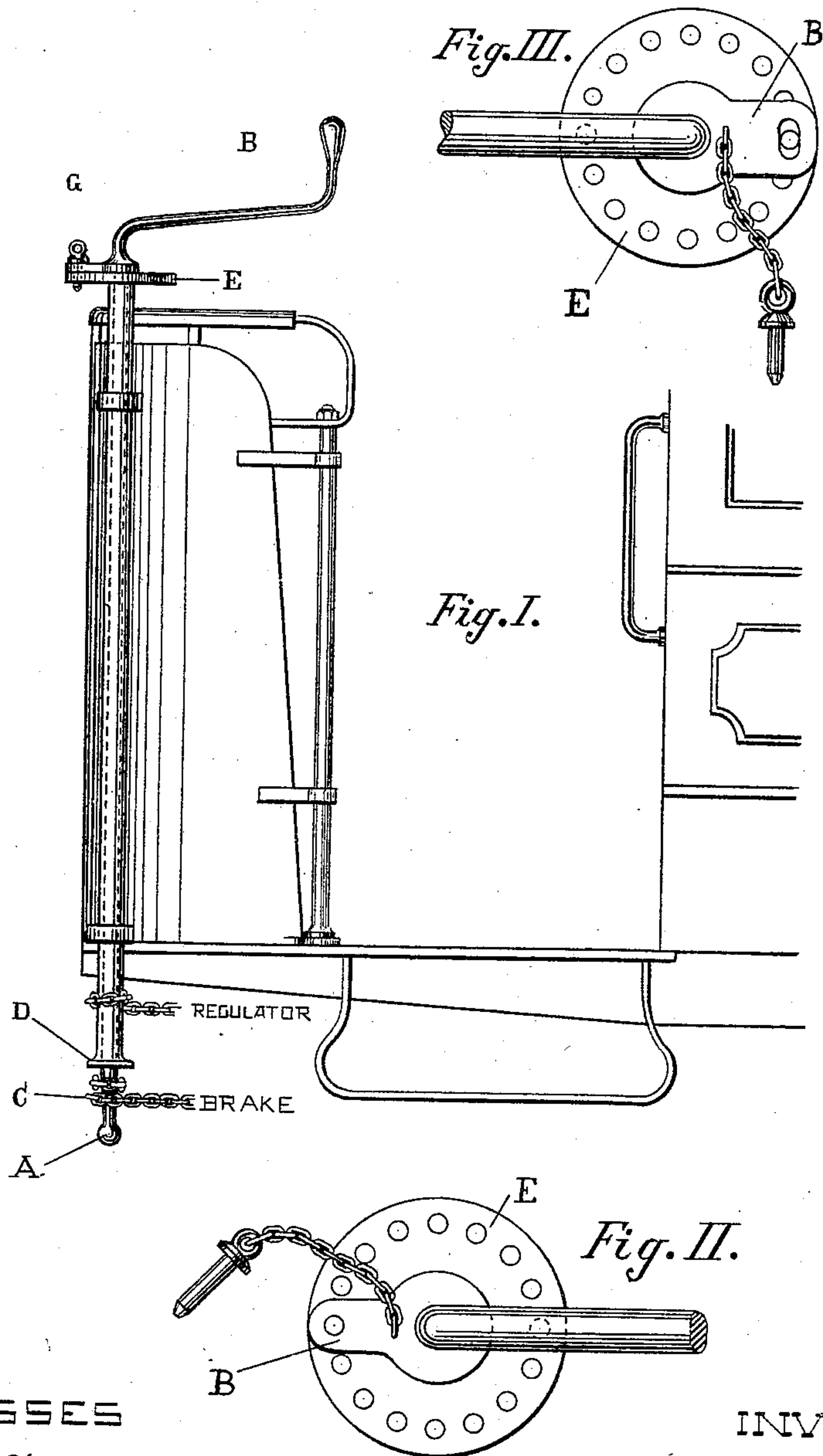


(No Model.)

E. M. BENTLEY.
ELECTRIC RAILWAY CAR.

No. 444,480.

Patented Jan. 13, 1891.



WITNESSES

Joseph Aue.

Julien M. Elliot.

INVENTOR

Edward M. Bentley
by Bentley & Knight
Atty.

UNITED STATES PATENT OFFICE.

EDWARD M. BENTLEY, OF NEW YORK, N. Y.

ELECTRIC-RAILWAY CAR.

SPECIFICATION forming part of Letters Patent No. 444,480, dated January 13, 1891.

Application filed September 8, 1888, Serial No. 284,894. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. BENTLEY, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

My invention relates to electric-railway cars, in which a common actuated device is employed for the regulator or controller and the brakes—for example, such a device as is shown in Patent of W. H. Knight, No. 382,990, May 15, 1888. It has been found necessary in practical operation to employ some means of compensation for the wear of the brake-shoe which tends to throw out of adjustment the regulator or controller relatively to the brake. This will appear from a consideration of the fact that for the regulator a definite range of motion is always necessary, while for the brakes the range varies as the brakes wear. To provide means against this difficulty, I have devised a simple method of adjustment, so that the operator can from day to day, or more frequently, if necessary, adjust the relation between the regulator and the brakes, so that as the brakes wear, necessitating a further movement of the brake-spindle, the operator can by the adjustable connection take a new hold, giving the same relation of the regulator to the brake mechanism which it had before any wear took place upon the brake-shoes.

The invention is illustrated upon the accompanying drawings, wherein—

Figure 1 shows the ordinary brake-spindle on the platform of a car adapted to my invention. Figs. 2 and 3 are details, the latter showing an additional improvement, which may be employed in connection with the device in the former views.

In Fig. 1, A is the ordinary brake-spindle on the platform of a car, terminating at its upper end in the handle B and at the lower end in the bearing upon which is wound the brake-chains C. Surrounding this brake-spindle is a sleeve or tube D, extending substantially the whole length of the spindle A and having at its upper end a disk E, provided with a circular series of holes which come directly under the corresponding hole in the handle B. Upon the sleeve D is wound

a chain F in an opposite direction to the winding of chain C. The chain F leads to a resistance-box, a switch, or similar regulating apparatus for the car. A pin G is employed to connect handle B with disk E, the pin being passed through the hole in B and then through one of the circular series of holes in disk E. It will be readily understood that when the handle B is turned, the pin G being in place, one direction of movement will wind up chain C and release chain F, while the opposite direction of movement will wind up chain F and release chain E. By this arrangement a single controlling device for the car is all that is necessary. Turned in one direction it will set the brakes, and turned in the other direction will release the brakes and start the car. It will also be apparent that without some means of adjusting the connection between the spindle C and inclosing sleeve D the wear on the brake-shoes, necessitating an extra winding on the chain C, would vary the range also of the chain F. To obviate this, the operator will withdraw the pin G and insert it through a succeeding hole in the series on disk E. This will give a new adjustment to the relation between the spindle and sleeve and will permit of a further range of movement on one chain without any substantial variation in the range of the other chain.

In Fig. 3 the hole through handle B is shown in the form of a slot. This will permit a further range of movement on the brake-spindle than is given to the sleeve, so that the brakes will be fully off before the car is started, and, on the other hand, the regulator will have acted completely before the brakes are set.

It will be noted that I employ two independent connections, one for a brake and the other for a regulator, because thereby desired adjustments may readily be made and either connection may be replaced without disturbing the other. Inasmuch as the spindle and the sleeve have different diameters the two connections are operated at different rates of speed, and more chain will be wound upon the spindle than will be unwound from the sleeve. Whenever, therefore, the normal throw of the brake is not the same as that of the regulator, I compensate for this differ-

once by proportioning the actuating devices to the extent of movement which the brake and regulator, respectively, are to have.

A further advantage in my invention arises from the fact that the two actuating connections may be readily disconnected by simply taking out the pin G, so that the motor can be regulated and the brake applied independently when desired, the disk E upon the sleeve being used as a hand-wheel.

What I claim as new, and desire to secure by this patent, is—

1. The combination, with a regulating device for an electric motor propelling a vehicle and a brake for the vehicle, of a common actuating device connected with both regulator and brake, so as to actuate both together, and means for adjusting one of said connections relatively to the other to preserve the desired relation of throw between them.

2. The combination, with a regulating device for an electric motor propelling a vehicle, of an actuating device therefor and a brake for the vehicle having an adjustable connection with the actuating device, such that a given movement of the actuating device may impart a varying throw to the brake-shoes.

3. The combination, with a brake-spindle on an electrically-propelled vehicle, of a chain actuating the brake by being wound around the spindle, a regulator for the propelling electric motor, a sleeve adjustable around said spindle, and a second chain leading to the regulator and wound on and off the said sleeve.

4. The combination, with an electrically-propelled vehicle and a regulator for the propelling electric motor, of a sleeve on and adjustable around the spindle from which the regulator is controlled, and a disk or extension on said sleeve, by which the sleeve is adjustably connected to the spindle.

5. The combination, with a brake-spindle on an electrically-propelled vehicle, of a sleeve thereon connected with the regulator for the vehicle, the two being loosely connected together, so that a preliminary movement may be given to one before both are moved together.

6. The combination of a device regulating or controlling the propelling-power of an electrically-propelled vehicle, and a brake for the vehicle, with operating connections for the two, respectively, whose length relative to one another is adjustable, and a common actuating device with which both are connected, substantially as described.

7. The combination of a brake and regulating device for the motor of an electrically-propelled vehicle with operating connections for the two, respectively, both leading to the driver's stand and each adapted to be operated independently, and means for connecting both together, but detachable at will, whereby the regulator and brake may be operated simultaneously or independently.

8. The combination, with a regulating device for an electrically-propelled vehicle and a brake for the vehicle, of operating connections for the two loosely connected together, so that a preliminary movement may be given to one before both are moved together.

9. The combination, with the brake and regulator for the motor of an electrically-propelled vehicle, of the brake-spindle, the sleeve adjustable thereon, a stop for holding the sleeve to the spindle in its adjusted position, and operating connections for the brake and regulator connected with the said spindle and shoe, as described.

EDWARD M. BENTLEY.

Witnesses:

R. W. BLACKWELL,
JULIEN M. ELLIOT.