

No. 769,920.

PATENTED SEPT. 13, 1904.

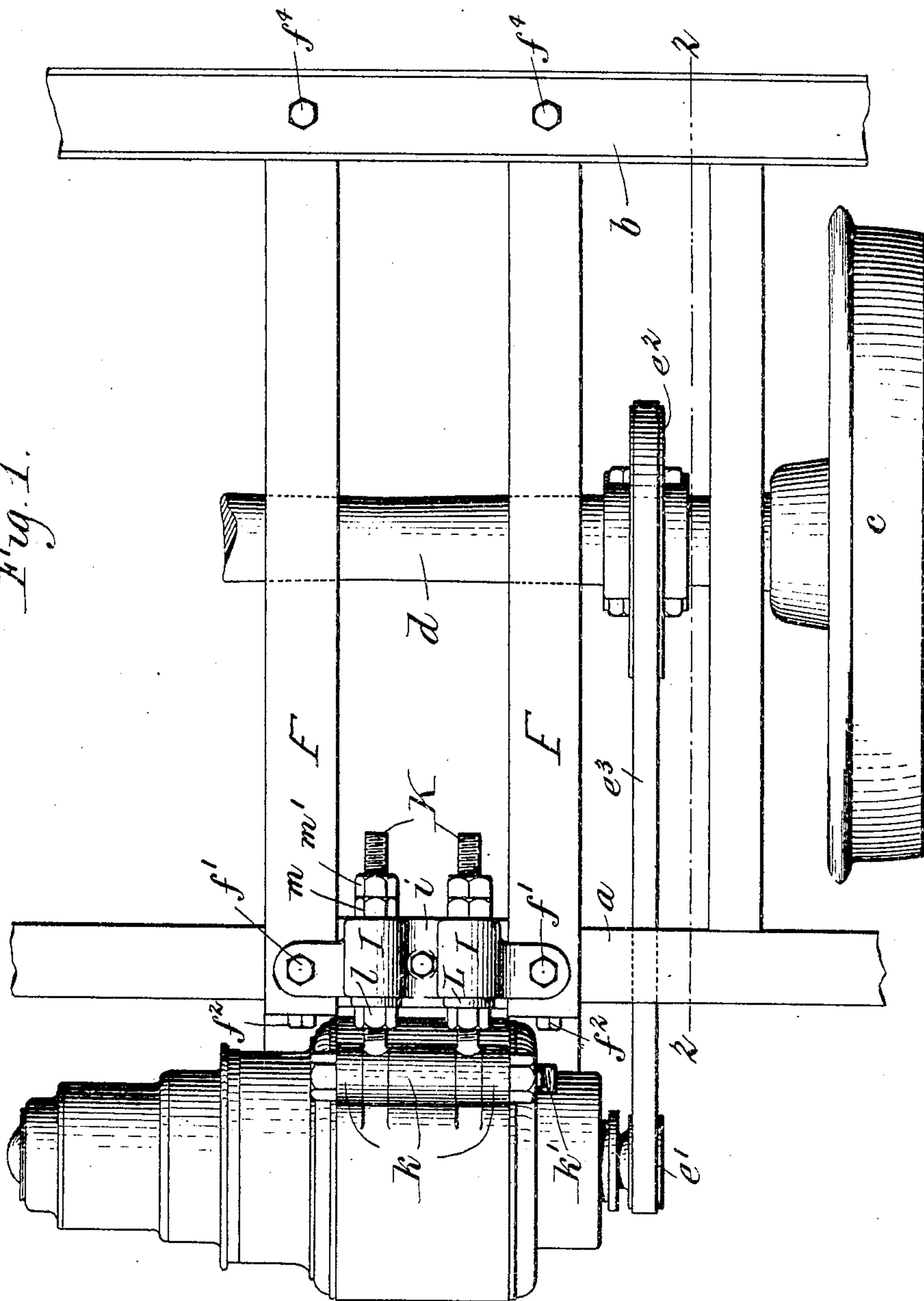
W. F. RICHARDS.

DYNAMO MOUNTING FOR RAILWAY CAR TRUCKS.

APPLICATION FILED NOV. 2, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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W. F. Richards Inventor.

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Attorneys.

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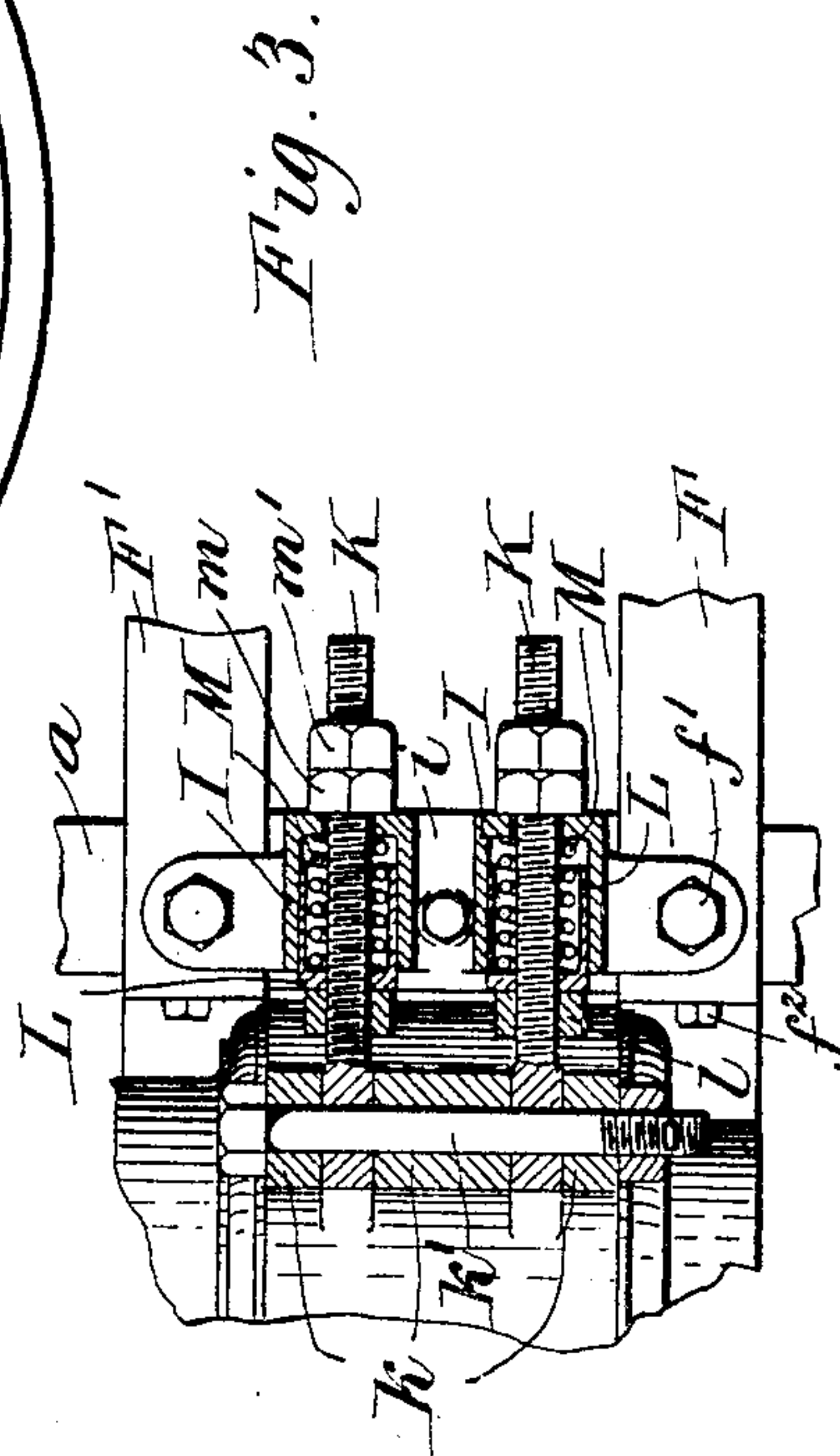
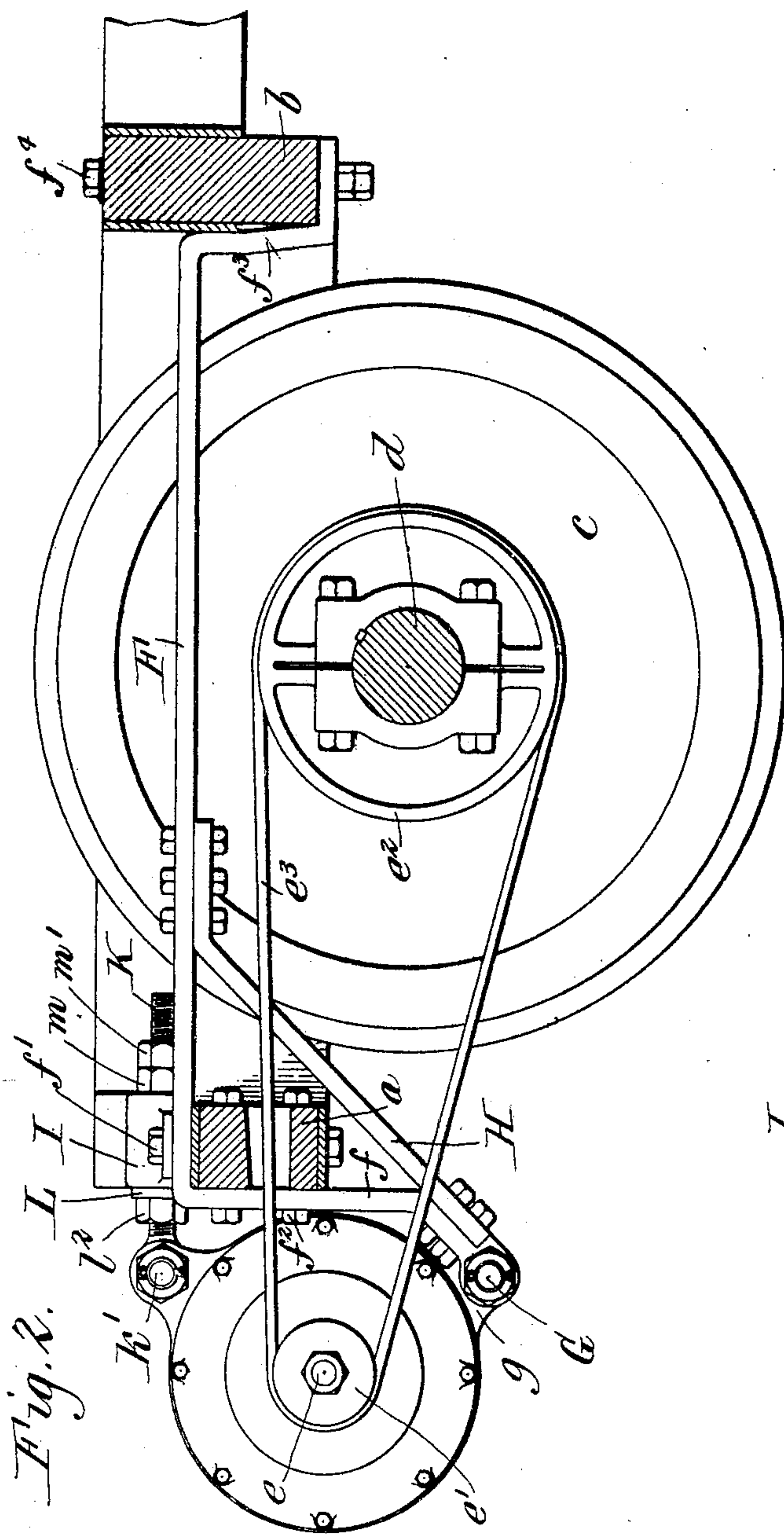
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UNITED STATES PATENT OFFICE.

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DYNAMO-MOUNTING FOR RAILWAY-CAR TRUCKS.

SPECIFICATION forming part of Letters Patent No. 769,920, dated September 13, 1904.

Application filed November 2, 1903. Serial No. 179,480. (No model.)

To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Dynamo-Mountings for Railway-Car Trucks, of which the following is a specification.

This invention relates to the mountings or supports for electric dynamos which are carried by the trucks of railway-cars and driven by one of the car-axes for supplying the car-lighting system or for other purposes. These dynamos are usually driven by a chain, belt, or the like running around pulleys on one of the car-axes and the dynamo armature-shaft. As there is often considerable horizontal play of the journals in the truck on account of the looseness of the journals in their boxes and the boxes in the truck-pedestal guides, the truck-frame is shifted relative to the journals when the brakes are applied, so far in some instances as to snap or stretch the driving chain or belt unless the dynamo is capable of yielding under such strain on the drive chain or belt to relieve the latter.

The object of the present invention is to provide a strong, practical, and desirable mounting for the dynamo which can be readily applied to the ordinary truck-frame without altering the latter and which will hold the dynamo practically rigid or stationary, except when it is necessary for the dynamo to yield to prevent injury to the drive chain or belt, as above indicated.

In the accompanying drawings, consisting of two sheets, Figure 1 is a plan view of a portion of a truck provided with a dynamo mounted in accordance with the invention. Fig. 2 is a longitudinal vertical sectional elevation thereof in line 2 2, Fig. 1. Fig. 3 is a horizontal section, partly in plan, through the cushion device for the dynamo.

Like letters of reference refer to like parts in the several figures.

The truck-frame is of well-known construc-

tion, comprising longitudinal beams and transverse end and intermediate beams *a b*, respectively.

c represents one of the car-wheels, and *d* the axle therefor; *e*, the armature-shaft of the dynamo, which is provided with a pulley or chain-wheel *e'*; *e''*, the drive-pulley or chain-wheel, secured to the car-axle *d*, and *e'''* the drive chain or belt running around the pulleys or wheels on the car-axle and armature-shaft for driving the latter.

The dynamo for which the mounting described in this application is employed is regulated electrically and does not have to be shifted toward and from the car-axle to tighten and loosen the drive belt or chain to vary the speed of the dynamo. It is therefore desirable to support the dynamo so that it will remain practically stationary or rigid except when the brakes are applied, as above mentioned, or when the car is suddenly started and stopped, rendering it desirable for the dynamo to yield slightly to overcome its inertia or momentum.

F F' represent two similar parallel supporting bars or brackets for the dynamo. Each bar has a horizontal longitudinal portion which passes over and rests on the end beam *a* of the truck and extends therefrom to the transverse intermediate beam *b*, and a vertical leg *f*, which depends below and in front of or outside of the end beam. The supporting bar or bracket is secured to the end beam of the truck by vertical and horizontal bolts *f'* or in any other suitable manner, and the inner end of the horizontal portion of the bar preferably has an offset horizontal foot *f''*, which underlies the intermediate truck-beam and is secured thereto by a vertical bolt *f'''*. The inner end of the supporting-bar could be secured to the intermediate truck-beam in any other suitable manner; but the described manner is desirable, as it enables the bar to be secured to the beam without removing or changing the position of any of the parts of the truck. The lower ends of the vertical legs

of the supporting-bars are preferably inclined outwardly and provided with loops or eyes through which and through one or more lugs *g* on the lower portion of the dynamo-frame passes a horizontal pivot bolt or pin *G*. The supporting-bars are strengthened and stiffened by inclined braces *H*, which are bolted or otherwise secured at their lower ends to the inclined portions of the legs of the supporting-bars and extend upwardly under the end beam of the truck, the upper ends thereof being bolted or otherwise secured to the horizontal portions of the supporting-bars.

The cushion device for retaining the dynamo stationary in its normal position and permitting it to yield, as before explained, is constructed as follows: *I* represents two cylindrical spring-pockets which are formed on or secured to a plate *i*, fixed on the end beam *a* of the truck by the vertical securing-bolts *f'* for the dynamo-supporting bars. The outer ends of the spring-pockets are open and their inner ends closed. *K* represents plunger-rods the outer ends of which are pivoted between upwardly-projecting lugs *k* on the dynamo-frame by a transverse bolt or pin *k'*. The plunger-rods extend through the spring-pockets, the inner ends of which are provided with holes for the rods, and carry plungers *L*, which slide in the spring-pockets. The plungers are held against outward movement and are adjustable on the plunger-rods by nuts *l*, screwed on the plunger-rods, which are screw-threaded. *M* represents coil-springs which are confined in the spring-pockets, between the inner ends thereof and the movable plungers *L*, which are preferably made hollow to receive the springs. The plunger-rods are provided outside of the inner ends of the spring-pockets with adjustable stop-nuts *m*, which bear against the inner ends of the spring-pockets to hold the dynamo from outward movement or movement away from the car-axle, and with lock-nuts *m'* for the stop-nuts. The dynamo can be adjusted toward or from the car-axle to properly tension the drive belt or chain by adjusting the plungers and stop-nuts on the plunger-rods, and the tension of the springs *M* can also be regulated as found necessary by adjusting the plungers and stop-nuts toward and from each other on the plunger-rods. The springs are preferably tensioned sufficiently to hold the dynamo from movement toward the car-axle under the pull of the belt or chain when the dynamo is working under the maximum load, but permit the dynamo to swing inwardly or toward the car-axle on its pivot-bolt *G*, when such movement is necessary by reason of the shifting of the truck-frame relative to the axle, to prevent stretching or breaking of the drive belt or chain, as above described. The pivot-bolt for the dynamo is located to one side of

the center of gravity of the dynamo, so that the latter tends to swing downwardly, thereby holding the stop-nuts on the inner ends of the plunger-rods against the ends of the stationary spring-pockets. The springs also tend to force the dynamo away from the driving-axle and hold the stop-nuts against the inner ends of the spring-pockets, so that the dynamo is held practically rigid or stationary except that it can yield toward the driving-axle, as explained, to relieve the drive belt or chain from undue strain.

I claim as my invention—

1. The combination of a truck-frame having transverse beams, supporting-brackets for a dynamo each having a horizontal portion passing over one of said frame-beams and secured to the other beam, and a leg which depends vertically beside and is secured to said first-mentioned frame-beam, braces connecting the lower ends of said depending legs and said horizontal portions of the brackets and passing beneath said first-mentioned beam, a dynamo arranged beside said legs, pivotal connections between said depending legs and the adjacent portion of the lower part of the dynamo, and means for normally holding said dynamo from pivotal movement, substantially as set forth.

2. The combination of a car-axle, a dynamo movably supported, drive connections between the dynamo and the car-axle, and means acting to normally hold said dynamo stationary and which positively holds the dynamo from movement away from the car-axle but permits a movement of the dynamo toward the car-axle, substantially as set forth.

3. The combination of a car-truck, and axle, a dynamo, a pivotal support for the dynamo located to one side of the center of gravity of the dynamo, a drive connection between the dynamo and said axle, a positive stop for limiting the movement of the dynamo away from said axle, and a yielding connection between the dynamo and the truck to permit the movement of the dynamo toward said axle, substantially as set forth.

4. The combination of a truck-frame, a dynamo, a pivotal support for the dynamo located below and to one side of the center of gravity of the dynamo, plunger-rods connected to the upper portion of said dynamo, stationary spring-pockets through which said plunger-rods extend, springs arranged in said pockets, plungers secured to said plunger-rods and bearing against said springs, and parts secured to said plunger-rods and bearing against said stationary spring-pockets to hold the dynamo from movement in one direction, substantially as set forth.

5. The combination of a truck-frame, a dynamo, a pivotal support for the dynamo located below and to one side of the center of

gravity of the dynamo, stationary spring-
pockets secured to said truck-frame, plunger-
rods pivoted to the upper portion of said dy-
namo and passing through said spring-pock-
5 ets, plungers adjustably connected to said
plunger-rods and working in said spring-pock-
ets, springs between said plungers and the
ends of said spring-pockets, and nuts on said

plunger-rods and bearing against the ends of
said spring-pockets, substantially as set forth. 10

Witness my hand this 24th day of October,
1903.

WILLARD F. RICHARDS.

Witnesses:

CHAS. W. PARKER,
C. M. BENTLEY.