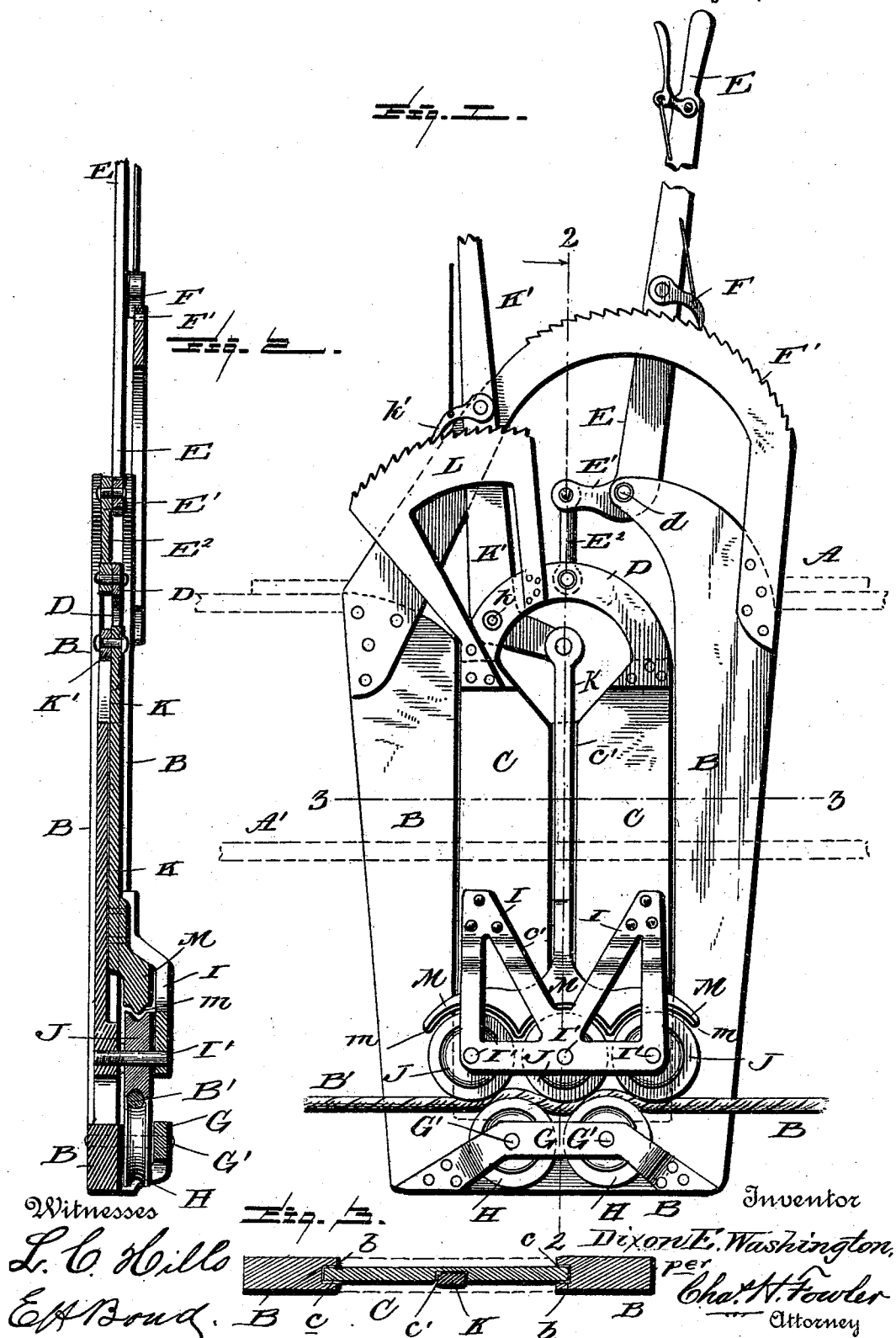


D. E. WASHINGTON.
GRIP FOR CABLE CARS.

Patented May 2, 1893.



UNITED STATES PATENT OFFICE.

DIXON E. WASHINGTON, OF LUMBER, ASSIGNOR OF ONE-HALF TO WARREN T. WHITEMAN, OF JEFFERSON, TEXAS.

GRIP FOR CABLE CARS.

SPECIFICATION forming part of Letters Patent No. 496,499, dated May 2, 1893.

Application filed October 27, 1892. Serial No. 450,165. (No model.)

To all whom it may concern:

Be it known that I, DIXON E. WASHINGTON, a citizen of the United States, residing at Lumber, in the county of Marion and State of Texas, have invented certain new and useful Improvements in Grips for Cable Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in grips for cable cars and it has for its objects among others to provide a simple and cheap grip by which the wear on the cable will be diminished to the minimum, and which shall be composed of few parts, those readily assembled and not liable to get out of order, and in which practically all the wear comes upon the grip and not upon the cable. The grip is composed of rollers, and a brake is also provided for engaging the upper set of rollers to press the same upon the cable. The upper set of rollers as well as the brake are movable vertically and are under the control of the gripman.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved grip in operative position. Fig. 2 is a vertical cross section on the line 2 2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a longitudinal horizontal section on the line 3 3 of Fig. 1.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the floor of a car, and A' the top of the slot in the track or road bed through which the grip support works.

B is a plate which is secured to the car floor in any suitable manner and which projects downward through the slot or groove in the track and some five or six inches below the

rope B' as seen in Fig. 1. This main plate is in the form of a U and its inner faces are provided with channels or grooves *b* in which work the tongues *c* of the plate C. This plate C is arranged between the vertical portions of the plate B as shown and extends from the car floor downward but not quite to the rope. It is affixed to the car in any suitable manner. The upper end of the plate C is provided with a curved plate D which is secured thereto in any well known way and adapted to be raised and lowered with said plate. This plate C is designed to be raised and lowered by the lever E which is pivoted at *d* to the main plate B as seen in Fig. 1 and has its short arm E' pivotally connected with the plate D as by a link E². This lever is provided with a spring pawl or dog F which engages the teeth of the curved bar F' which connects the upper ends of the vertical portions of the plate B as shown.

To the lower end of the plate B is attached an arm or bracket G in which and the said plate are journaled the axles G' which carry the grooved wheels or pulleys H upon which the rope travels as seen in Figs. 1 and 2.

I is an arm or bracket secured to the plate C near its lower end and in which and the said plate are journaled the axles I' which carry the grooved wheels or pulleys J, three in number and which are arranged to alternate with the wheels H as seen in Fig. 1.

The plate C is provided with a vertical groove or channel *c'* as shown in which works the vertical bar K which at its upper ends is pivotally connected with the short arm of the lever K' which is pivoted at *k* to the curved plate D at one side of the center thereof and which lever is provided with a spring pawl *k'* adapted to engage the teeth of the toothed quadrant L secured to and rising from the curved plate D as shown best in Fig. 1. The arm K carries at its lower end a brake M which is shaped so as to fit the upper faces of the upper wheels J, being provided with a rib *m* as seen best in Fig. 2 so that when the brake is depressed the contact surface will be increased and the grip firmly held upon the cable.

In operation the upper wheels are forced

down hard on the rope by means of the lever E and the rope firmly gripped between the upper and lower pulleys, said pulleys being loose upon their axles and consequently turning freely thereon as fast as the rope travels.

5 When it is desired to start the car, the brake is forced down on the upper wheels and as motion of the wheels is decreased by the action of the brake the car moves forward and
10 when it has attained the speed of the rope all the wheels are perfectly at rest. It is only when the car is traveling at a less speed than the rope that the wheels turn at all, thus preventing any slipping on the rope whatever, as
15 it would require more power to slip the wheels on the rope than is necessary to move the car.

The wheels or pulleys may be decreased or diminished in number and arranged with relation to each other in any manner found best
20 adapted to the purpose, and I reserve the right to make such changes or modifications in the details of construction as would come within ordinary mechanical skill, and this without departing from the principle of my
25 invention.

What I claim as new is—

1. The combination with the plate and its wheels, of the movable plate with its wheels,

and the movable brake adapted to bear upon the movable wheels and curved to conform to
30 the curvature of all of said wheels and having a rib fitted to the grooves thereof, as set forth.

2. The combination with the main plate with its wheels, of the movable plate having
35 tongues working in grooves in the main plate, the wheels carried by the movable plate, the brake having its arm working in a groove in the movable plate, and means for operating said brake and movable plate, as set forth. 4c

3. The combination with the stationary wheels, and the movable plate carrying another set of wheels, of the brake arm movable in a groove in the movable plate, the independent levers for actuating said plate and
45 brake arm and its brake, pawls on said levers, and toothed plates with which said pawls are adapted to engage, as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence
50 of two witnesses.

DIXON E. WASHINGTON.

Witnesses:

W. T. SIMMONS,
R. JEMISON.