

No. 685,516.

Patented Oct. 29, 1901.

P. KENNEDY.

MOUNTING AND DRIVING DYNAMOS ON CARS.

(Application filed Feb. 5, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

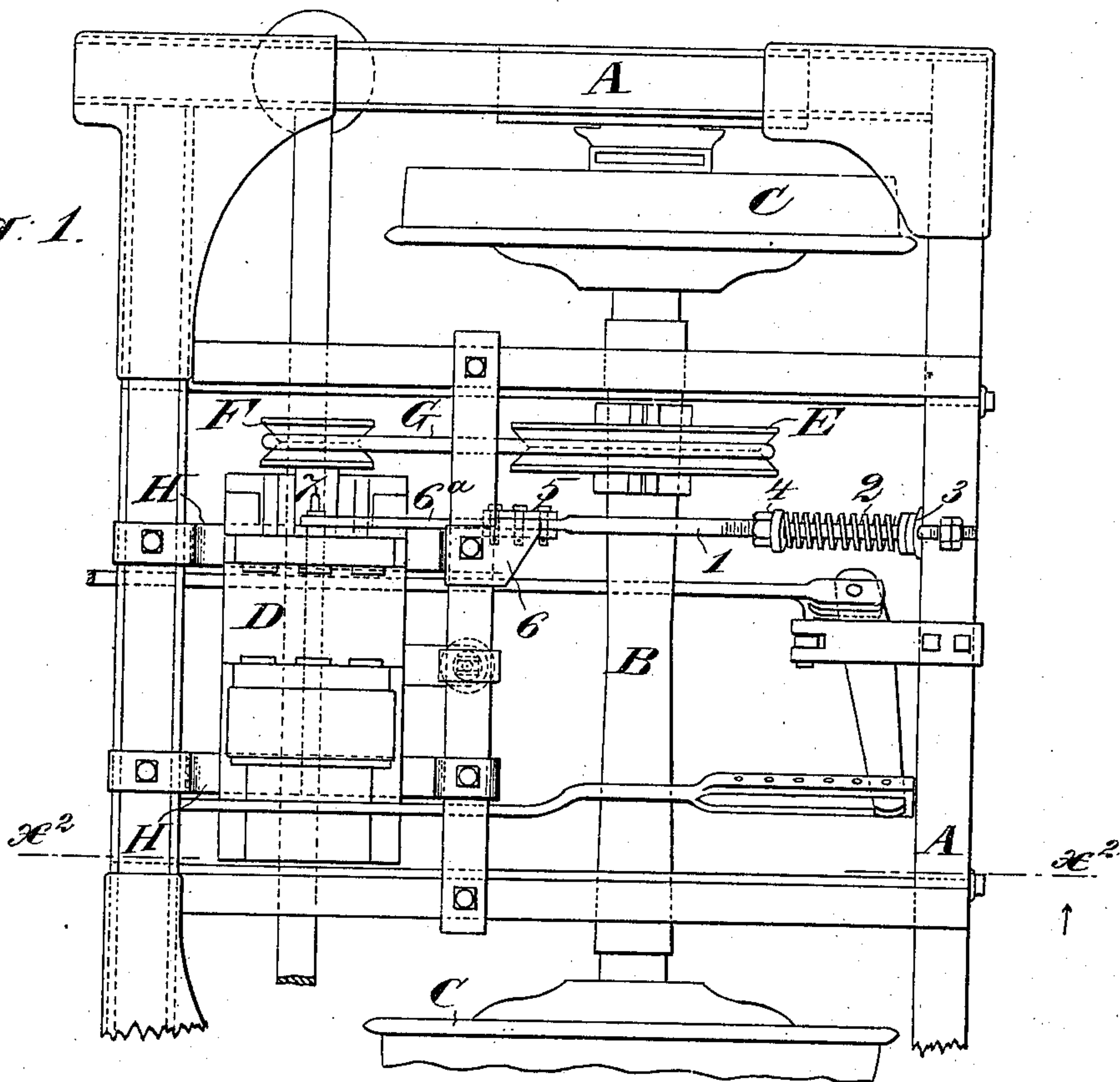
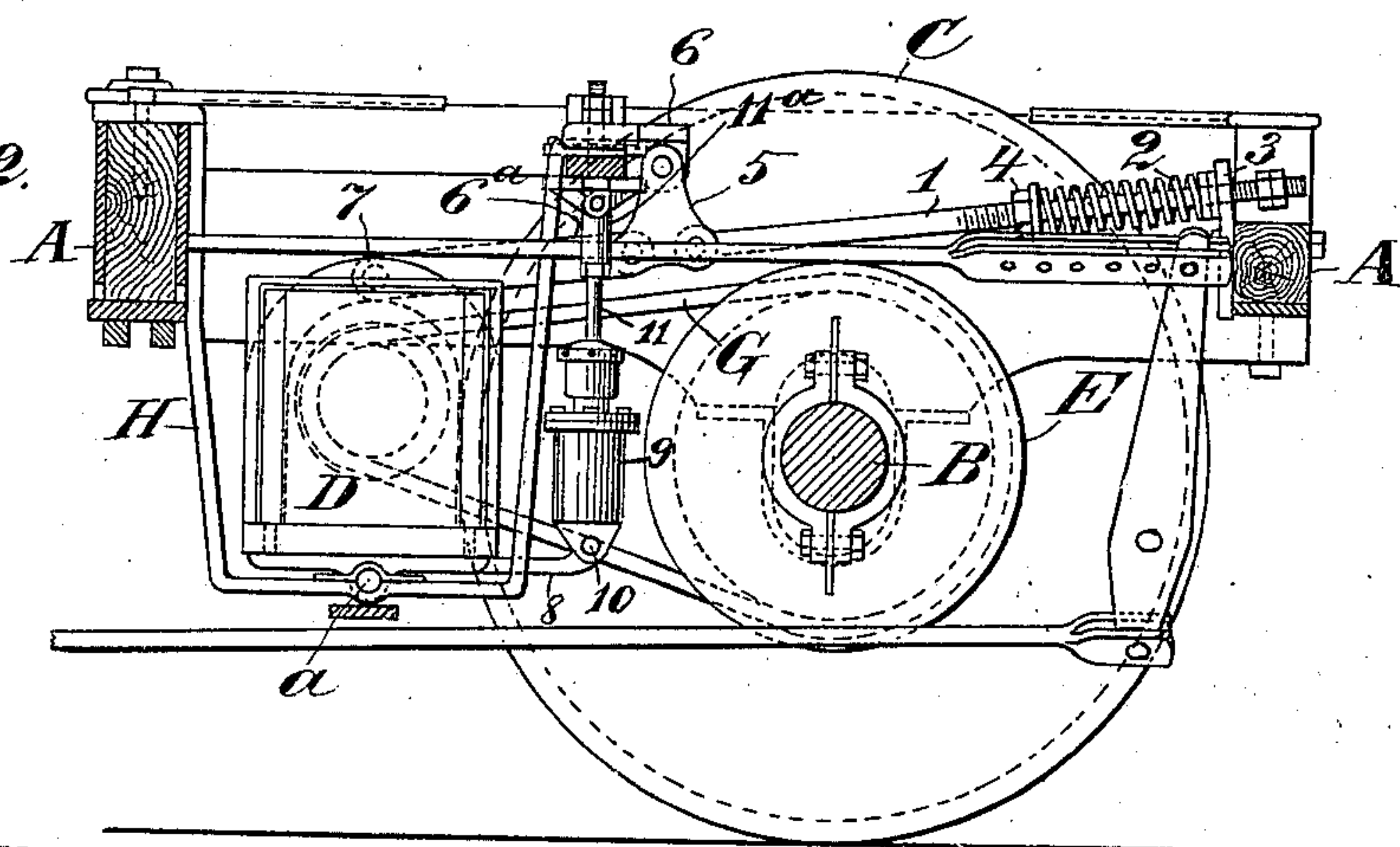


Fig. 2.



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Fig. 3.

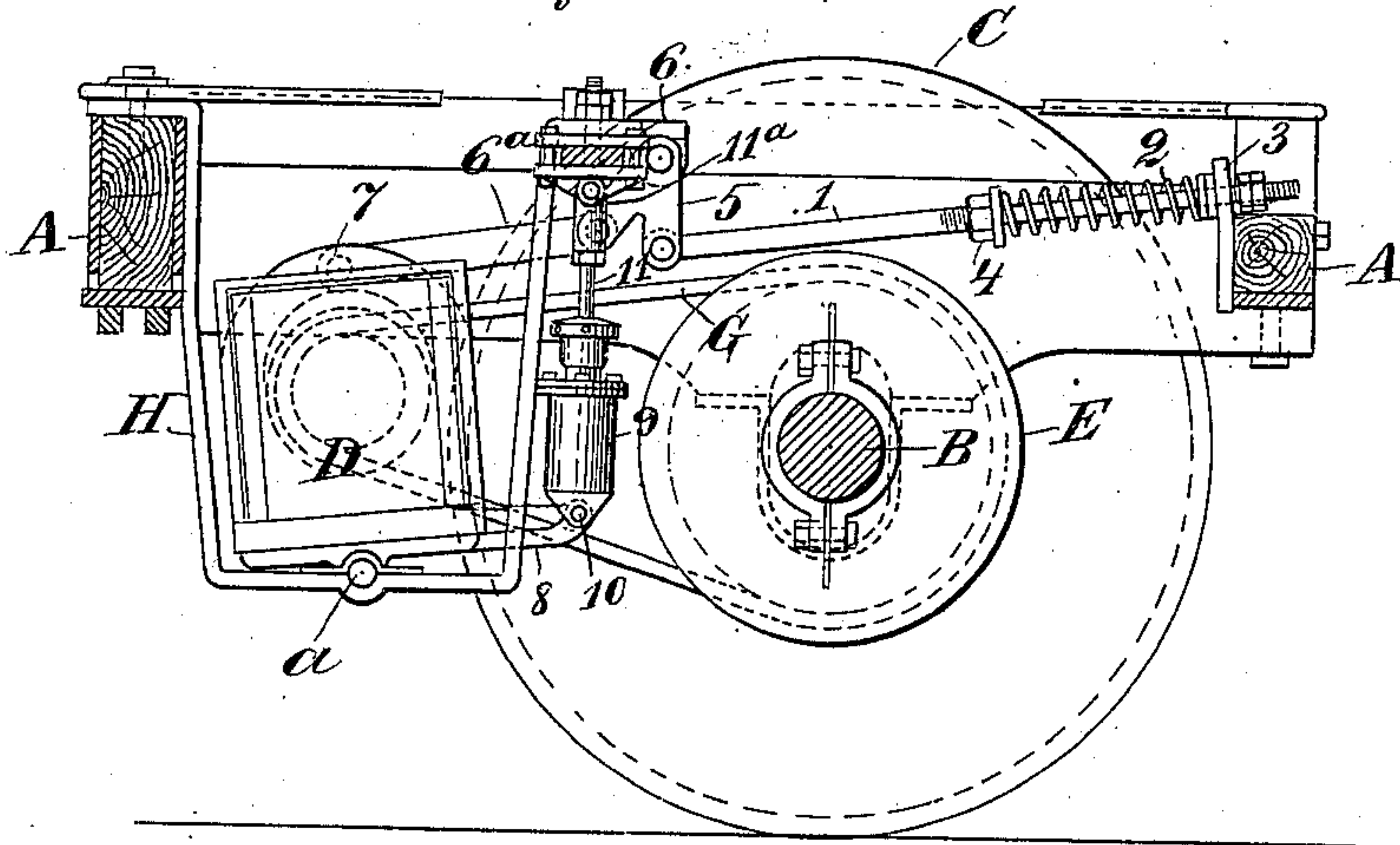


Fig. 4.

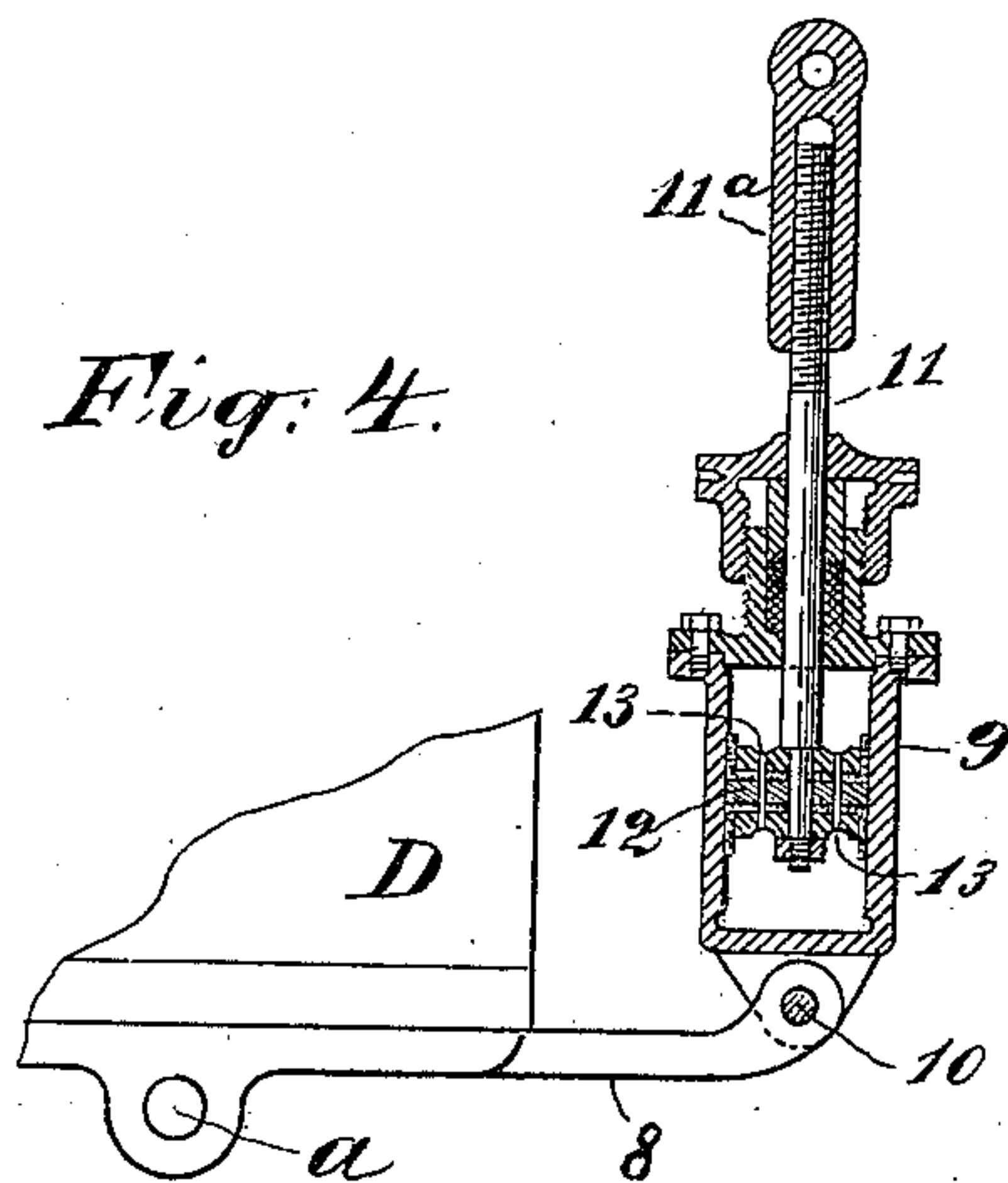
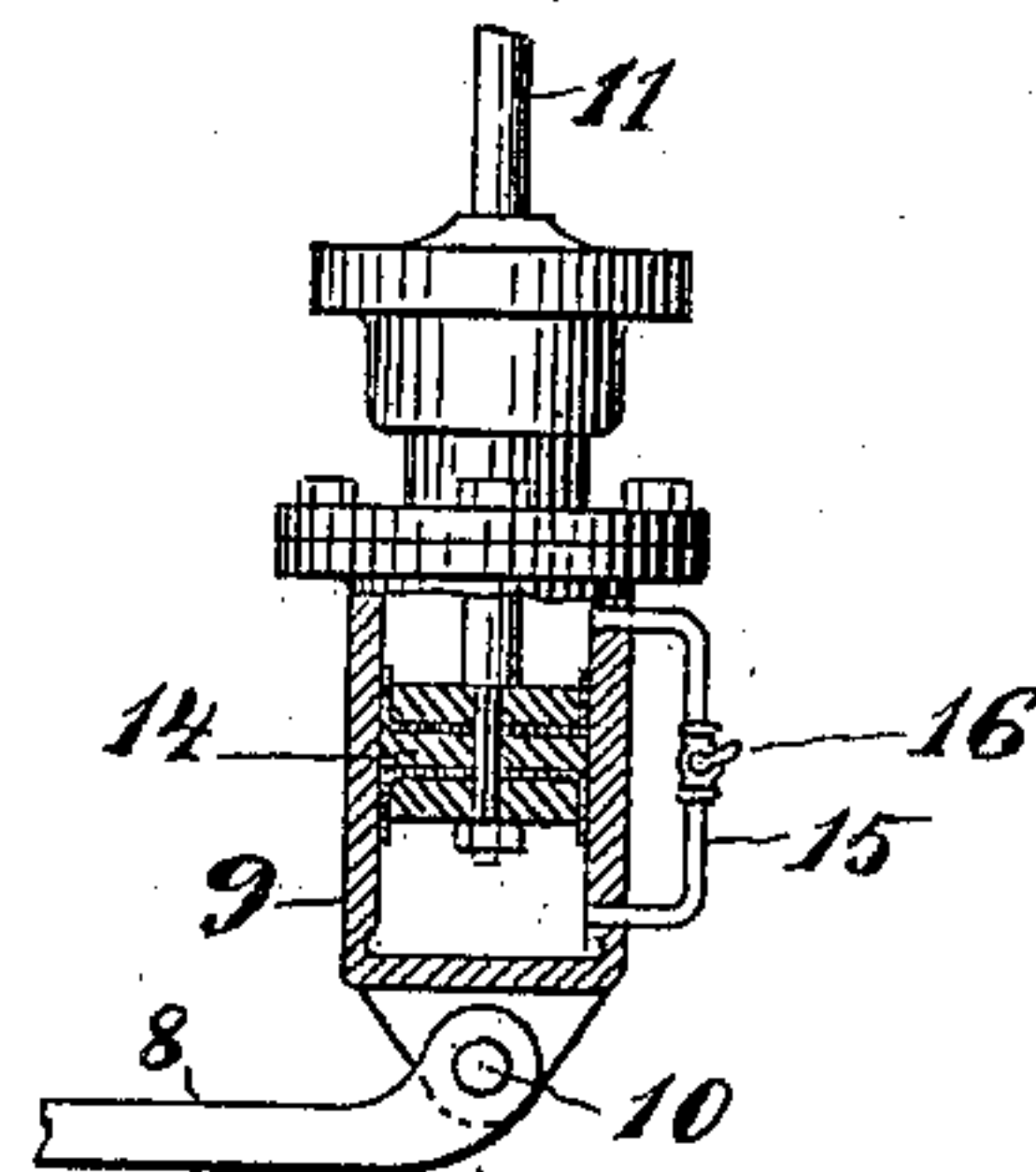


Fig. 5.



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MOUNTING AND DRIVING DYNAMOS ON CARS.

SPECIFICATION forming part of Letters Patent No. 685,516, dated October 29, 1901.

Application filed February 5, 1901. Serial No. 46,073. (No model.)

To all whom it may concern:

Be it known that I, PATRICK KENNEDY, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and city and State of New York, have invented certain new and useful Improvements in Mounting and Driving Dynamos on Cars, of which the following is a specification.

This invention relates to the mounting of a dynamo on the truck of a car for lighting purposes and the like, the dynamo being driven from the car-axle by a belt. It has been the practice heretofore to mount the frame of the dynamo on a rocking bearing in a stirrup-frame under the truck and to drive the dynamo from the axle by a belt, a spring being employed to maintain the belt taut or strained. It has been found, however, that by the stretching of the belt and the consequent slackening of the spring the tension of the latter becomes reduced and the spring loses its efficiency. It has also been found that the jolting of the cars, due to arrest of momentum and other causes, produces sudden vibrations of the dynamo on its rocking bearings, and these act injuriously on the belt and other parts.

Now the object of the present invention is to provide means for overcoming these objectionable features in part by providing an equalizer between the tension-spring and the dynamo and in part by providing a dash-pot device for absorbing the sudden vibrations of the dynamo on its rocking bearings.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a plan of the car-truck, together with the dynamo and its appurtenances. Fig. 2 is a vertical section of the truck transversely of the axles, taken in the plane indicated by line x^2 in Fig. 1. Fig. 3 is a view similar to Fig. 2, illustrating the operation of the equalizer; and Fig. 4 is a sectional view of the dash-pot and the parts which cooperate therewith. Fig. 5 illustrates another form of the dash-pot device.

A represents the truck-frame; B, the axle; C, the wheels thereon; D, the dynamo. E and F are the belt-sheaves, by which the dynamo is driven from the axle through a suit-

able belt G. The frame of the dynamo is provided at its bottom with journals a , which have rocking bearings in a stirrup-frame formed of brackets H, suspended from the truck-frame. All of these features are known. In the known construction the belt G is kept strained by means of a spring adapted to swing or rock the top of the dynamo over and away from the car-axle, and a part of the present invention relates to the interposition of an equalizer between this spring and the dynamo, whereby as the belt G becomes stretched and the tension of the spring thereby relaxed the elastic pressure of the spring on the dynamo is maintained substantially uniform. This equalizing device will now be described.

1 is a spring-rod on which is a spring 2, embraced between a shoulder 3 on the truck-frame and a collar or nut 4 on the rod 1. This rod is coupled at its end to an equalizing-rocker 5, suspended from a bracket 6 on the truck-frame. This rocker is in substance an "elbow-lever," and for convenience of explanation of its functions it will be hereinafter referred to as such. The spring-rod is coupled to one of the arms of the elbow-lever 5, and to the other arm thereof is coupled a link 6^a, the other end of which is coupled to the upper part of the dynamo-frame at 7.

Fig. 2 shows the spring-rod 1 and the link 6^a aligned, in which position the spring 2 will act precisely as it would if said rod and link were one continuous part or rod—that is, it will act directly on the dynamo; but when in course of time the belt G becomes stretched and the spring becomes more extended (see Fig. 3) the lever 5 will be moved about its point of suspension, so as to increase the leverage with which the spring acts and at the same time reduce the leverage with which the link 6^a resists the pressure of the spring. Thus as the spring weakens in tension by extension the mean leverage with which it acts increases proportionately, thus maintaining uniformity in the action of the spring under varying conditions of tension.

The dash-pot device will be best understood by reference to Fig. 4. From the frame of

the dynamo an arm 8 projects substantially horizontally, and this arm carries a cylinder 9, mounted to rock on the arm at 10. A piston-rod 11, coupled to the truck-frame at its upper end, depends into the cylinder through a stuffing-box and is secured at its end within the cylinder to a plunger or piston 12. The cylinder is filled with some fluid which will not congeal from cold, and the plunger has in it an aperture or apertures 13. Any rocking movement of the dynamo causes the plunger to move through the fluid in the cylinder, and this movement is resisted and retarded yieldingly by the fluid. This prevents any sudden or rapid vibrations of the dynamo. For the purpose of adjustment the piston-rod 11 is preferably made extensible, as clearly shown in Fig. 4. To effect this object, the rod proper is made to screw into a socket-piece or upper portion 11^a, said piece being coupled to the truck-frame above.

Any fluid—as air, for example—might be employed in the dash-pot cylinder with fairly good results; but an incompressible liquid, as glycerin, is preferred.

Of course the contracted passage by which the liquid flows from one side of the piston to the other may be provided in any convenient way and need not necessarily be in the piston. For example, in the construction illustrated in Fig. 5 the piston 14 is not perforated or apertured, and the liquid or fluid flows through a tube 15, connected at its ends with the opposite ends of the cylinder and by preference provided with a cock 16, whereby the area of the passage may be more or less restricted.

Having thus described my invention, I claim—

1. A car-truck having a dynamo mounted on rocking bearings thereunder, a belt and pulleys for driving said dynamo from the axle, a tension-spring which maintains the tension on said belt, and an equalizer between said spring and dynamo which maintains the elastic pressure of the spring on the belt constant when the belt stretches.

2. A car-truck having a dynamo mounted on rocking bearings thereunder, a belt and pulleys for driving said dynamo from the axle, a rocking equalizer 5 mounted on the truck-frame, said equalizer being in the form of an elbow-lever, a spring-rod 1, coupled at one end to an arm of said equalizer, a spring on said rod, and a link coupled at one end to the other arm of said equalizer and at its other end to the dynamo.

3. A car-truck having a dynamo mounted on rocking bearings thereunder, a belt and pulleys for driving said dynamo from the axle, a tension-spring which maintains the tension on said belt, and a dash-pot device which prevents sudden oscillations of the dynamo, said device comprising a cylinder containing liquid and mounted to rock on an arm extending from the dynamo, an apertured plunger in said cylinder, and a rod connecting said piston with the truck-frame, substantially as set forth.

4. The combination with the car-truck, of the dynamo mounted to oscillate on journals thereunder and provided with an arm 8, the cylinder 9, mounted to oscillate on said arm, the apertured piston 12 in the cylinder, and the piston-rod coupled to the truck-frame at its upper end and extensible longitudinally for purpose of adjustment, substantially as set forth.

5. The combination with the car-truck, the dynamo mounted on rocking bearings thereunder, a belt and pulleys for driving said dynamo from the axle, a tension-spring which maintains elastic tension on said belt, and a dash-pot device, adapted to check the too-rapid oscillations of the dynamo due to movements of the car, substantially as set forth.

In witness whereof I have hereunto signed my name, this 29th day of January, 1901, in the presence of two subscribing witnesses.

PATRICK KENNEDY.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.