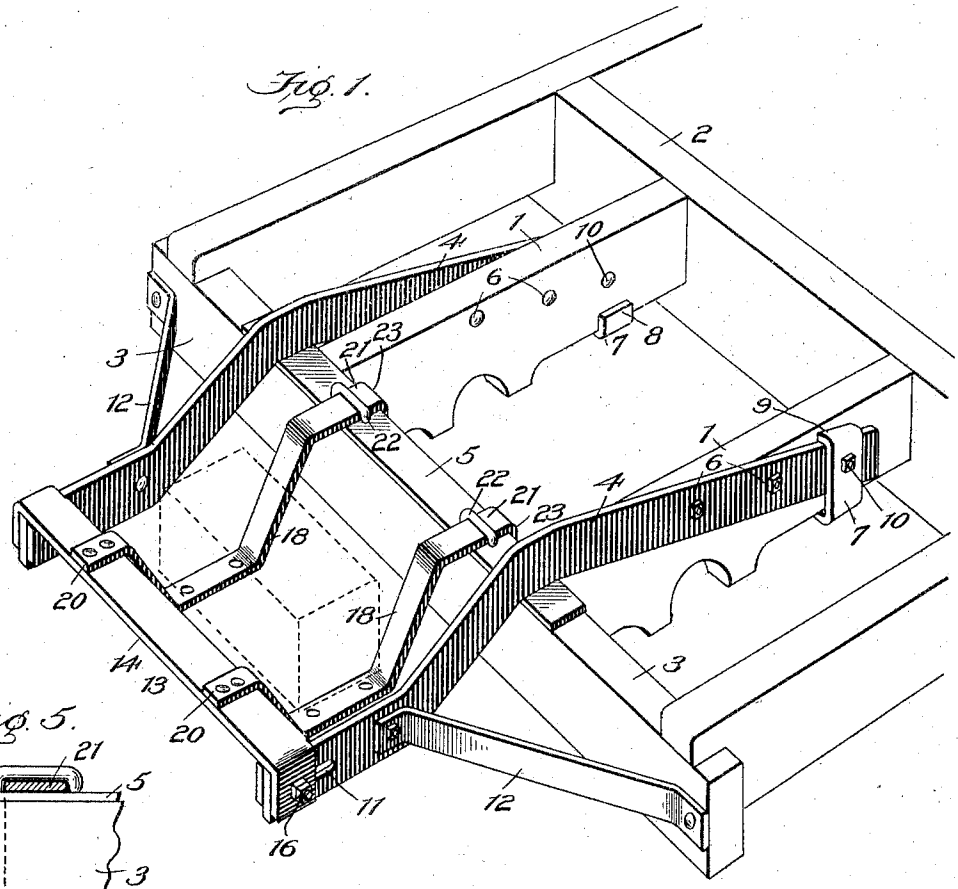


Fig. 5.

Fig. 2.

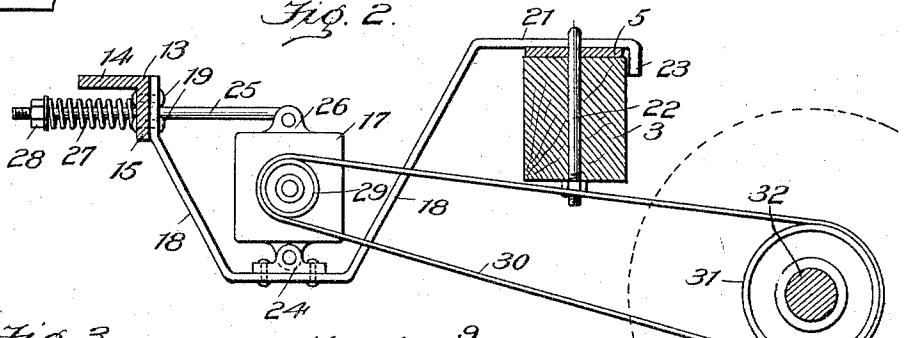


Fig. 3.

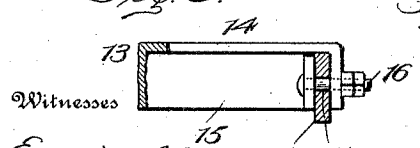
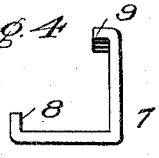


Fig. 4.



Witnesses

Edwin L. Bradford

R. K. Newmater.

Inventor

Roger M. Newbold

By Robt. D. Johnston Jr.

Attorney

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UNITED STATES PATENT OFFICE.

ROGER M. NEWBOLD, OF LOUISVILLE, KENTUCKY.

SUSPENSION MEANS FOR AXLE-DRIVEN DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 766,891, dated August 9, 1904.

Application filed April 27, 1904. Serial No. 205,152. (No model.)

To all whom it may concern:

Be it known that I, ROGER M. NEWBOLD, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Suspension Means for Axle-Driven Dynamos, of which the following is a specification.

My invention relates to an improvement in suspension-framework for a dynamo-electric machine mounted upon the truck of a railway-car and adapted to be driven from an axle thereof for the purpose of generating electricity to light, heat, or ventilate the car.

More particularly my invention relates to an improved dynamo-supporting frame which extends outside of the truck-frame proper and supports the dynamo at a point where it is readily accessible for inspection and repair.

The details of construction embodying a preferred form of my invention are illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of part of a truck, illustrating my supporting-frame applied thereto and showing the dynamo in dotted lines. Fig. 2 is a detail view of one of the hanger-irons for the dynamo, illustrating a modified manner of connecting its outer end rigidly to the cross-bar. Fig. 3 is a detail view of an end of the cross-bar, showing the manner in which it is adjustably connected to the main supporting-bars. Fig. 4 is a detail view of the clips for bracing the inner ends of the supporting-bars of the frame. Fig. 5 is a detail view of the U-bolt which forms a guide for the inner end of the hanger-irons.

Similar reference-numerals refer to similar parts throughout.

I have illustrated my invention applied to a truck of any desired construction, preferably comprising side beams 1, inner cross-beam 2, and an end sill 3. The main supporting-bars 4 for the suspension-frame rest at or near their central portions upon a plate 5, disposed across the top of end sill 3, from which point the inner ends of the bars extend along side beams 1 on each side of the truck, being securely bolted thereto by bolts 6. To further increase the supporting strength of these bars, I provide clips 7, substantially rectangular in cross-section and provided with inwardly-disposed lugs 8 and 9, formed by bending the outer ends of the clips at right angles to their body portions. As applied, the lug 9 of a clip engages the top of bar 4 near its inner end, and the part of the clip carrying lug 8 is passed under the beam and caused to engage the other side thereof. If it is desired to place the clip in position after the bar 4 is bolted to the beam, it can be slipped over the end of the bar. The clip when in position will assume the major part of the supporting strain on the bar, being held firmly thereto and to the beam by means of a bolt 10, which passes through a suitable opening in the clip and a corresponding bolt-hole near the end of bar 4 and passes through side beam 1, to which it is made fast by a nut engaging its outer end. The bars 4 may be disposed along the inner or outer side of beams 1, as may be found desirable, and, if preferred, the lug 9 may be formed by bending the end of clip 7 at a slight angle corresponding with the angle of inclination of the beam 4.

At their outer ends the bars 4 incline downwardly for a portion of their length and then extend horizontally to their outer ends, which receive elongated slots 11, by means of which the dynamo-supporting means are adjustably connected thereto. Lateral brace-bars 12 extend from each end of the sill 3 to the outer ends of bars 4 and securely brace them against transverse strain. I connect the outer ends of the bars 4 by a cross-piece 13, preferably in shape of an angle-iron, having sides 14 and 15. Since this cross-bar is intended to support directly a large part of the weight of the dynamo and at the same time to be adjustable, it is necessary to secure it in the safest manner possible to bars 4. To this end I preferably cut or saw the ends of the angle-irons so that the side 15 may be bent inwardly at right angles under side 14 and this latter or top side extended out for a short distance and then bent downwardly at right angles to itself. Thus, as shown in Fig. 3, the ends of the cross-bars form inverted-U-shaped frames, the sides of which pass over the ends of the bars 4, thus preventing any transverse movement of

the cross-bar without interfering with its adjustment to and from the end sill 3. This adjustment is provided for by bolts 16, which pass through the bent ends of the cross-bar on each side and through the elongated slots 11 in bars 4. The bolts 16 will preferably be provided with threaded ends, which are each engaged by two or more nuts or by lock-nuts of any description, by means of which the cross-bar may be firmly held at any point in its adjustment and also prevented from slipping off the end of bars 4.

A dynamo 17 is supported between the cross-bar 13 and the end sill 3 by hanger-irons 18, which are rigidly and permanently connected to side 15 of the cross-bar 13 by hot rivets 19, or they may be provided with flanges 20, which rest upon the top side 14 of the cross-bar and are riveted thereto. The hanger-irons are preferably U-shaped and are provided at their outer ends with elongated horizontal portions 21, which rest upon the plate 5 on top of the end sill. Bolts 22 pass through end sill 3 and plate 5 and at their upper ends are bent over at right angles and then turned downwardly, so that they form inverted-U-bolts, which straddle the portions 21 of the hanger-irons and form guides therefor. This holds the inner ends of the hanger-irons from vertical movement without interfering with their free sliding adjustment to and from the end sill, which is controlled by the cross-bar 13. The inner ends of portions 21 are bent downwardly at 23 to prevent the disengagement of the cage should anything happen to the bolt 16, for these lugs 23 will engage sill 3 when the bolts 16 are at the outer ends of slots 11. The dynamo is pivotally supported in bearing-blocks 24, riveted to the bottom portion of the hanger-irons 18. A rod 25, pivotally connected to lugs 26 on top of a dynamo-casing, leads forward through a suitable opening in the side 15 of the cross-bar. The outer end of the rod is screw-threaded and encircled by a coiled spring 27, which bears against the guide, and by its tension, which is adjusted by a nut 28 on the outer end of the rod, acts to swing the dynamo-casing outwardly on its pivots. Upon the armature-shaft of the dynamo is mounted a pulley 29, which is connected by a driving-belt 30 with a pulley 31, keyed to an axle 32 of the truck. The object of this spring adjustment is to maintain a proper tension on the driving-belt 30.

The necessary adjustment to maintain the alinement of the dynamo and axle-pulley will be effected by adjusting the cross-bar 13, and consequently the hanger-irons and dynamo, on the supporting-bars 4, and the slack of the belt will be compensated by the swinging movement of the dynamo on its pivotal bearing. Any unusual stretch of the belt can be compensated temporarily by moving the cradle outwardly to the full extent of the movement permitted by the slots 11 to the cross-bar 13. These slots will correspond in length to the limited adjusting movement required to maintain the alinement of the pulleys. The bolt 16 and the lugs 23 on the hanger-irons will prevent the possible disengagement of the adjustable supporting frame or cradle for the dynamo.

It will thus be seen that I provide a simple and economical suspension for dynamos which is readily adjustable to suit all needs and at the same time provided with the necessary strength to support the dynamo under the various strains to which it is subjected in actual use.

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

1. The combination with a truck, of bars supported from an end sill and disposed without the truck-frame, a cross connection between said bars, a dynamo-supporting cradle adjustably suspended between said cross connection and the end sill, and a dynamo pivotally mounted in said cradle.

2. The combination with a truck and an axle-driven dynamo, of means to suspend the dynamo without the truck comprising a supporting-frame, a cradle adjustably suspended between said frame and truck, a dynamo mounted in said cradle, and means to drive the dynamo from an axle of said truck.

3. The combination with a truck, of a framework disposed without the truck and comprising bars leading over the end sill and suitably secured at their inner ends to the truck-frame, a cross part connecting the outer ends of said bars, a cradle suspended between said cross part and end sill, means to adjust said cradle and a dynamo supported therein.

4. The combination of a truck, a suspension-frame connected to said truck and disposed without an end sill thereof, a cradle suspended from said frame without the truck, a dynamo mounted in said cradle, means to drive said dynamo from an axle of said truck, and means to adjust said cradle for the purposes described.

5. The combination of a truck, a suspension-frame connected to said truck and disposed without an end sill thereof, an adjustable section of said frame, hanger-irons connected to said section and adjustably supported from said truck, a dynamo supported by said irons and driven by a belt from an axle of said truck.

6. The combination of a truck, a suspension-frame connected to said truck and disposed without an end sill thereof, said frame comprising bars leading over an end sill of said truck and along the side beams thereof, clips engaging said side beam and the inner ends of said bars, a cross part connecting the outer ends of said bars, hanger-irons connected to the said cross part and adjustably supported

on said truck, and an axle-driven dynamo supported by said hanger-irons.

7. The combination with a truck, of a framework connected at its inner ends to side beams of said truck and having its outer end disposed without an end sill, and comprising an adjustable cross-piece, hanger-irons disposed between said adjustable piece and the end sill of the truck, said irons being rigidly connected to said adjustable cross-piece and provided with elongated lugs which rest on said end sill, guides for said lugs, and an axle-driven dynamo supported by said hanger-irons.

8. The combination with a truck, of a supporting-framework disposed outside of an end sill thereof and comprising an adjustable section, slotted bars which support said section and adjusting-bolts which pass through said section and supporting-bars, means to suspend an axle-driven dynamo between said cross-section and the truck-frame, and guides for said supporting means secured to said truck.

9. The combination with a truck and an axle-driven dynamo, of means to suspend said dynamo without the truck comprising a supporting-frame, a dynamo-supporting device or devices supported by said frame and truck and adjustable relative to the latter, means to connect said dynamo to said device or devices, and means to drive the dynamo from an axle of said truck.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROGER M. NEWBOLD.

Witnesses:

C. W. SHAFT,

G. W. B. OLMSTEAD.