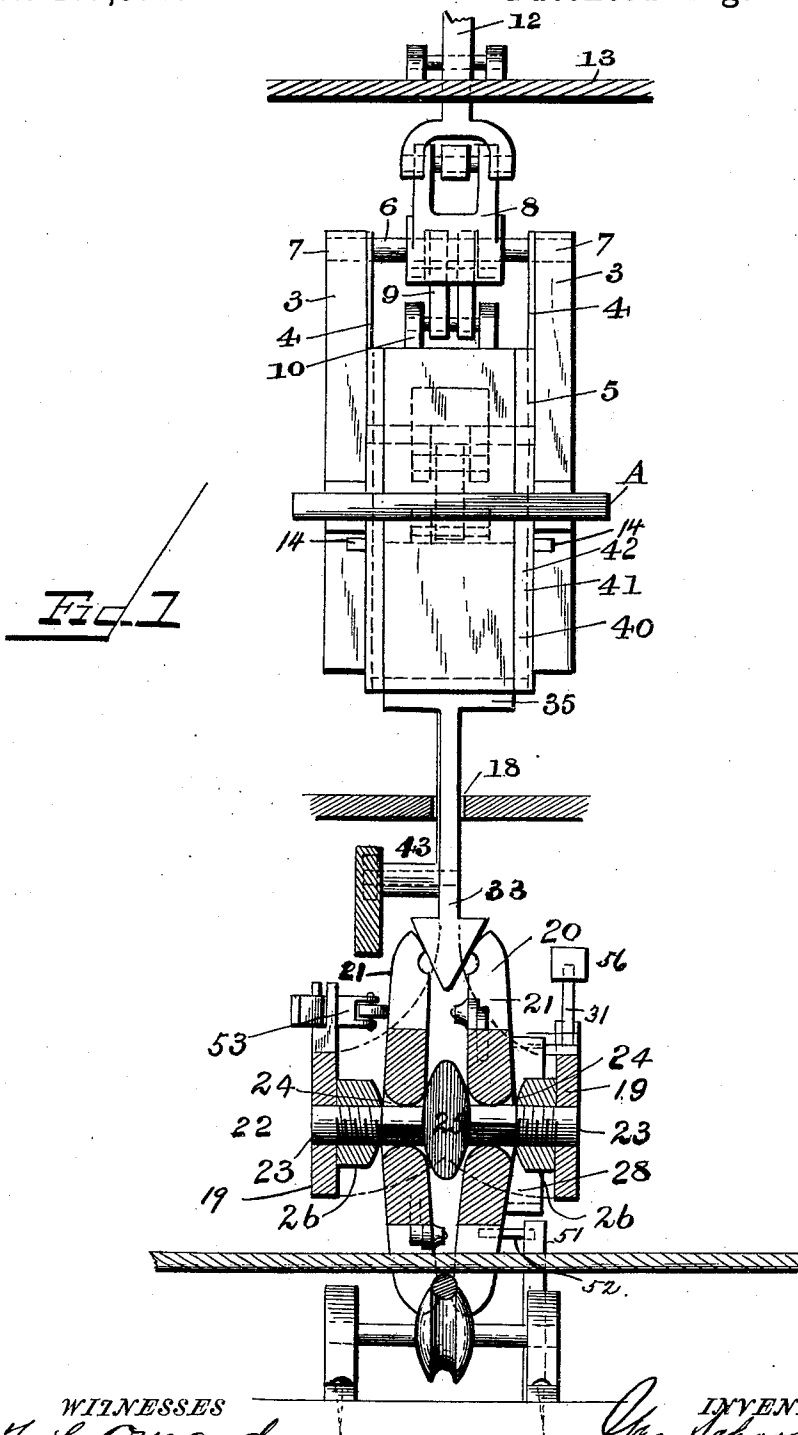


G. & L. SCHORPP.
GRIP FOR CABLE RAILWAYS.

No. 481,512.

Patented Aug. 23, 1892.



WITNESSES
H. L. Ormand
A. L. Smith

INVENTORS
G. & L. Schorpp
John Schorpp
By *H. W. Williams* Attorney

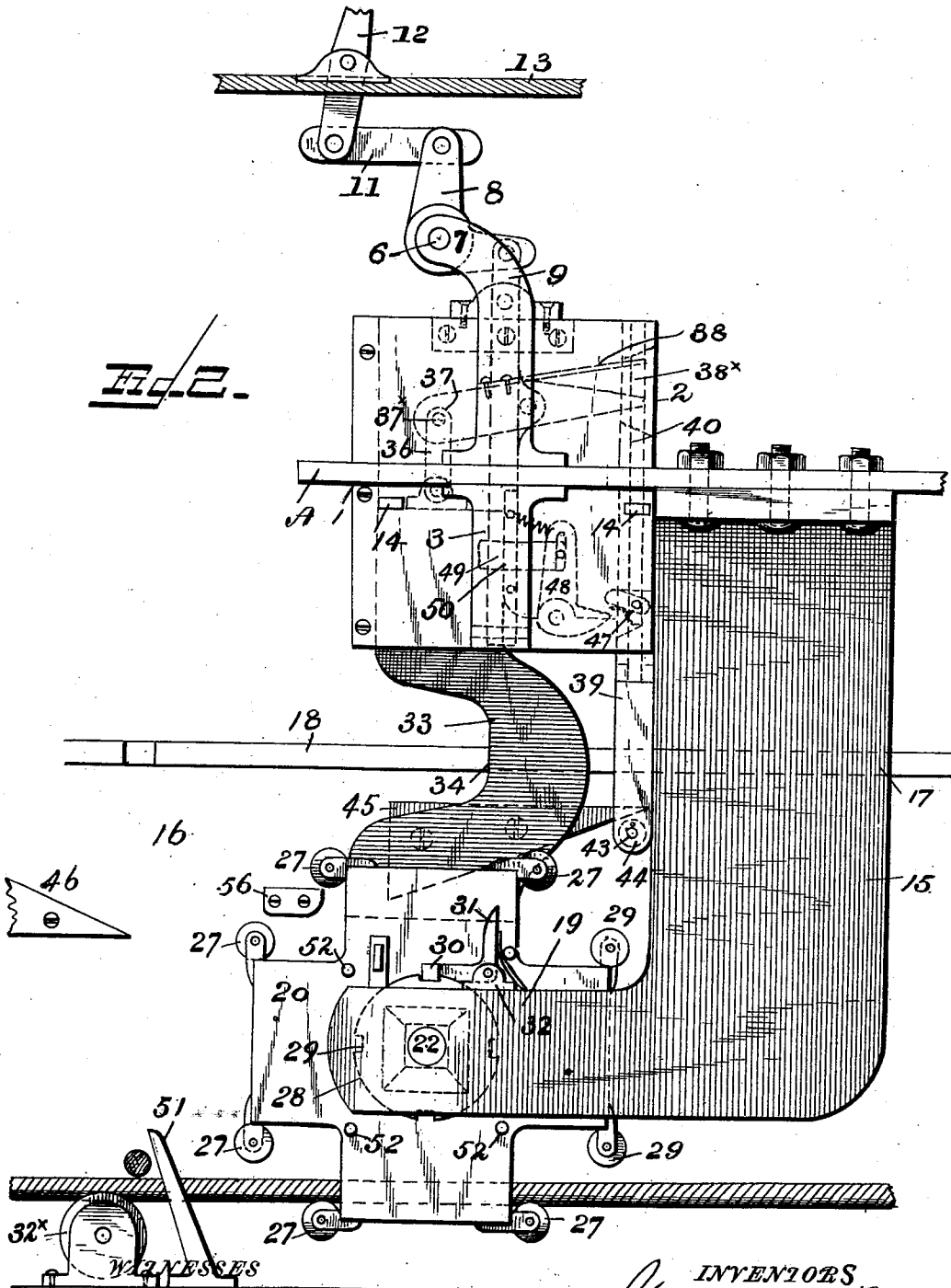
(No Model.)

2 Sheets—Sheet 2.

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A. L. Tind

INVENTORS
Geo. Schorpp and
Lewis Schorpp
By J. M. McHenry, Attorney

UNITED STATES PATENT OFFICE.

GEORG SCHORPP AND LOUIS SCHORPP, OF PHILADELPHIA, PENNSYLVANIA,
ASSIGNORS OF ONE-THIRD TO CHRISTIAN F. MERTZ, OF SAME PLACE.

GRIP FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 481,512, dated August 23, 1892.

Application filed February 25, 1892. Serial No. 422,776. (No model.)

To all whom it may concern:

Be it known that we, GEORG SCHORPP and LOUIS SCHORPP, citizens of the United States, and residents of the city of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have jointly invented certain new and useful Improvements in Grips for Cable Railways, of which the following is a specification.

Our invention relates to cable-railway grips adapted for use where two or more cables cross each other; and the primary object of the invention is to provide a grip of this character which will operate automatically at crossings and pass the cross-cable without the aid or attention of the gripman.

The invention consists in the various novel features of construction and combinations of parts hereinafter fully described, and specified in the appended claims.

In the accompanying drawings which form a part of this specification, Figure 1 is a front sectional elevation of our improved grip in connection with such parts of the truck and conduit as are necessary to an understanding of the invention, and Fig. 2 is a side elevation of the same.

A indicates the truck, having an opening 1, within which a sliding box 2 is arranged. On opposite sides of the truck are arranged brackets 3, provided on their inner sides with cleats or ribs 4, adapted to enter ways 5, formed in the outer sides of the box. These ways serve to guide the box in its vertical movements.

A shaft 6 is arranged in bearings 7 of the brackets 3, and upon this shaft is pivotally mounted a bell-crank 8. A short link 9 connects the bell-crank to a bracket 10, attached to the top of the sliding box.

11 indicates the draw-bar of the grip, pivotally secured at one end to the tilting bell-crank 8 and secured at its opposite end to the operating grip-lever 12, fulcrumed on the floor or platform 13.

The box 2 is provided with stops 14, adapted to contact with the truck to limit the upward movement of the box.

15 indicates a frame secured to the truck and extending downwardly within the conduit 16 below the street-line, as shown. This frame travels within the slot 18. At the lower

end of this frame 15 is arranged a yoke 19, within which the revoluble grip 20 is supported. The grip consists of two counterpart sections 21, arranged upon a shaft 22, supported in bearings 23 of the yoke 19. The openings 24 of the grip-sections are oppositely beveled, as shown in Fig. 1, to permit said section to have a limited rocking movement upon their shaft 22.

Between the sections of the grip, upon the shaft 22, is arranged a stationary washer 25, oppositely beveled on its respective sides. Between the outer sides of the grip-sections and the outer sides of the yoke 19 are arranged nuts 26, threaded as shown and adapted to hold the grip-sections firmly, and also to permit a limited adjustment of the sections toward or from each other. Upon the opposite corners of the four projecting ends or wings of each grip-section are arranged pulleys 27—that is to say, there are four of these pulleys on each grip-section, arranged, as shown, in pairs to support the cable and prevent its dropping too low when the grip is released.

28 indicates a notched wheel secured to one of the grip-sections concentric therewith, and formed with four slots or shoulders 29, each of which is adapted to be engaged in turn by an arm 30, projecting from a spring-dog 31, pivotally secured upon a bracket 32 on one of the arms of the yoke 19.

32^x indicates one of a series of pulleys arranged within the bottom of the conduit to support the cable in its travel.

33 indicates a wedge-bar supported within the sliding box 2 and projecting downwardly to enter the space between the grip-sections, as clearly shown in Fig. 1. This bar is curved at the point 34 and is provided at its upper end with a head 35, which slides within the box 2. The upper end of this head is connected by a link 36 to one end of a lever 37, fulcrumed upon a shaft 37^x and provided with a flat spring 38. The free end of this lever 37 and also the free end of its spring project into a beveled opening 38^x of the shifting-rod 39. This rod 39 is provided with a head 40, formed on its edges with tongues 41, which enter grooves 42 (indicated by dotted lines in Fig. 1) of the box 2 to guide the rod in its vertical movements. The lower end of this

rod is formed with an arm 43, provided with a pulley 44, and said arm is designed to contact with cam-blocks 45 and 46, arranged within the conduit adjacent to crossings, as will be further explained.

The shifting-rod 39 is provided with a spring-dog 47, adapted to contact with a spring-pressed bell-crank lever 48, to which is loosely connected a locking-arm 49, which enters an opening 50 in the head of the wedge-bar 33 to lock said bar, except during the operation of the shifting-rod 39.

51 indicates a rigid arm secured to the bottom of the conduit at one side of the cross-cable. This arm, to effect the revolution of the grip, strikes one of the pins 52, projecting from one of the sections of the grip, as clearly seen in Figs. 1 and 2. A spring 53 should be arranged on each side of the grip secured at their rear ends to any convenient part of the frame 15 and having their free ends in contact with the grip-sections and provided with pulleys, so that when the wedge-bar is withdrawn at a crossing these springs will force the grip-sections apart at their lower ends to release the cable. For convenience of illustration and to prevent obscuring other parts, we have shown only one spring 53 in Fig. 1 and omitted both springs in Fig. 2.

The block 56, secured within the conduit in advance of the cam-block 45, is adapted to be struck by the spring-dog 31 to release the notched wheel 28 and permit it to revolve one-quarter revolution when one of the pins 52 contacts with the arm 51.

Having described the construction of our improved device, we will now proceed to explain its mode of operation: It will be understood that the mechanism hereinbefore described, except the shifting-rod and parts controlled thereby, is to be under the control of the gripman, the raising and lowering of the box 2 carrying the wedge-bar operating to control the grip. When a crossing is reached, the arm 43 of the shifting-rod 39 strikes the cam-block 45 and draws said rod downwardly. The dog 47 contacts with the bell-crank lever 48, thus withdrawing the locking-arm 49 of the wedge-bar, and at the same movement the spring 38 of the lever 37 is depressed and the continued movement of the shifting-bar draws down the lever 37, thus raising the wedge-bar and releasing the grip. As soon as the arm 43 passes the cam-block 45 the dog 31 strikes the block 56 and releases the notched wheel 28. The continued forward movement of the car will cause the arm 51 to strike the nearest pin 52 of the grip, thus causing the latter to revolve one-quarter revolution and

jump the cross-cable 58, after which the arm 43 of the shifting-rod strikes the upwardly-inclined cam-block 46, thus again raising the shifting-rod, lowering the wedge-bar, and causing the other elements of the mechanism to resume their normal positions.

It will be apparent that many slight changes or variations in the details of construction of our improved device may be resorted to without departing from the spirit of our invention, and hence we desire it to be understood that we do not limit ourselves to the exact construction shown in the drawings, but reserve to ourselves the right to make all such modifications as may properly fall within the scope of our invention, as specified in the following claims.

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

1. The combination, with the truck, of a sliding box supported thereby, a vertically-movable wedge-bar, a revoluble grip provided with projecting pins, an arm to strike said pins, a shifting-rod, and cam-blocks arranged within the conduit to contact with said shifting-rod, substantially as described.

2. The combination, with the contact-blocks and rigid arm within the conduit, of a revoluble grip provided with pins to strike said arm, a shifting-rod to engage said blocks, a wedge-bar, and locking mechanism between the wedge-bar and shifting-rod, whereby the wedge-bar is raised as the shifting-rod is lowered, and vice versa, substantially as described.

3. The combination, with the two-part revolving grip provided with projecting pins, of the rigid arm adapted to strike said pins, and pulleys or rollers arranged upon the grip-sections oppositely in pairs to support the cable, substantially as described.

4. The combination, with the truck and sliding box, of a movable wedge-bar arranged in said box, a sliding shifting-rod arranged in said box, locking devices between the wedge-bar and shifting-rod, a frame depending from the truck and supporting a revoluble grip, and means, substantially as described, for automatically revolving said grip a partial revolution at cable-crossings, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORG SCHORPP.
LOUIS SCHORPP.

Witnesses:

JOHN BARTH,
THOMAS MCCOMB.