

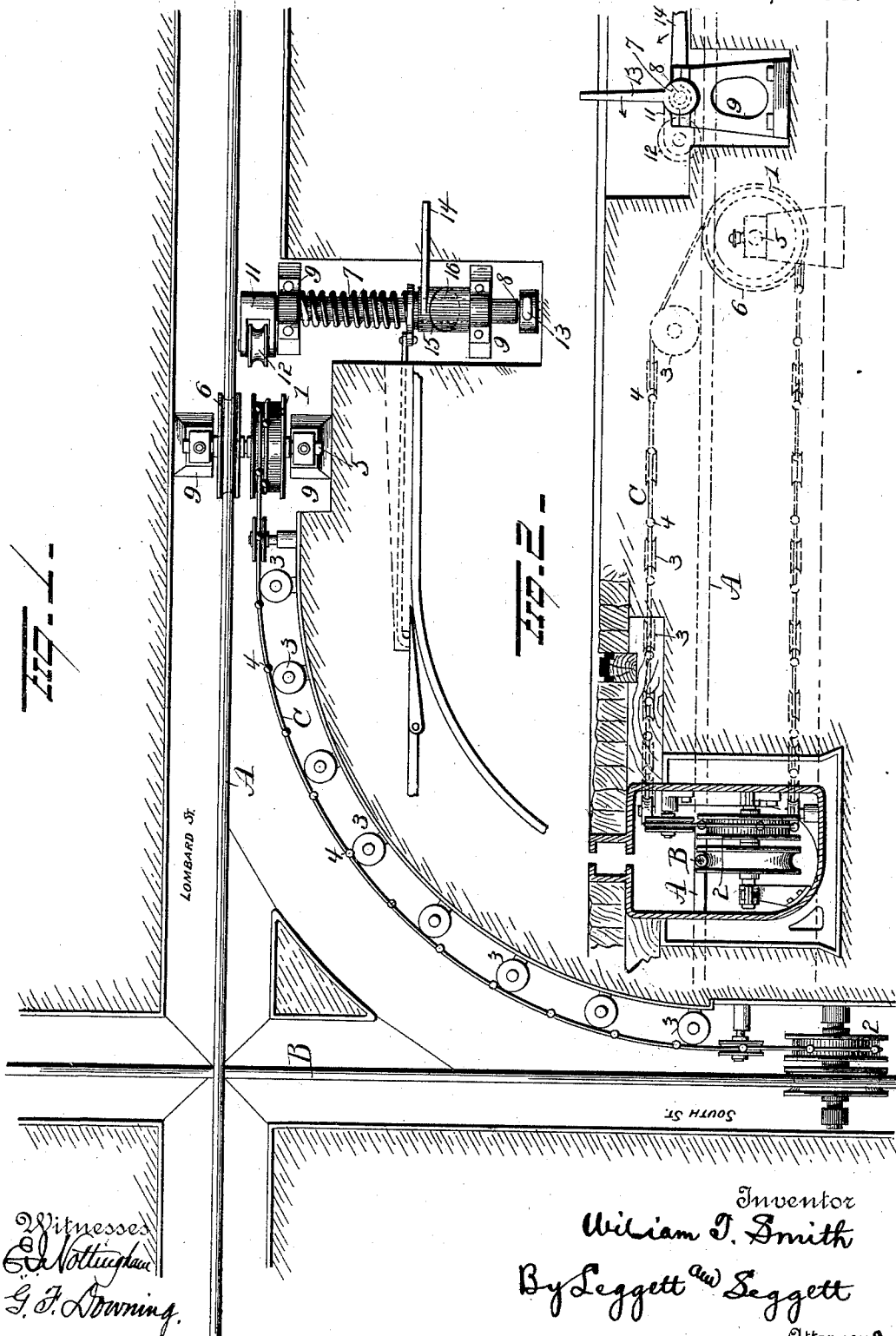
(No Model.)

2 Sheets—Sheet 1.

W. T. SMITH.
CABLE RAILWAY APPARATUS.

No. 499,048.

Patented June 6, 1893.



Witnesses
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Inventor
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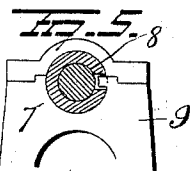
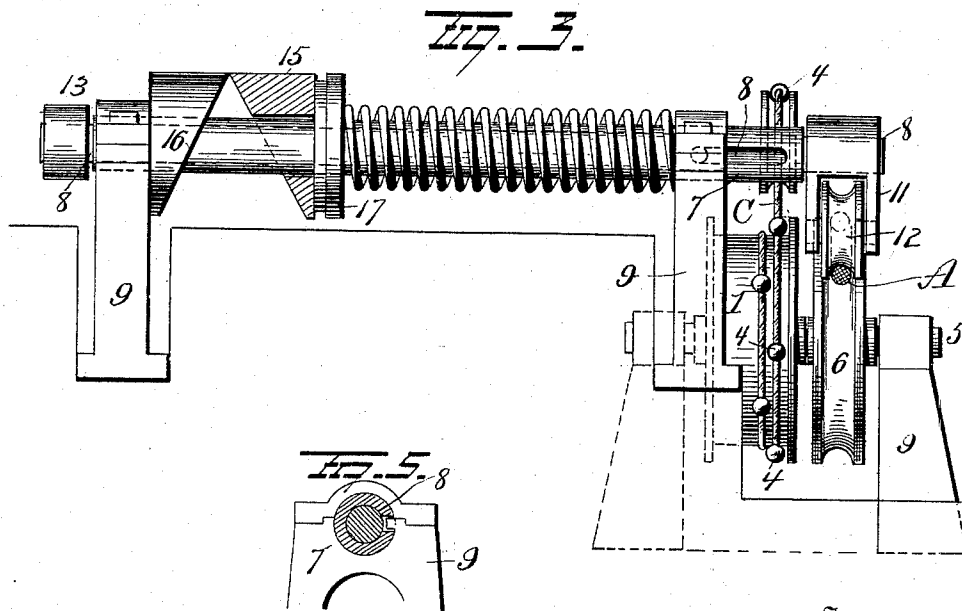
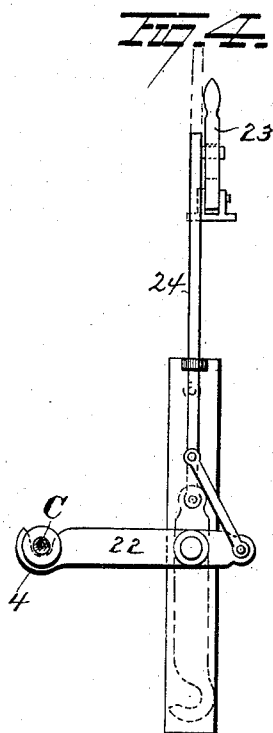
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UNITED STATES PATENT OFFICE.

WILLIAM T. SMITH, OF BALTIMORE, MARYLAND.

CABLE-RAILWAY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 499,048, dated June 6, 1893.

Application filed November 1, 1892. Serial No. 450,681. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. SMITH, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Cable-Railway Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in cable railways and more particularly to means for conducting cable cars from one main cable to another and it consists in certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view illustrating the application of my improved mechanism at a curve where a car is to be transferred from one cable to another. Fig. 2 is a view in elevation. Fig. 3 is a view in detail of the clamping mechanism. Fig. 4 is a view of a grip showing improvement attached for engaging the secondary cable, and Fig. 5 is a transverse sectional view through shafts 7 and 8 showing one of the uprights 9 in elevation.

A represents one main cable and B another, the two being on streets crossing each other or running approximately at right angles to each other. The two streets for convenience will be designated Lombard running east and west, and South running north and south. We will assume that one main cable A, runs along Lombard street and that the other one B runs along South street and that a certain number of the cars are to pass along Lombard and others to turn off into South street from Lombard. My improved mechanism as shown in the drawings is devised for conducting the cars around the curve from Lombard into South street, or of course around any curve, right or left or for that matter on a straight line where the object is to carry a car from one cable to another.

C is a secondary cable. This cable is endless and at its terminals passes around drums 1 and 2 and between these drums over suitable pulleys 3, 3, for the support and guidance of the cable, these pulleys being so arranged preferably as to carry the working parts of the secondary cable about four inches above

and to one side of the main cables, this being the most convenient position. Secondary cable C is provided at suitable intervals with knots or projections 4, 4, and to insure its operation this cable is usually passed at least twice around the drive drum 1 and once around idle drum 2. Drum 1 is supported on a horizontal shaft 5 and this shaft is provided with a friction sheave 6 over which the main cable A runs, the weight and frictional contact of the latter being sufficient to drive the shaft 5 and drum 1 under ordinary circumstances and thus keep the secondary cable in motion. But as the mere frictional contact of the cable upon the sheave might not be sufficient to insure the operation of the drum under all circumstances I have devised means for forcing the main cable against the sheave 6 with sufficient pressure to effect a perfect operation of the secondary cable no matter how great the load to be moved by it may be.

The plan I have adopted as being most practicable is as follows: A pair of shafts 7 and 8 is supported, one within the other, in uprights 9, 9. The outer shaft 7 is keyed to slide endwise in said standards and is prevented from turning and the inside one 8 is free to rock as occasion may require. The inside shaft is furnished with a lever 13 on one end close to the adjacent end of the hollow shaft by means of which it is rocked and at the opposite end close to the corresponding end of the hollow shaft is provided with an arm 11 which carries a roller 12 which is adapted to engage the main cable at a point near the sheave 6 and on the opposite side therefrom. It is for this purpose that the rocking motion is given to the inside shaft, to apply or remove this clamping pressure upon the main cable and hence increase or decrease the pressure upon sheave 6, and to throw the roller 12 over the cable or out of its way the endwise movement of the shafts, is provided. The endwise movement of the two shafts is imparted conveniently by the hand lever 14. Said lever is loosely mounted on the outer shaft and has a cam 15 on its hub, said cam hub operating between a cam 16 on one of the uprights and a ring 17 fixed on the hollow shaft. Thus by rocking the hand lever 14 the shafts are forced toward the main cable until the roller 12 is opposite the latter. Then

the other hand lever 13 is rocked to force the roller 12 against the cable, when it is locked in any convenient manner by means of toothed segment and latch or otherwise.

- 5 In order to operate the switch simultaneously with the endwise movement of the shafts, the hollow shaft is preferably connected by a rod 18 to the frog of the switch. This might be done in other ways of course.
- 10 I have only described this plan as one of many that might be adopted. All this mechanism is under ground excepting lever 13 and 14 which are generally placed at some convenient point say on the side walk where a man
- 15 is stationed to operate them.

As a convenient means for gripping the secondary cable, I provide the usual grip with a hook 22. The latter may be a single or double hook and it is preferably pivoted to the rear

20 or front edge of the grip and adapted to be swung into a horizontal position to engage or be engaged by a projection on the secondary cable. To this end a hand lever 23 is connected by a link 24 to the hook whereby to

25 throw it into a horizontal or operative position or a vertical or inoperative position.

Let it be supposed now that a South street car is running westward on Lombard street, and it is to turn into South street, at the curve.

30 The attendant on the side walk or other point first swings the lever 14 to move roller 12 over the cable A. He then swings lever 13 to force the roller against the cable and in consequence the cable firmly against the sheave 6.

35 This insures the operation of the secondary cable through drum 1 and all the gripman has to do is to throw hook 22 into a horizontal position. The next projection on the secondary cable from behind striking the hook carries

40 the latter along and thus the car is conducted around the curve or from one main cable to the other. The work having been accomplished the parts are returned to their normal positions.

- 45 It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing

from the spirit and scope of my invention and hence I do not wish to limit myself to the exact construction herein set forth, but,

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

1. The combination with a grip adapted to engage and be locked to a main cable, of a hook pivoted to the rear edge of the grip, and means for swinging this hook laterally on its pivot whereby its free end swings into a higher plane than its normal plane, substantially as set forth.

2. The combination with a main and secondary cable, and means for driving the latter cable, of an endwise movable and rocking clamping mechanism, substantially as set forth.

3. The combination with a main and secondary cable, of a friction sheave over which the main cable passes and an endwise movable rock shaft having a clamping or pressure device thereon for forcing the cable and sheave into close contact, substantially as set forth.

4. The combination with a main and secondary cable, of a friction sheave a pair of shafts, one within the other, the latter provided with a pressure roller means for moving both shafts endwise and rocking one whereby to force the main cable and the friction sheave into intimate contact with each other, substantially as set forth.

5. The combination with a main track and a switch or frog, of a main cable, and an endwise movable rock shaft having means thereon for engaging the main cable, and devices extending from the switch or frog to the endwise movable shaft whereby the two are moved simultaneously, substantially as set forth.

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

WILLIAM T. SMITH.

Witnesses:

HENRY BERNHEIMER,
JESSE P. GORE.