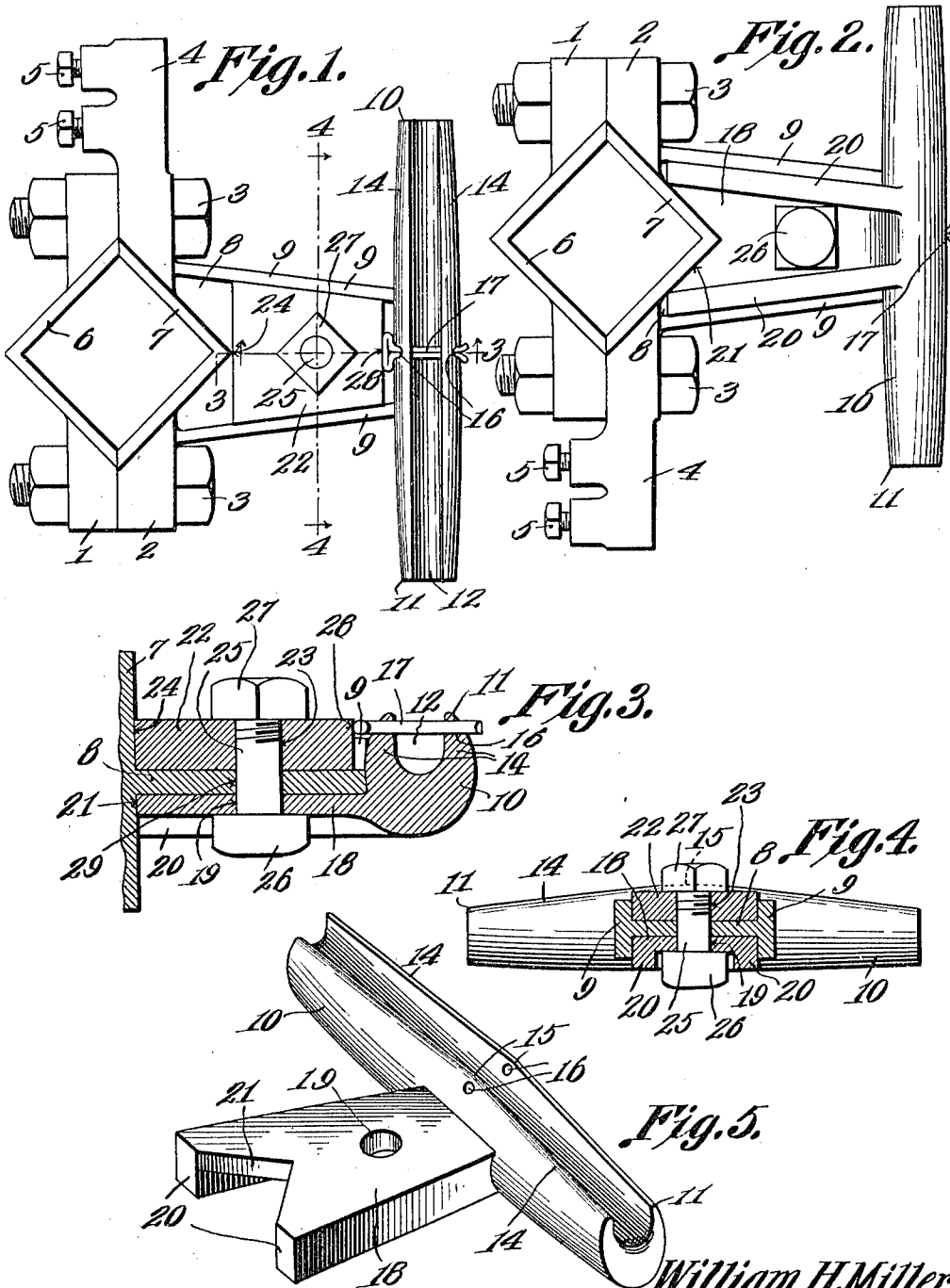


W. H. MILLER.  
TROLLEY COLLECTOR SHOE.  
APPLICATION FILED JULY 3, 1913.

1,079,059.

Patented Nov. 18, 1913.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM H. MILLER, OF EMAUS, PENNSYLVANIA.

TROLLEY COLLECTOR-SHOE.

1,079,059.

Specification of Letters Patent.

Patented Nov. 18, 1913.

Application filed July 3, 1913. Serial No. 777,240.

*To all whom it may concern:*

Be it known that I, WILLIAM H. MILLER, a citizen of the United States, residing at Emaus, in the county of Lehigh and State of Pennsylvania, have invented a new and useful Trolley Collector-Shoe, of which the following is a specification.

The device forming the subject matter of this application is a collector adapted to be assembled with a supporting bracket of standard form, the construction being such that when the shoe which commonly forms a part of the bracket, becomes worn by the attrition of the trolley wire, the shoe may be sawed off and be replaced by a detachable collector, without removing the bracket from the supporting structure wherewith the same is assembled, and without materially altering the standard form of the bracket.

The invention aims to provide a collector adapted to be assembled readily with a standard form of supporting bracket and to improve generally the form of the collector.

Another object of the invention is to provide novel means for holding the collector in place upon the bracket.

It is within the scope of the invention to improve generally and to enhance the utility of, devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 shows the invention in top plan, assembled with the bracket; Fig. 2 is a bottom plan of the structure shown in Fig. 1; Fig. 3 is a longitudinal section on the line 3—3 of Fig. 1; Fig. 4 is a transverse section on the line 4—4 of Fig. 1; Fig. 5 is a perspective of the collector, detached.

In the accompanying drawings there is shown a supporting structure comprising a clamp 1 and a clamp 2 united by bolts 3. The clamp 2 is equipped at one end with a

tubular extension 4, adapted to receive the conductor which leads downwardly into the electrically controlled mechanism of the crane or other vehicle wherewith the device is assembled, the conductor being held in place by set screws 5. The clamp 1 is provided with a transverse, offset trough 6, co-operation with another like trough 7 on the clamp 2 to form a socket adapted to receive the post on the crane or other like structure, to the end that the bracket comprising the clamps 1 and 2 may be upheld properly. Projecting laterally from the clamp 2 is an arm 8 which tapers toward its outer end, the longitudinal edges of the arm 8 being provided with flanges 9 which extend above and below the arm 8, as will be understood best from Fig. 4.

The standard bracket or supporting structure as above described includes a shoe which commonly is formed integrally with the outer end of the arm 8. The location of this shoe will be understood best when the shoe 10 in Fig. 1 is noted, although the shoe 10, constituting a part of the present invention, is a detachable one, as will be explained hereinafter. Fig. 1, including the shoe 10 will, however, serve to illustrate the fact that the standard bracket is provided at the end of the arm 8 with an integrally formed shoe.

The shoe above mentioned is adapted to receive the trolley wire, and soon becomes worn by the attrition of the trolley wire. Under ordinary conditions, when the shoe thus becomes worn, it is necessary to remove the entire bracket from the supporting post or standard on the crane, and to throw away and renew the clamp 2, the arm 8 and the shoe which is located at the outer end of the arm.

In putting the present invention in practice, the shoe, so soon as the same is worn, is sawed off, along a line coincident with the outer end of the arm 8, and then there is applied to the arm 8 a structure which will be described hereinafter.

Considering the invention as thus far disclosed, it will be observed that, in order to renew the shoe, it is not necessary to destroy or cast away the clamp 2 and the arm 8 neither is it necessary to detach the bracket comprising the clamps 1 and 2 from the supporting standard.

In carrying out the invention there is pro-

vided a collector denoted by the numeral 11, the collector being shown in detail in Fig. 5, and being shown in position upon the bracket, in the remaining figures of the drawings. The collector 11 includes a shoe 10 provided with a longitudinal groove or tread 12, defined by side walls 14. The upper edges of the side walls 14 slant upwardly to a point intermediate the ends of the shoe 10, thereby to define a crown 15. In the crown 15 of the shoe there are oppositely disposed holes 16 adapted to receive a retaining device which may be a cotter pin 17. The cotter pin 17 overhangs the tread 12 of the shoe 10 and the function of the cotter pin is to retain the trolley wire in the tread. The collector 11 includes a shank 18 which is of blunt-wedge form, the narrower end of the shank 18 being secured to the intermediate portion of the shoe 10, the shank preferably being formed integrally with the shoe. In the shank 18 there is an opening 19, and the shank is provided along its longitudinal edges with outstanding wings 20 which converge in the direction of the shoe 10. In the end of the shank 18 there is a notch 21.

The shank 18 of the collector 11 is placed in abutment with the lower face of the arm 8 of the clamp 2, after the original shoe at the end of the arm 8 has been sawed off as hereinbefore described. The wings 20 of the shank 18 fit closely between the depending portions of the flanges 9 upon the arm 8 as will be understood best from Figs. 4 and 2.

The invention further includes a washer block 22 of blunt-wedge shape, the washer block being provided with an opening 23. The washer block is placed on top of the arm 8 and fits closely between the upstanding portions of the flanges 9 upon the arm as shown in Figs. 1 and 4. When the washer block 22 is in place, as above described, the rear end of the washer block abuts against the apex of the offset trough 7, as clearly shown in Fig. 1 and as designated by the reference character 24. This operation serves to line up the opening 23 in the washer block with the hole 19 in the shank 18 of the collector 11 and with an opening 29 which is formed in the arm 8. The notch 21 in the end of the shank 18 of the collector 11 receives the lower portion of the offset socket forming trough 7. Thus, the opening 19 is alined with the openings 29 and 23, and, at the same time, the shank 18 is prevented from having a swinging movement upon a bolt 25 which passes through the openings 19, 29 and 23. The head 26 of the bolt 25, as shown in Fig. 2, is received between the wings 20 of the shank 18 of the collector 11, and thus the bolt is held against rotation. The nut 27 on the bolt 25 bears against the washer block 22. Obviously, if

desired, the bolt may be inverted, the nut 27 being held between the wings 20 and the bolt 25 being rotated.

Noting Figs. 3 and 1 it will be observed that when the washer block 22 is held in place by the bolt 25, one edge of the washer block forms an abutment for the inner end of the cotter pin 17, as indicated at 28. Thus, the cotter pin is held in place, in overhanging relation with respect to the tread 12 of the collector 11.

Recalling that this device is adapted peculiarly to be used on cranes and the like which often move no more than a rod or two, no serious disadvantage results from the fact that the cotter pin 17 prevents the shoe from passing by a conductor support; indeed, owing to the presence of the cotter pin the conductor may hang slack, and the conductor supports may be few and far between.

The device herein disclosed presents many advantages. It may be assembled readily with a supporting bracket of standard form, when the shoe thereof becomes worn, and it is to be observed that the employment of the collector herein disclosed contemplates no change in the standard form of bracket, neither does the use of the collector necessitate a separation of the constituent clamps 1 and 2 of the bracket, or a removal of the bracket from the supporting standard.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a supporting structure including a socket and an outstanding arm; a collector including a shank and a shoe, the shank being mounted on the arm and being provided at its end with a notch receiving the socket; and a securing member engaging the shank and the arm.

2. In a device of the class described, a supporting structure including an outstanding arm having longitudinal flanges; a collector including a shoe, and a shank having longitudinal wings, the shank being mounted on the arm and the wings being received between the flanges; and a bolt and nut structure connecting the shank and the arm, one member of the bolt and nut structure being engaged between the wings against rotation.

3. In a device of the class described, a supporting structure including an arm having longitudinal flanges which project beyond opposite faces of the arm; a collector including a shoe and a shank, the shank being mounted on the arm and being engaged between the flanges at one side of the arm; a washer block mounted on the arm and engaged between the flanges at the other side of the arm; and a securing element uniting the shank, the arm and the washer block.

4. In a device of the class described, a supporting structure; a collector including a

shoe having spaced walls defining a tread, and a shank projecting from the shoe, the shank being mounted upon the supporting structure; a retaining device inserted into  
5 one wall of the shoe and overhanging the tread of the shoe; a washer mounted upon the arm and engaging the retaining device to hold the same in said wall; and a securing member uniting the arms, the supporting  
10 structure and the washer.

5. As an article of manufacture, a collector comprising a shank having a notch in one end and a transverse shoe secured to the other end of the shank.

15 6. As an article of manufacture, a collector comprising a shank provided along its longitudinal edges with projecting wings; and a transverse shoe secured to one end of the shank.

20 7. As an article of manufacture, a collector comprising a shank having a notch in one end and provided along its longitudinal edges with projecting wings, and a transverse shoe secured to the other end of the  
25 shank.

30 8. As an article of manufacture, a collector including a shoe having spaced walls defining a tread, and a shank projecting from the shoe; a retaining device inserted into one wall of the shoe and overhanging the tread of the shoe; a washer mounted upon the shank and engaging the retaining device to hold the same in said wall; and a

securing member uniting the shank and the washer.

9. As an article of manufacture, a collector comprising a shank having a notch in one end and provided along its longitudinal edges with projecting wings, and a shoe secured to the other end of the shank, the shoe  
40 having spaced walls defining a tread; a retaining element inserted through one wall and overhanging the tread; a washer mounted upon the shank and constituting an abutment for the retaining element, to hold the  
45 same engaged with said wall; and a bolt and nut structure uniting the shank and the washer, one member of the bolt and nut structure being held between the wings  
50 against rotation.

10. As an article of manufacture, a collector including a shank and a trough-shaped shoe assembled with the shank; a pin removably mounted in the shoe and overhanging the tread of the shoe; and support engaging  
55 means carried by the shank, the support engaging means including an element engaging the pin to hold the pin in place in the shoe.

In testimony that I claim the foregoing as  
60 my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM H. MILLER.

Witnesses:

JOHN S. FREDERICK,  
EDWARD T. SMITH.