Aug. 4, 1931. H. P. CHANDLER 1,817,175

CURRENT COLLECTOR

Filed Sept. 9, 1930

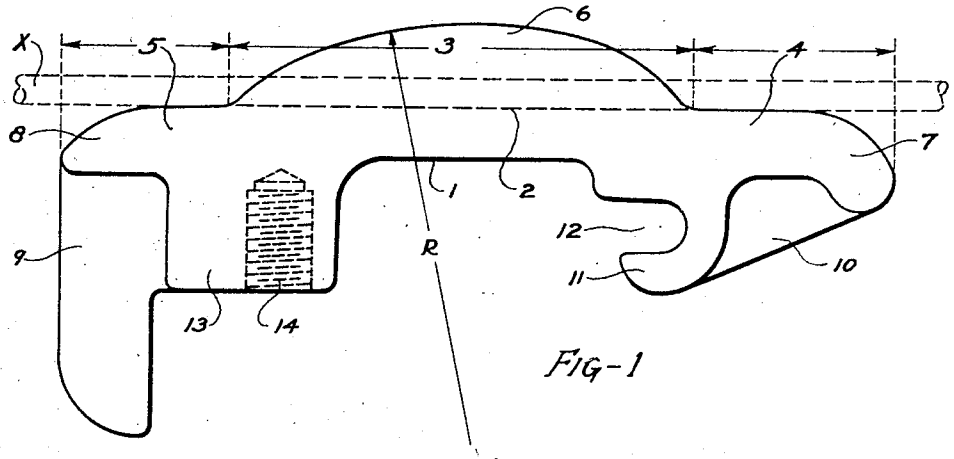


FIG-1

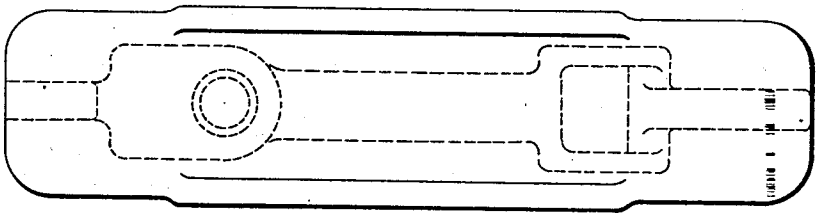


FIG-2

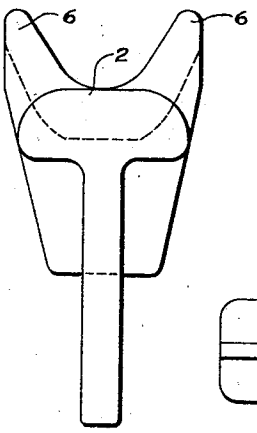


FIG-3

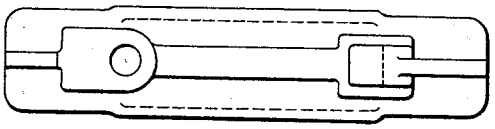


FIG-5

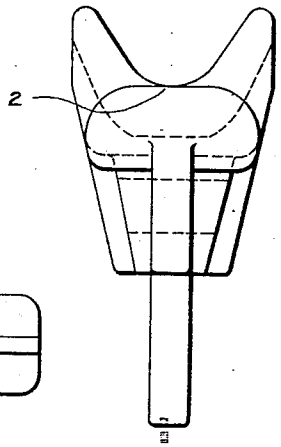


FIG-4

Witness:

W. L. Henderson

Inventor

HOMER P. CHANDLER

By

Attorney

Patented Aug. 4, 1931

1,817,175

UNITED STATES PATENT OFFICE

HOMER P. CHANDLER, OF MANSFIELD, OHIO, ASSIGNOR TO THE OHIO BRASS COMPANY, OF MANSFIELD, OHIO, A CORPORATION OF NEW JERSEY

CURRENT COLLECTOR

Application filed September 9, 1930. Serial No. 480,685.

My invention relates to current collectors and refers particularly to collectors of the sliding or shoe type.

The object of my invention is to provide a sliding current collector which will have a larger contact with the conductor than can be secured with the present constructed shoe collectors.

The difficulty met with in making the collector of the present type with increased length is that there is a limit to the collector which, if exceeded, will prevent the shoe from properly operating through switches, frogs, turn-outs, crossings, etc., and also in moving around a curve.

My invention resides in the new and novel construction, combination and relation of the various parts hereinafter described and shown in the drawing forming a part of this specification.

In the drawings:—

Fig. 1 is a side view of my invention.

Fig. 2 is a top view of Fig. 1.

Figs. 3 and 4 are end views.

Fig. 5 is a bottom view on a reduced scale.

In one embodiment of my invention I have shown a type of shoe suitable for use with a current collecting device shown in Larsson Patent 1,742,086 dated December 31, 1929. My invention, however, may be applied to other types of collectors as for instance that shown in my Patent 1,706,652, dated March 26, 1929.

Referring to the construction shown in the drawings I employ a body portion 1 which has an elongated flat surface 2 which is adapted to contact with the conductor X. The contact surface has three portions, namely a grooved portion 3, an extended portion 4 and another extended portion 5. The grooved portion 3 is formed of a portion of the contacting surface 2 together with the flanges 6. The flanges 6 are arched as shown in Fig. 1 and extend for a portion only along the entire contact surface 2. The grooved portion is of normal depth, that is, a depth which is usually employed in connection with devices of this character, namely from one-half inch to one inch in depth and the radius of the periphery of the flange may correspond to that of trolley wheels of the usual diameter, namely from four to six inches.

It might be said that the portion 3 would constitute substantially shoes of the present type now on the market so far as the contact portion of the shoe is concerned and it may further be said that I have taken the present shoe and lengthened out the contacting portion so as to increase the length of contact with the conductor but have not lengthened out the flanges 6.

By constructing the contacting portions 3, 4 and 5 of my shoe as described the shoe is capable of passing through switches, turn-outs, crossings and moving around curves without being thrown from the conductor or unduly cramping the same, all of which would be the case if the present type of shoe were extended and the flanges 6 extended equally. At the same time I am decreasing the current density and wear per unit length of contact between the shoe and the wire which is very important where the current drawn is excessive as is becoming quite common at the present day.

The extended portions 4 and 5 are shown as perfectly flat with turned down surfaces 7 and 8 respectively and it will be noted that the surface of the extended portions 4 and 5 does not project above the lower surface of the conductor. The portion 5 has a depending web 9 which tends to prevent the shoe from being caught in the overhead construction should the trolley leave the conductor as it sometimes does where the track is very rough and the overhead conductor is loosely strung. The portion 4 also has a web 10 for like reasons.

The shoe may be mounted upon a hub and the harp as shown in the Larsson Patent 1,742,086 or it may be arranged to be pivotally mounted in a harp as shown in my Patent 1,706,652. Also the three-part contact portion described above may be arranged for various attachments to supports as will be evident to those skilled in the art.

In the particular form shown in the drawings there is a hook portion 11 with an open groove 12 to hook onto a supporting member and there is also a lug portion 13 with a

threaded hole 14 to receive a bolt to secure the shoe to the support.

The increased length of the contacting surface of my shoe tends to stabilize the contact between the shoe and the conductor, that is, there is less tendency for the shoe to rock relatively to the trolley wire in a vertical plane. With a shorter shoe there is a tendency for the shoe to rotate relatively to the trolley wire about its pivotal center due to friction between the wire and shoe and this tends to wear the front end of the shoe thus decreasing the effective contact between the shoe and wire.

Having described my invention, I claim:—

1. A current collector comprising a shoe to slide along a wire having an elongated portion with a contact surface to engage the wire and having end surfaces curved away from the contact surface, spaced flanges extending along the shoe and projecting away from the contact surface to form with a portion of the contact surface a groove for a predetermined length intermediate the ends of the contact portion of the shoe and means to attach the shoe to a support.

2. A current collector shoe comprising a body member having an elongated portion with a surface to slidably engage a conductor, the elongated portion having two flat end sections and an intermediate grooved section and means to secure the shoe to a support.

3. A current collector shoe comprising a body having an elongated wear portion with an elongated surface to engage a conductor and positioned in a plane parallel to the lower surface of the conductor, a section of the contact surface having sides of less length than the said contact surface and extending above the lower surface of the conductor intermediate the ends of the contact surface and means to secure the shoe to a support.

4. A current collector comprising a shoe having a grooved portion with a surface to engage a conductor and projections from each end of the grooved portion and each projection having a flat contact surface to engage the conductor, the said flat surface being in the same plane with the contact surface of the grooved portion and means to support the collector.

5. A current collector shoe comprising a body having an elongated contact surface, a portion of the surface being flanged to provide a grooved section for a part of the length of the contact surface, the entire contact surface being in a substantially straight line and means to secure the body to a support.

6. A current collector shoe comprising a body having a straight elongated contact surface to engage a conductor throughout substantially entire length of the contact surface, a portion only of the length of the contact surface being flanged and means to mount the body on a support.

7. A current collector shoe comprising an elongated body having a transverse open end slot adjacent one end and having a side opening in a longitudinal direction, an elongated straight-line contact surface to engage a conductor, flanges along a portion of the contact surface forming a grooved section for a part of the length of the contact surface and means adjacent the other end of the body to detachably receive means to secure the body to a support.

8. A current collector shoe comprising an elongated body having a straight elongated surface for contact with a conductor, spaced flanges along a portion only of the contact surface to form a groove and separate means at each end of the body to secure the body to a support.

9. A current collector shoe comprising a body having a straight elongated contact surface to engage a conductor, a portion of the length of the contact surface comprising the bottom of a groove having upstanding side walls and the balance of the contact surface having downwardly sloping edges and and means to secure the body to a support.

10. A current collector shoe comprising a body having a portion provided with a straight elongated contact surface to engage a conductor, a predetermined length of the said portion which is less then the said contact surface having upstanding flanges on opposite sides of the said contact surface and means to secure the shoe to a support.

In testimony whereof I affix my signature.

HOMER P. CHANDLER.