

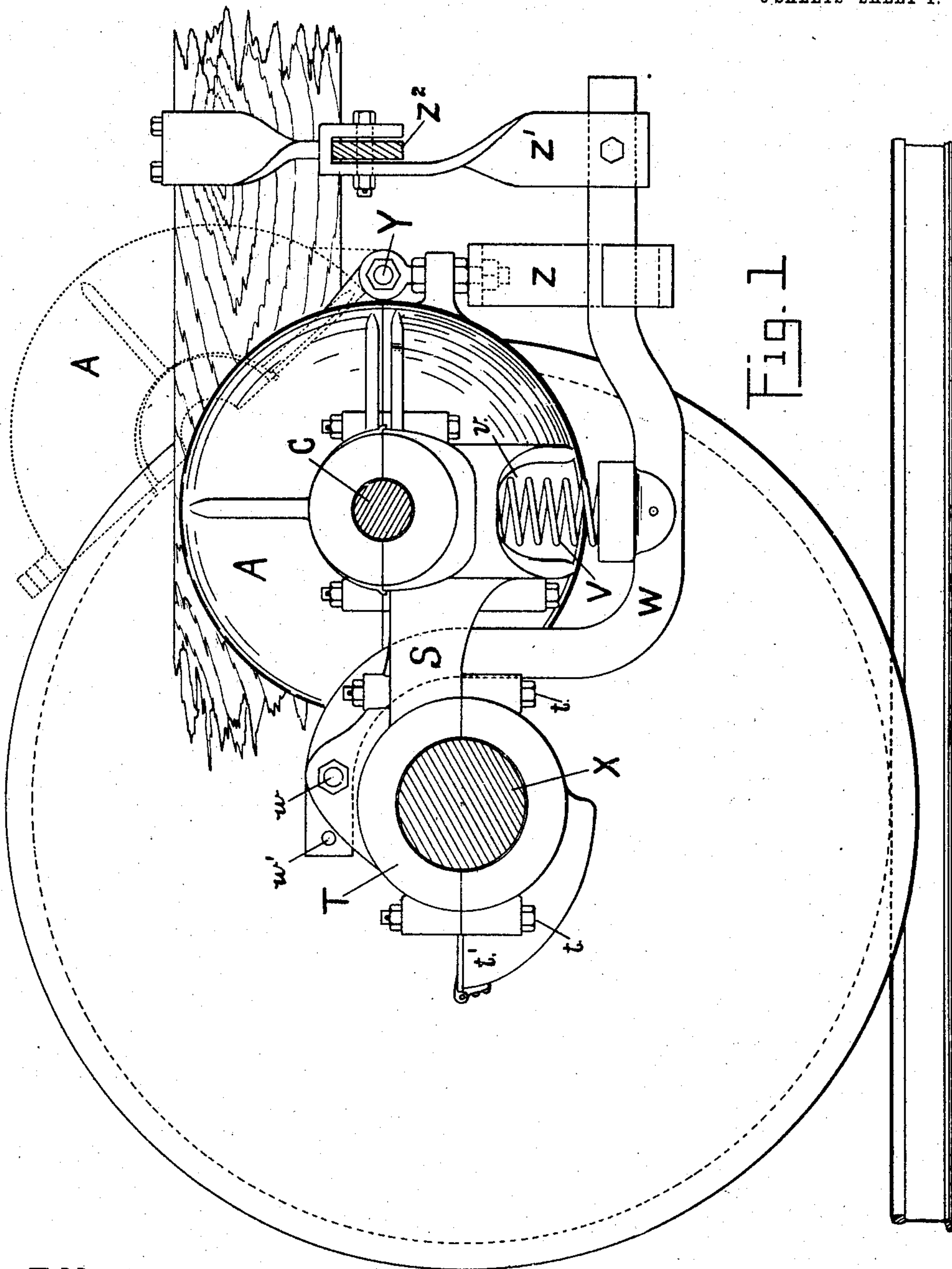
No. 780,724.

PATENTED JAN. 24, 1905.

J. F. McELROY.
DYNAMO FOR TRAIN LIGHTING.

APPLICATION FILED JUNE 6, 1902.

3 SHEETS—SHEET 1.



Witnesses

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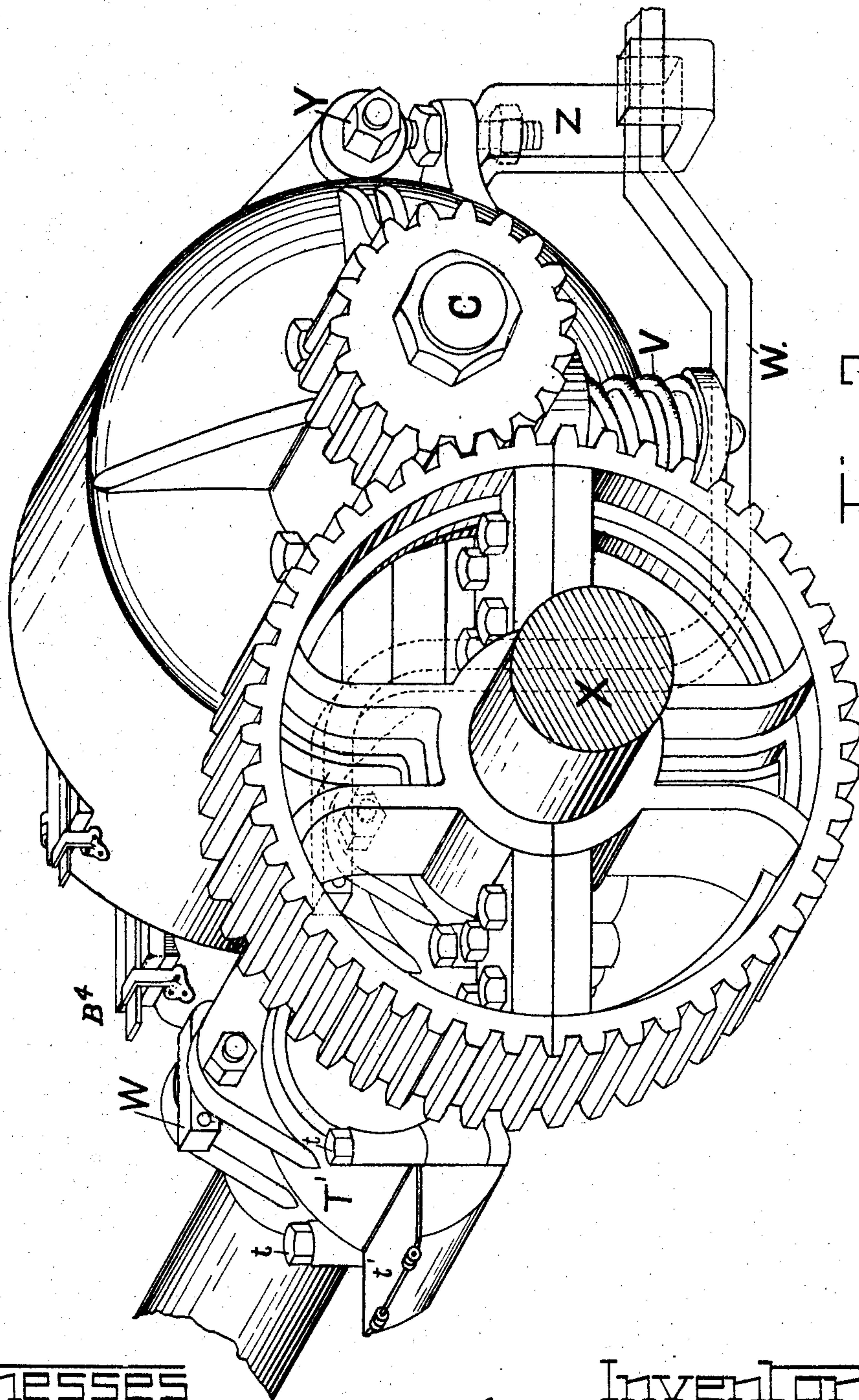


Fig. 2.

Witnesses

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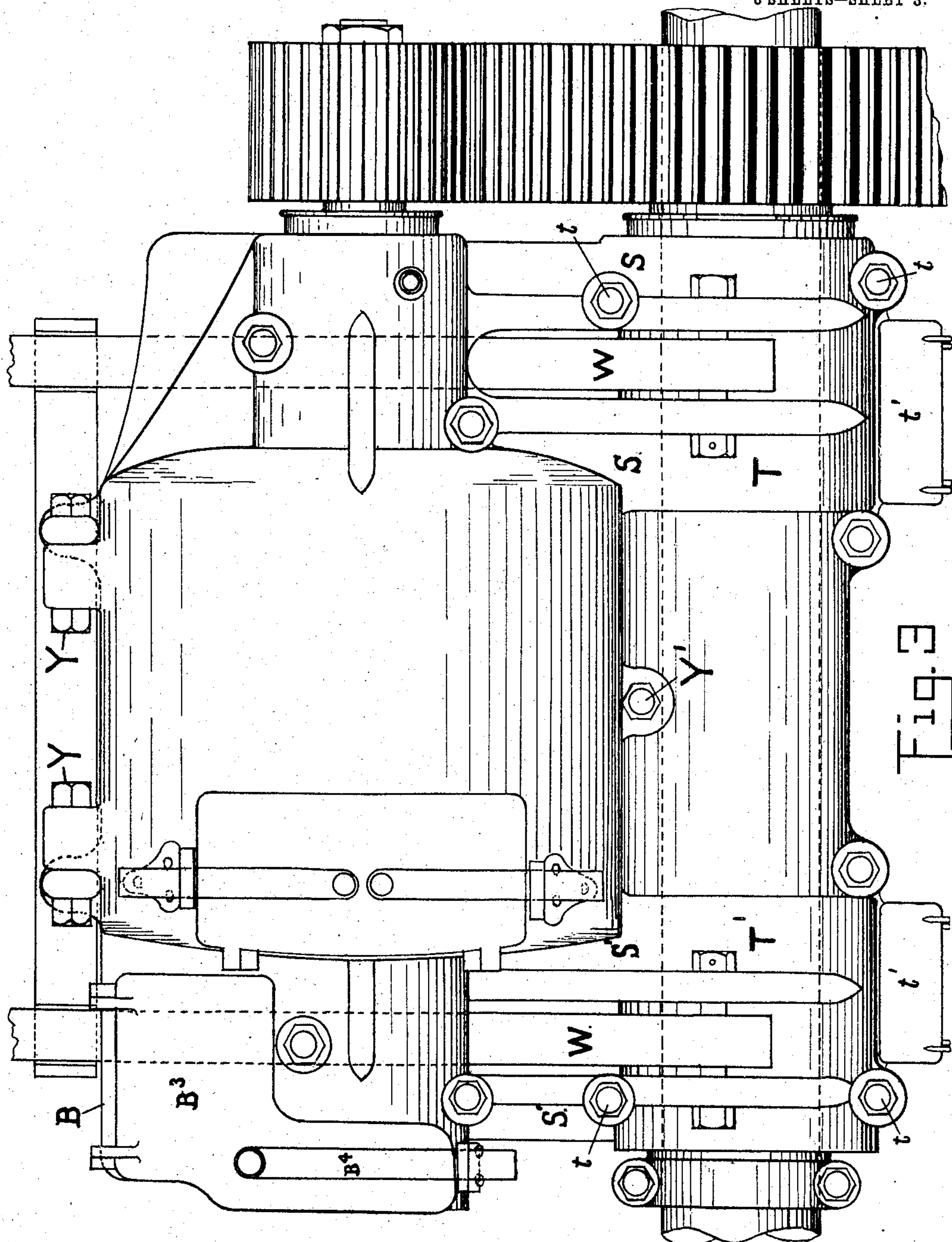
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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

DYNAMO FOR TRAIN-LIGHTING.

SPECIFICATION forming part of Letters Patent No. 780,724, dated January 24, 1905.

Application filed June 6, 1902. Serial No. 110,413.

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Albany, county of Albany, and State of New York, have invented certain new and useful Improvements in Dynamos for Train-Lighting, of which the following is a specification describing that form of my invention which I now regard as the best form out of the various forms in which it may be embodied.

Reference is made to the accompanying drawings, wherein—

Figure 1 is a side elevation of the dynamo in position with the gearing removed. Fig. 2 is a perspective view of Fig. 1 with the gearing in place. Fig. 3 is a plan of the machine.

My invention involves certain improvements in the construction and arrangement of dynamo-electric machines, with particular reference to the mounting of the same upon the truck of a railway-vehicle, so as to be driven by one of the axles to supply electricity for lighting and other purposes upon the car or upon the train of which the car forms a part.

Particularly I have devised a certain arrangement of the machine with respect to the car-truck by means of which the machine is so upheld as to be driven by suitable gearing from one of the car-axles and yet so mounted that the car-axle and car-wheels thereon will be readily removed from the truck without disturbing the machine. I have also arranged to include the reversing-switch operated by the dynamo-shaft within a special compartment formed at one end of the dynamo-casing and integral therewith and located adjacent to another compartment containing the journal-box. The form and arrangement of the reversing-switch and the mechanism for operating it are, however, not claimed herein, but form the subject-matter of a separate application.

Referring to the accompanying drawings, A represents a dynamo-electric machine inclosed, as usual, by an iron casing formed by

an extension of the neutral portion of the field-magnet structure into a box form, within which is mounted the armature of the machine and, outside of the armature, the field-magnet coils and pole-pieces. No novelty is claimed for this general construction, so it need not be described in detail.

The dynamo-casing is shown as provided with rearwardly-extending arms, there being two sets of such arms—viz., S S and S' S'—as shown in Fig. 3. The set S S terminates in a journal-box T, the upper half of the journal-box being formed integral with the arms and resting on the upper side of the axle X. The other two arms, S' and S', terminate in another similar journal-box, T', at the other end of the machine. The caps for the journal-boxes T and T' are secured on the under side of the axle X by bolts *t*, each cap carrying also a grease-box *t'*.

On each side of the dynamo is a supporting-bar W, one end of which bears upon the upper side of the axle-box, as shown in Fig. 1, being held in position by a bolt *w*. The bar then passes downward between the two arms S S (or the arms S' S') and then turns to the right and passes horizontally beneath one end of the dynamo A. A spring V bears upon the upper side of the bar W, being preferably directly beneath the center of the dynamo A, and supports the machine, its upper end being seated within a recess *v*, formed in the casing of the machine directly under the journal-box of the armature-shaft. The arrangement is the same on the opposite end of the machine.

The casing of the dynamo is made in two parts, as heretofore described, which are pivoted together on the front side of the machine remote from the axle by the bolts Y Y. On the other or rear side of the machine the two parts are held together by a bolt Y', passing through a lug projecting from the upper part of the machine and screwed into a hole in the lower part. By this construction the upper part of the machine may be turned back around the pivots Y Y into the position shown in

dotted lines in Fig. 1 for the purpose of giving access to the interior thereof. It will be seen that the upper half of the dynamo-casing is thus removable upwardly, while the lower half of each journal-box on the arms projecting rearwardly from the lower half of the casing is removable downwardly. This gives a dynamo-body which may be upheld independently of the axle and will permit the axle to be dropped out from beneath, while the body is also securely centered and journaled on the axle when in action and is capable of inspection from above by its upwardly-removable upper half without disturbing the body itself or its connection with the axle. The vertical play of the machine upon the springs V is limited by a loop Z, Fig. 1, extending down under the bar W and secured at its upper end to the lower part of the machine. The forward ends of the bars W are supported by links Z', Fig. 1, from a cross-bar Z², which in turn is supported upon one of the truck-beams.

As shown in the plan view of Fig. 3, the supports for the machine are alike at each end. By virtue of the arrangements above described the machine A is spring-supported, so as to be relieved of the jarring incident to the rapid travel of the car, and at the same time is centralized with respect to the axle X, so that the spur-gearing (shown in Fig. 3) may have its centers always at the same distance apart to insure a proper driving of the armature by the rotation of the car-axle. At the same time the axle X and the wheels attached thereto may be readily removed for renewal or repairs. For this purpose the rear end of the machine can be supported from some part of the truck by means of a hook entering into holes *w'* in the rear ends of the side bars W, Fig. 1, or in any other suitable manner, while the caps of the axle-boxes are removed from beneath by unscrewing the bolts *t*. Thereupon the wheels and axles can be readily dropped down from beneath and removed and, if desired, new ones substituted therefor. The construction thus conforms to the conditions imposed by ordinary railway traffic wherein it is needful to occasionally remove wheels and axles, the established practice being to take them out from beneath the truck.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a dynamo-electric machine centered upon a driving-axle, of centering extensions between the machine and axle, and longitudinal supporting-bars therefor supported at one end from the upper side of the axle and supported at the other end from the truck.

2. The combination with a dynamo-electric machine, of a driving-axle therefor upon which the machine is centered, centering extensions between the machine and the axle, longitudinal supporting-bars supported on one end from the upper side of the axle and at the other end by the truck, and springs intervening between the said side bars and dynamo.

3. The combination with a dynamo-electric machine having a divided casing, of an extension from the lower part of said casing bearing on the upper side of the axle, a hinged connection between the two parts of the casing on the side of the machine remote from the axle, and means for giving the machine a spring-support from the truck.

4. The combination with a dynamo-electric machine and a driving-axle therefor upon which it is centered, extensions from the lower part of the casing bearing on the upper side of the axle to form journal-boxes, caps for the journal-boxes on the lower side of the axle, supporting side bars supported at one end from the upper side of the axle, springs between the dynamo and the said side bars and means for supporting the outer ends of the side bars from the truck.

5. A dynamo-electric machine combined with a horizontally-divided casing therefor which is provided with a centering extension projecting from and forming a part of the lower half of the casing and terminating in a divided journal-box for a car-axle, the lower half of the journal-box being removable from below and the upper half of the said casing being removable from above.

In witness whereof I have hereunto set my hand, before two subscribing witnesses, this 27th day of May, 1902.

JAMES F. McELROY.

Witnesses:

ERNEST D. JANSEN,
WILLIAM A. MORRILL, JR.