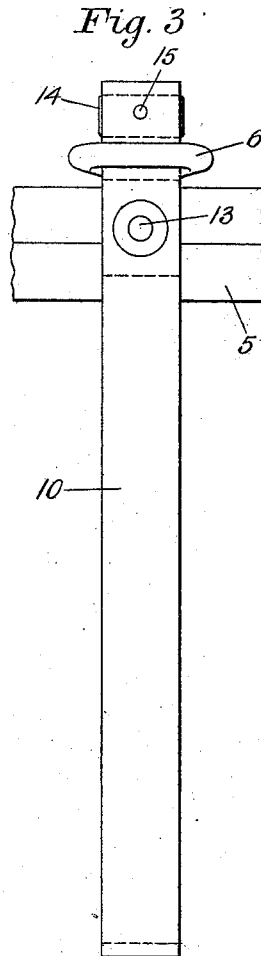
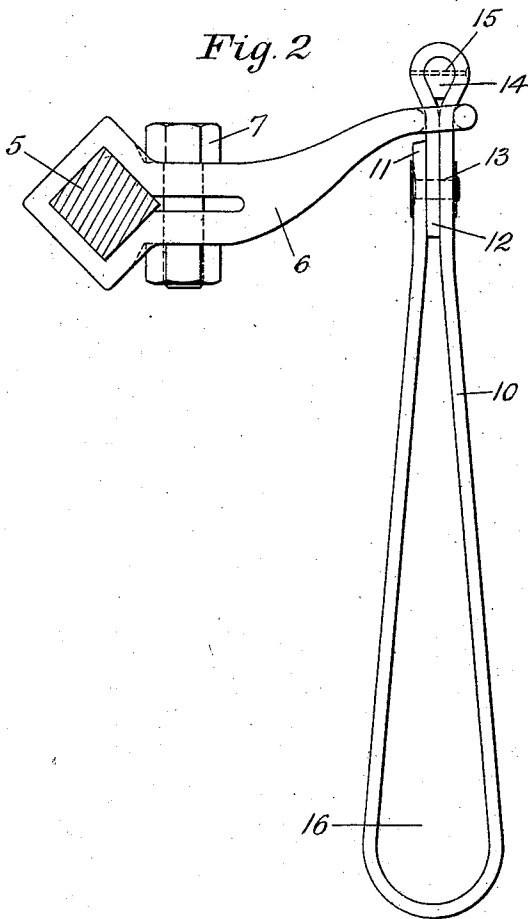
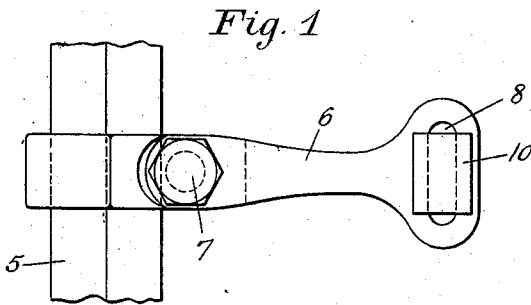


F. B. KENNEDY.
PULL STRAP.
APPLICATION FILED NOV. 21, 1907.

994,751.

Patented June 13, 1911.



Witnesses:
H. Mallner
Caroline M. Breckle

Inventor
Frank B. Kennedy
By W. H. Honiss, Att'y.

UNITED STATES PATENT OFFICE.

FRANK B. KENNEDY, OF NEW HAVEN, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE RECORDING REGISTER & FARE BOX COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

PULL-STRAP.

994,751.

Specification of Letters Patent. Patented June 13, 1911.

Application filed November 21, 1907. Serial No. 403,131.

To all whom it may concern:

Be it known that I, FRANK B. KENNEDY, a citizen of the United States, and resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Pull-Straps, of which the following is a full, clear, and exact specification.

This invention comprises an improved pull or hand strap for use in trolley cars and similar conveyances. It is herein illustrated as applied to the levers for operating the fare register rods of such conveyances.

Figure 1 is a plan view, Fig. 2 an end view, and Fig. 3 a side view of this device showing it in its operative position.

Registers of the class referred to are commonly operated by means of a rod 5, extending lengthwise of the car, and mounted for turning movement. This turning movement of the rod is transmitted to the register by any suitable connection such as a crank arm and connecting rod, which, however, are not herein shown. The rod is provided at suitable intervals along the car with operating arms 6, which are clamped to the rod in any convenient way, as by bolts 7. As these rods are usually placed in a car too high to allow their levers to be reached by the conductors, the arms are each commonly provided with a looped pendant strap hanging within reach of the conductors. These straps, being subjected to hard usage, wear through and break quite quickly, particularly at their point of connection with the operating arms. Moreover, in the case of the straps now in common use, when one strap is pulled and released some of them, and particularly those which are not pulled, are liable to be swung up over the top of the rod, or over the top of the arm, out of the reach of the operator, by the jerking movement of the arm on its upward return stroke. This is also likely to happen when these straps hang adjacent to the signal cord of the car, which sometimes engages the free swinging ends of the straps and swings them over the rod 5 or over the arm 6, in either case putting them out of the convenient reach of the conductor. Moreover, in the case of the straps commonly used the looped upper end is threaded singly through a slot or mortise in the end of the arm, the loops being afterward riveted together. This mode of appli-

cation requires more time for renewing a broken strap, and as this work of renewal is frequently done on the car while it is in service the saving of a small amount of time and the necessity for the use of riveting tools are factors of considerable importance.

According to the present invention an eye 8 is formed in the arm 6, large enough to enable the doubled or looped end of the strap to be passed through the eye, an enlargement being formed in the strap above and below the eye, to maintain the strap in position relative to the eye, allowing sufficient looseness to permit free action. The enlargement for the upper side of the eye is preferably made by inserting a filling piece of wood, leather, or any suitable material in the upper end of the loop, while the enlargement below the eye is made by lapping an end of the strap upon the doubled portion and riveting the three plies together, preferably with the upwardly projecting end on the outside, so as to form a decided shoulder below the arm, while at the same time holding the other two members of the lapped joint closely together.

The straps are preferably made up and completely riveted by the manufacturer in the form shown in the drawings, with the exception of inserting the block or filler 14 in the upper loop. In applying the strap it is only necessary to push the doubled end of the small loop upwardly through the eye 8 of the arm, insert the filling piece 14, and secure it therein, either by means of glue, or by means of a small pin or tack 15. The two plies of the strap which extend through the eye 8, being held close together, are quite stiff, so that the sides of the eye prevent the strap from swinging sidewise in either direction to any considerable extent, thus preventing the strap from being turned up over the arm 6, or over the rod 5, and thereby keeping the strap at all times in its depending position, ready to be grasped by the conductor, who commonly passes his hand into the lower and larger loop 16.

Another advantage of this improved strap or hanger is that it may be removed from the arm without cutting the strap, and without taking out the rivet 13, simply by pulling out the pin 15 and the filling piece 14, or by driving the latter out of its loop, or by cutting it away, according to the mate-

rial of which it is made, or according to the means available for removing it. It will be found convenient to make the filling piece 14 of round leather, of a length substantially equaling the width of the strap 10. These straps may also be used as hand or hanging straps, by slipping the upper loop over the ordinary round rod usually employed for the hanging strap. Or special fixed arms or hangers, having an eye like the eye 8, may be provided, in which case the upper loop may be passed through the said eye and secured thereto in the manner shown herein.

15 I claim as my invention:—

1. The combination with an arm provided with an eye, of a looped strap having a double portion passing through the said eye and secured against withdrawal therefrom 20 by means of an expanding piece inserted in the loop at one side of the eye, and by an end of the strap secured to the double portion, making a three-ply thickness of the strap at the other side of the eye.

25 2. The combination, with an arm provided with an eye, of a looped strap formed by looping the two ends of the strap together and securing them to the other member of the loop at a point adjacent to one

end of the doubled strap, the said end being 30 inserted through the loop, and a removable engaging piece inserted in the loop beyond the said eye.

3. The combination of an arm provided with an eye, a looped strap having its doubled end passed through the said eye and having a filling piece secured in the said loop above the eye to prevent the retraction 35 of the loop, the said strap, including an end thereof, being enlarged below the eye to prevent the strap from pushing upwardly through the eye. 40

4. The combination of a turning rod, an operating arm secured to the rod and provided with an eye, a looped strap having a 45 doubled portion passed through the said eye and enlarged on each side of the said eye to oppose endwise movement of the strap through the eye in both directions of the swinging movement of the operating arm. 50

In testimony whereof I have signed my name to this specification this 18th day of November, 1907 in the presence of two subscribing witnesses.

FRANK B. KENNEDY.

Witnesses:

THOMAS HOOKER, Jr.,
JOHN Q. TILSON.