

No. 637,711.

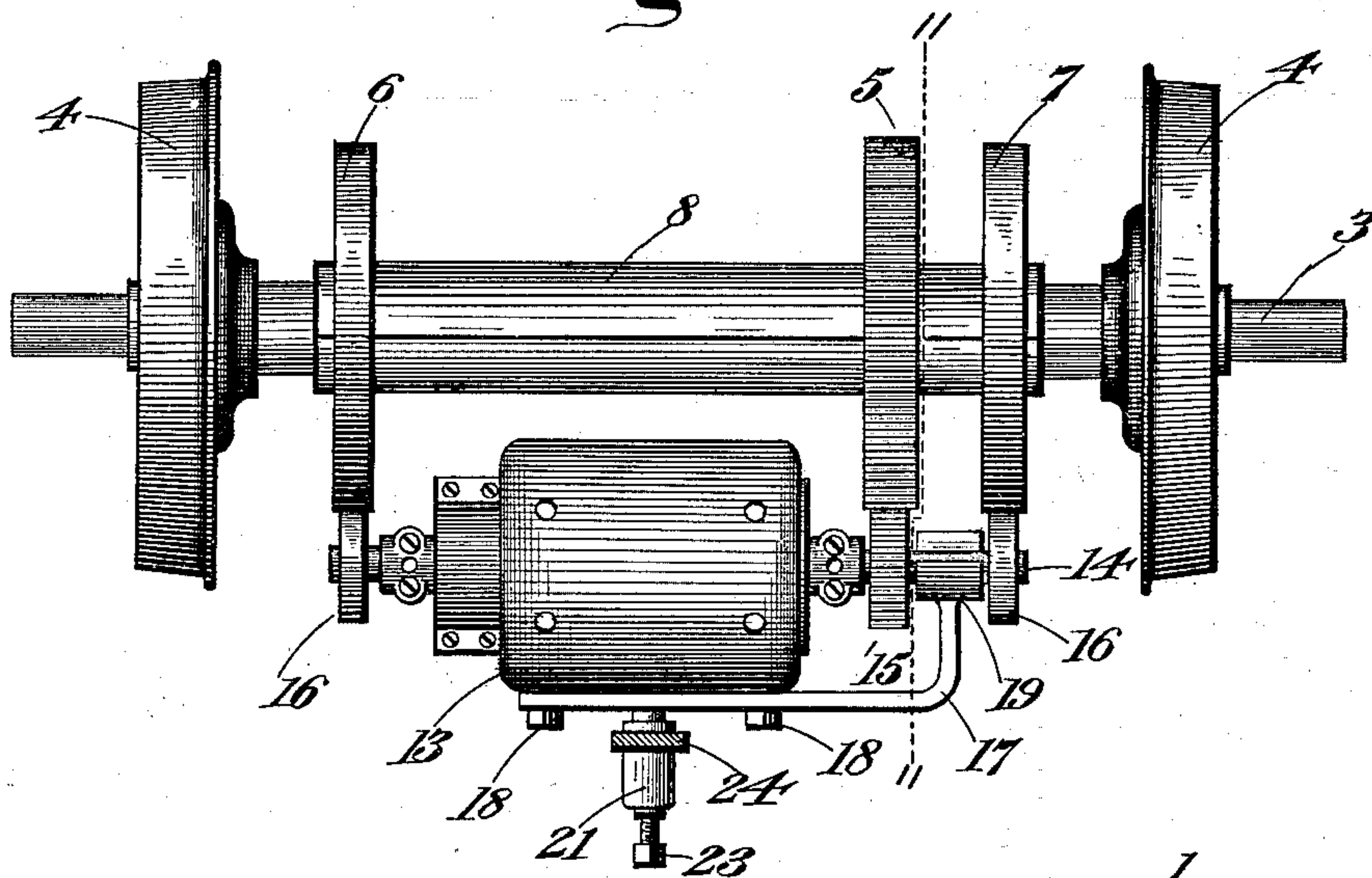
Patented Nov. 21, 1899.

J. L. CREVELING.  
DRIVING MECHANISM FOR DYNAMOS.

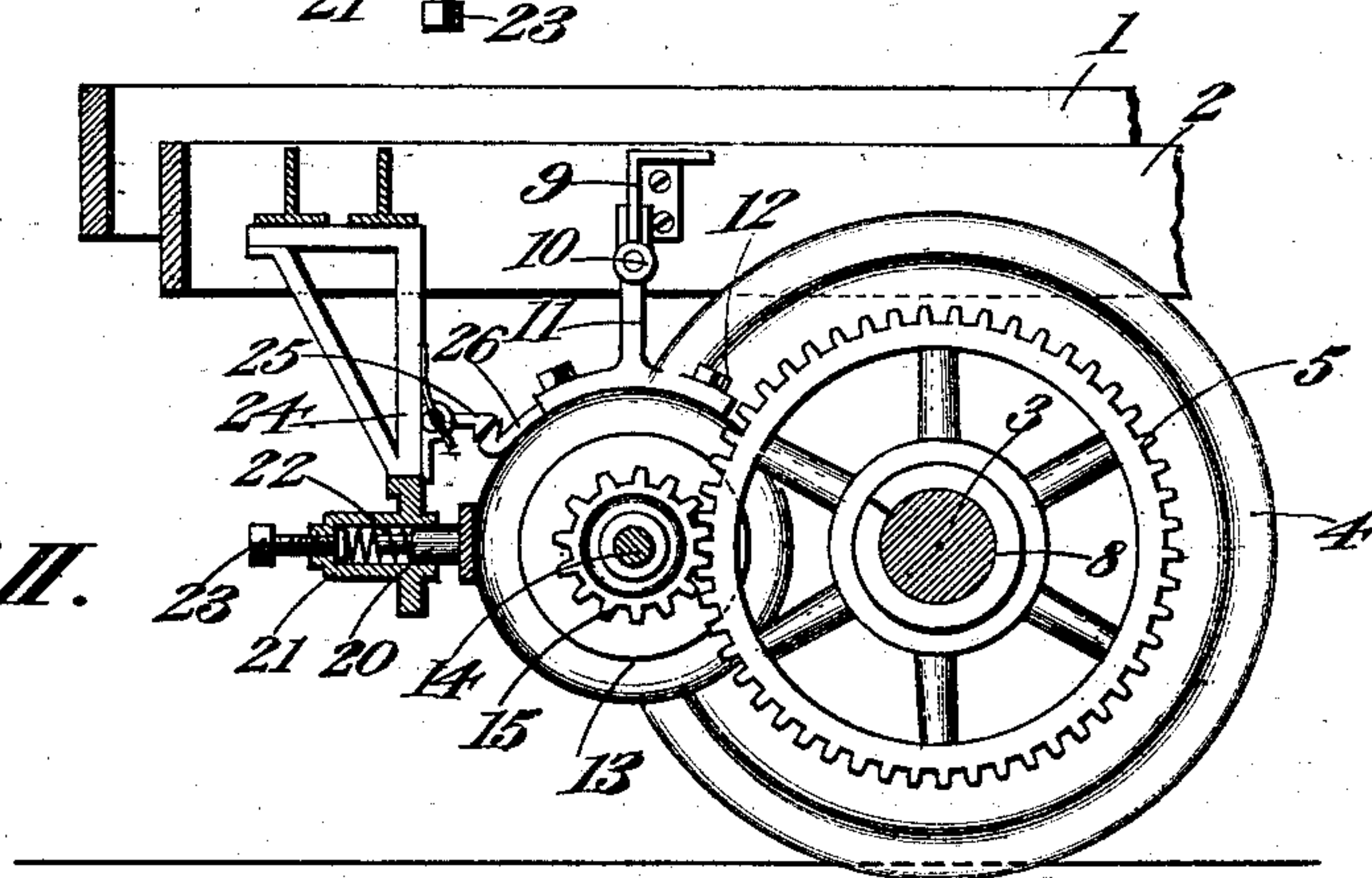
(Application filed Sept. 10, 1898.)

(No Model.)

*Fig. I.*



*Fig. II.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN L. CREVELING, OF NEW YORK, N. Y.

## DRIVING MECHANISM FOR DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 637,711, dated November 21, 1899.

Application filed September 10, 1898. Serial No. 690,653. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. CREVELING, of New York, in the county of New York, State of New York, have invented Improvements in Driving Mechanism for Dynamos, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce improved means for driving a dynamo carried upon a car-truck by power taken from the car-axle through the employment of a gear connection.

It is desirable in apparatus of the class to which my invention belongs to simplify the mechanism as much as possible in order to facilitate the change of parts or repairs.

Heretofore difficulty has been experienced in gearing the armature-shaft of a dynamo directly to a car-axle, because of the relative movement of the car-truck upon its supporting-springs with respect to the axle, whereby variation of the distance between the axis of the armature-shaft and that of the axle is occasioned. By my invention through the employment of simple mechanism, all parts of which are easily accessible, this difficulty is overcome.

In the accompanying drawings, Figure I is a top plan view of a car and dynamo connected therewith in position as upon the under side of a car-truck. Fig. II is a section on the line II II of Fig. I, with the addition of a portion of the car-truck omitted from Fig. I.

Referring to the figures on the drawings, 1 and 2 (see Fig. II) indicate portions of the side pieces of a car-truck, 3 the axle, and 4 the wheels upon which the truck runs. To the axle between the wheels are secured a gear 5 and one or more spacing members 6 and 7. I prefer to employ two spacing members consisting of smooth pulleys or disks. The gear and spacing member or members may be independently secured in fixed positions upon the axle, or, as illustrated, they may be all mounted upon one split sleeve 8. The manner and means of mounting the gear and spacing members upon the axle is obviously a matter of mechanical expediency.

9 indicates a transverse support that is rigidly

secured to the truck and which, as by knuckle and pintle-joints 10, pendulously supports links 11, that, as indicated at 12, are bolted to the dynamo 13.

14 indicates the armature-shaft of the dynamo, whose axis is substantially in the same horizontal plane as the axis of the axle 3. The armature-shaft is provided with a fixed pinion 15, adapted to mesh with the gear 5, and with a spacing member 16, so disposed as to make peripheral contact against the face of the spacing members 6 and 7, respectively. The spacing members 6, 7, and 16, respectively, are so proportioned with respect to the gears 5 and 15 that the line of contact between the respective spacing members shall be in a plane tangential to the pitch-line of the gears, whereby the contact between the spacing members limits the engagement of the teeth of the gears to a required depth.

The spacing member 16 and the gear 15 may be made integral with the armature-shaft 14 or may be secured to it, as preferred.

As above suggested, one or more spacing members may be employed upon the axle and armature-shaft, respectively; but the employment of two upon each is obviously preferable, as affording means for preserving a true alinement of the armature-shaft in parallel relation to the axle.

17 indicates an arm bolted or otherwise secured, as indicated at 18, to the dynamo and terminating in a collar or half-collar 19, which supports the armature-shaft 14 between the gear 15 and the adjacent spacing member 16.

Having in the employment of the spacing members upon the axle and armature-shaft, respectively, provided against excessive engagement between the gear 5 and gear 15, I provide, on the other hand, means for yieldingly urging those members into engagement. Such means may consist simply of a plunger 20, carried within a housing 21 and actuated by a spring 22, whose tension is preferably controllable by means of an abutment-screw 23. The housing 21 is rigidly supported in its required proximity to the dynamo, as by a suitable bracket 24, rigidly fixed upon the truck. By means of the mechanism above described the pinion 15 may be constantly, but yieldingly, urged toward engagement with



the gear 5, so that through the rotation of the axle 3 motion may be imparted to the armature-shaft 14.

It will be apparent from the foregoing description that the dynamo may be swung back against the tension of the spring 22, so as to disengage the pinion 15 and gear 5. Through movement of the dynamo the disengagement of the gear and pinion may be effected by the thrust of the gear in case, for example, the armature should stick, as from overloading the dynamo or other causes.

The automatic disengagement of the gear and pinion in the manner immediately above described may be accomplished by the employment of ordinary gear-teeth or it may be promoted by sharply-wedge-shaped teeth.

I prefer to employ in connection with the movable dynamo a spring-actuated latch 25 upon the bracket 24, carried in the path of a catch 26, secured to the dynamo. Through the employment of such mechanism provision is made for holding the pinion 15 out of engagement with the gear 5 when the dynamo is thrown back, in the manner already described, by the thrust of the gear. Such automatic disengagement of the gear and pinion is most likely to be occasioned by some defective operation of the mechanism, and it is therefore desirable that the defective operation should be remedied before the gear and pinion reengage. Otherwise the continuous engagement of the gear and pinion if, for instance, the armature-shaft should stick fast might injure or destroy the gear or pinion, or both. The employment of the latch upon the bracket in conjunction with the catch upon the dynamo may also be employed for disengaging the gear and pinion at any time when it is thought desirable not to have the armature rotating, as in the case of a breakdown, for example.

The spacing members 6, 7, and 16, respectively, may be made of any suitable material, such as steel, compressed paper, or a frame of wood or metal covered with leather or rawhide. Such details of construction, as well as the precise manner of movably hanging the dynamo upon the truck, may well be left to the judgment of a skilled mechanic, and I merely specify such preferred form of embodiment of my invention and details of construction as recommend themselves to me at

the present time without the intention of limiting myself thereto.

What I claim is—

1. The combination with the wheels and axle as of a car-truck, of a dynamo movably supported in proximity to the axle, means for urging the dynamo toward the axle, intermeshing gears upon the axle and armature-shaft, respectively, spacing members near the opposite extremities of the armature-shaft, and cooperating spacing members upon the axle, substantially as set forth.

2. The combination with the wheels and axle as of a car-truck, of a dynamo movably supported in proximity to the axle, means for urging the dynamo toward the axle, a single pair of intermeshing gears located, respectively, upon the axle and armature-shaft, and spacing members carried thereon upon opposite sides of said gears, substantially as set forth.

3. The combination with a car-truck and its axle, of a dynamo pendulously supported from the car-truck, spacing members upon the axle and opposite ends of the armature-shaft, respectively, and gears connecting the axle and armature-shaft between said spacing members, substantially as set forth.

4. The combination with a car-truck and its axle, of a movable dynamo in operative relations to the axle, means for urging the dynamo into said operative relations, and latch mechanism adapted automatically to receive and hold the dynamo out of such operative relations, under conditions specified, substantially as set forth.

5. The combination with a car-truck and its axle, of a dynamo and its armature-shaft, movably supported in operative proximity to the axle, intermeshing gears upon the axle and armature-shaft, respectively, spacing members also secured upon the axle and armature-shaft, respectively, and an arm upon the dynamo provided with a bearing intermediate the gear and the spacing members, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

JOHN L. CREVELING.

Witnesses:

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ELMER E. ALLBEE.