

No. 688,130.

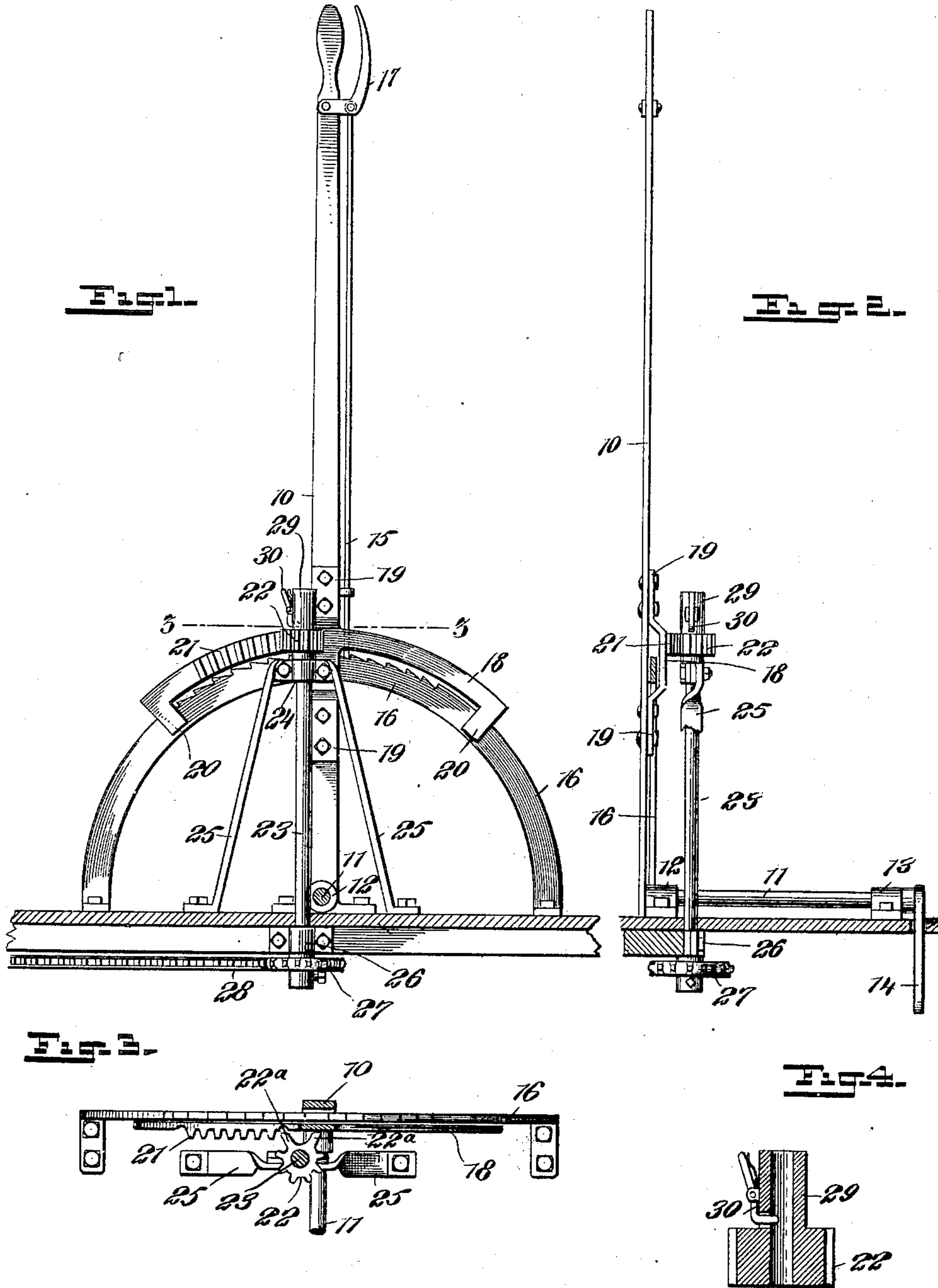
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B. W. SCOTT.

CONTROLLER FOR ELECTRIC CARS.

(Application filed Apr. 30, 1901.)

(No Model.)



WITNESSES:

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CONTROLLER FOR ELECTRIC CARS.

SPECIFICATION forming part of Letters Patent No. 688,130, dated December 3, 1901.

Application filed April 30, 1901. Serial No. 58,120. (No model.)

To all whom it may concern:

Be it known that I, BARTON W. SCOTT, a citizen of the United States, and a resident of San Jose, in the county of Santa Clara and State of California, have invented a new and Improved Controller for Electric Cars, of which the following is a full, clear, and exact description.

This invention relates to improvements in devices for controlling the brake mechanism of an electric car and for controlling or regulating the electric current, the object being to provide a simple device by means of which both the brake and current may be quickly controlled by an operation of a single lever instead of operating two levers, as is the usual practice, thus shortening the time required to stop a car in case of danger and reducing the possibility of confusion on the part of the motorman and leaving one hand of the motorman free for ringing the bell or for other service.

I will describe a controller for electric cars embodying my invention, and then point out the features of novelty in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of a controlling device embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a section on the line 3 3 of Fig. 1, and Fig. 4 is a sectional view of a pinion employed.

Referring to the drawings, 10 designates a hand-lever, from the lower end of which a rock-shaft 11 extends. This rock-shaft has bearings in boxings 12 and 13 on the car-platform and has a downwardly-extended arm 14 for connection with a brake mechanism. Mounted on the hand-lever is a stop-rod 15, adapted to engage with a segmental rack 16, attached at its ends to the car-platform, this rod being operated in the usual manner by means of a hand-lever 17. Carried by the lever 10 is a segmental plate 18, this plate being attached to the lever at its center by wings 19, which extend in opposite directions from the plate and are bolted to the lever. At the ends this plate 18 has downwardly-extended portions 20 for engag-

ing against the surface of the rack-plate 16 and forming a guide to prevent lateral movements of the plate. At one side of the center the plate 18 is provided with rack-teeth 21, while at the other side the plate is smooth. These rack-teeth are designed to engage with a pinion 22, mounted on a shaft 23, which at its upper portion has a bearing in a boxing 24, supported by standards 25, and the lower portion of the shaft extends through the car-platform and has a bearing in a boxing 26. Below this boxing a sprocket-wheel 27 is attached to the shaft, and a chain 28 extends from the sprocket-wheel to a connection with the electric switch or controlling device, which it is not deemed necessary to show herein. The pinion 22, as shown in Fig. 3, is provided with two prongs or forks 22^a.

There will be one of these devices arranged at each end of the car, excepting that each device will not be provided with the pinion 22 except when in use. Therefore I make this pinion removable, so that it can be carried from the shaft at one end of the car to the shaft at the other end of the car. As a means for attaching the pinion to the shaft to cause the shaft to rotate therewith the pinion is provided with a hub portion 29, through which the shaft passes, and a lock-bolt 30 is pivoted to the outer side of this hub and extends through an opening in the hub to engage in a recess in the shaft.

The operation and use of the device are as follows: The new mechanism is purposely so constructed and adjusted that the brakes and the current will both be off, leaving the car free for coasting when the controlling-lever is in a central or vertical position, as indicated in the drawings. Assuming the car to be coasting and the motorman receives a signal to stop, he simply pulls the lever 10 back and sets the brake in the usual way. The plate 18 of course moves with the lever. The rack 21 moves back from the gear 22, and the plain surface of the arched or segmental plate 18 slides along the front of the two prongs or forks of said gear 22. Hence it will be seen that the pinion 22 is not rotated or in any way affected by any movement of the lever back of the center or vertical position, thus allowing the lever to be freely used exclusively as a brake-lever back of the current-

cutting center. Assuming the motorman to receive a signal to go ahead, he simply loosens the brake-lever in the usual way and pushes it forward to the central or vertical position.

5 This brings the rack 21 against the pinion 22, and a further forward movement of the lever causes the rack 21 to act on the pinion and rotate it to the right, thus turning on the current by means of the shaft 23 and sprocket-wheel 27. The notches or teeth on the plate 18 are so regulated that each notch on the plate corresponds to one point on the rheostat. Hence for each notch the motorman sets his lever forward he gives one point more of current. The motorman by moving the lever forward to the last notch—say a notch or two at a time—revolves the pinion one turn, which gives the full current. Assuming the motorman to receive a signal to stop, he simply moves the lever back at one quick stroke and sets the brake up tight. The act of pulling the lever from the forward notch back to the center or vertical point rotates the pinion back to the position shown in Fig. 3, thus cutting off the current. The continuation of the backward stroke of the lever past the center has no further effect on the pinion, which remains stationary when the lever is used back of the center. Thus it will be seen that the lever is used as a brake-lever back or to the right of the center, while forward or to the left of the center the lever is used as a current-controller. Hence it will be seen that when the lever is in the forward notch and the car is speeding forward under full current all that is necessary to do to stop the car is simply to give the controlling-lever a full back stroke.

40 It is obvious that the operation of my device is so simple that the motorman cannot become confused in time of danger and make a fatal mistake, as sometimes happens in turning the ordinary mechanism or crank in the wrong direction.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A controller for the electric current and brake mechanism of a car, comprising a hand-lever, a stop-rack, a stop-rod on the lever for engaging with the rack, a toothed plate carried by the lever and having portions for engaging against the rack, a shaft, and a pinion on said shaft for engaging the teeth of the plate, substantially as specified. 55

2. A controller for the electric current and brake mechanism of a car, comprising a hand-lever, a segmental stop-rack, a stop-rod carried by the lever for engaging with said rack, a segmental plate carried by the lever and having portions at its end for engaging against the surface of the rack, said plate having teeth at one side of its center, a plane surface at the opposite side of said plate, a shaft, a pinion on said shaft for engaging with the rack-teeth on the plate, and connections between said shaft and the switch mechanism for the electric current, substantially as specified. 65

3. A controller for the electric current and the brake mechanism of a car, comprising a lever, a rock-shaft extended from the lever and adapted for connection with the brake mechanism, a segmental plate carried by the lever and having a rack at one side of its center, a vertical shaft adapted for connection with the electric-current switch mechanism, and a detachable pinion for said shaft, for engaging with the rack, substantially as specified. 75

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 80

BARTON W. SCOTT.

Witnesses:

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A. H. JARMAN.