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B. C. RIBLET.

TRAMWAY BUCKET AND ROPE CLIP.

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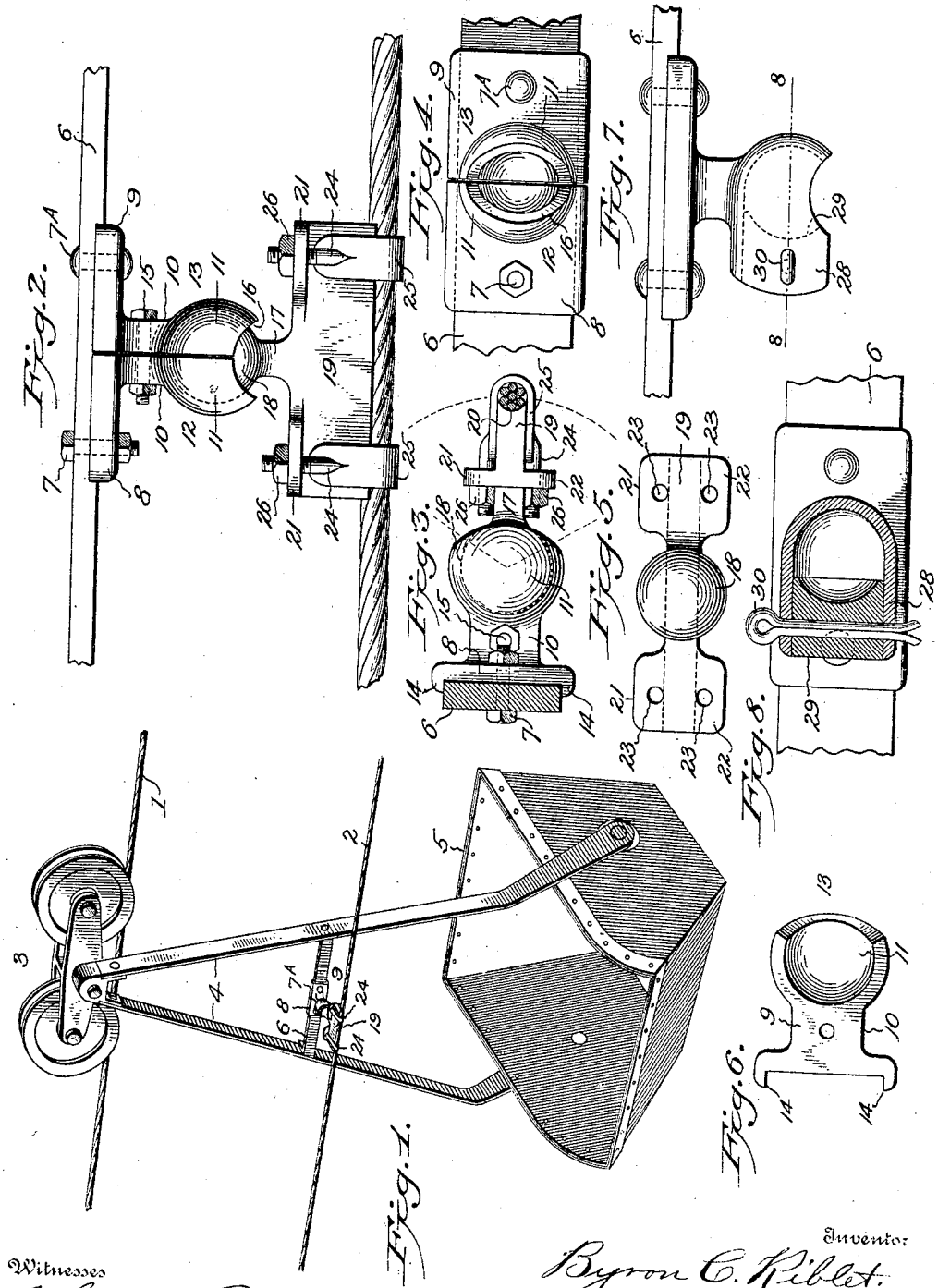

Witnesses

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TRAMWAY BUCKET AND ROPE CLIP.

No. 814,622. Specification of Letters Patent. Patented March 6, 1906.

Application filed April 18, 1904. Serial No. 203,788.

To all whom it may concern:

Be it known that I, BYRON C. RIBLET, a citizen of the United States of America, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Tramway Bucket and Rope Clips; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in clips for attaching a bucket to the traction-rope of aerial wire-rope tramways; and the objects of my invention are, first, to provide a clip provided with a universal joint that permits of universal movement of the bucket relative to the traction-rope in all directions; second, to provide a clip having a ball-and-socket-joint connection between the traction-rope and the bucket that is easily and quickly disconnected. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a fragment of an aerial wire-rope tramway, showing a trolley-bucket mounted on the stationary or track rope and connected to the traction-rope by my improved universal-joint clip. Fig. 2 is a plan view of my improved clip. Fig. 3 is an end elevation of my improved clip. Fig. 4 is a side elevation of the socket part of the ball-and-socket joint of my improved clip. Fig. 5 is a side elevation of the ball part of my improved clip. Fig. 6 represents a side elevation of one-half of the socket part of my improved clip. Fig. 7 is a plan view of a modification of the socket part of my improved clip, and Fig. 8 is a section of Fig. 7 on line 8 8.

Similar numerals of reference refer to similar parts throughout the several views.

Referring to the drawings, the numeral 1 designates the track or stationary rope; 2, the traction-rope, and 3 the trolley of the bucket; 4, the pendants of the bucket; 5, the bucket of a tramway, and 6 a cross-bar that extends across and is secured to the pendants of the bucket. While a tramway-bucket contains the above parts, the term "bucket" as hereinafter used in a general sense implies a complete bucket. To the cross-bar 6 I secure by bolts 7 and the rivets 7^A plates 8 and 9, which form the base of a bracket that forms one part of the clip and which I call the "socket" member of the clip. From the base members 8 and 9 a stem 10 projects at right angles, at the end of which a hollow ball-shaped spherical socket 11 is formed. This hollow ball forms the socket of the universal joint of my clip. The interior of this spherical socket is preferably made round and spherical. This socket and its stem and the base is made in two equal halves 12 and 13, that are separated through the center of the ball-socket. The two halves of the base are preferably made with projecting lips 14, which extend around and fit against the edges of the cross-bar and with the bolts hold the two halves of the base in alinement. The two halves of the socket are bolted together by a bolt 15, that passes through both halves of the stem. A recess 16 is formed in the terminal end of the shell of the socket to form a passage for the stem 17 of the ball 18, which is formed on the body portion of the ball part of the clip. The body of the ball portion of the clip comprises a narrow rectangular plate 19, one side edge of which is provided with a curved groove 20, in which the traction-rope rests. At the opposite side edge of the plate 19 from the grooved edge right-angled integral marginal lugs 21 and 22 are formed that project from the rear side edge and from adjacent to the opposite ends of the plate. Through these marginal lugs apertures 23 are formed adjacent to the opposite ends of the plate, in which are placed the ends of yoke or **V** bolts 24, the ends of which are threaded and are provided with nuts 26, that screw against the rear side of the lugs. The curved portions of these **V**-bolts are flattened out in the form of a thin band or ribbon 25, that surrounds the rope and the plate, and when the nuts 26 are tightened clamp the rope in the groove and to the plate or body portion of the clip. From the center of plate 19 the stem 17 projects and terminates in a ball 18, which fits snugly, but pivotally, in the hollow shell of the spherical socket. The ball is inserted in the spherical socket by separating its halves, which is done by removing the bolts 15 and 7 and the half 12. The ball is then inserted between the halves and the half 12 again bolted to the cross-bar and then to the other half by replacing and tightening the bolts 7 and 15. The recess in the socket permits the bucket and cross-bar and the socket to swing vertically through an arc of a circle of about forty-five degrees above and below the horizontal

center of the clip. The bucket and socket are also free to swing vertically in a plane horizontal to the axes of the traction and stationary ropes, as the socket can turn freely on the ball in any direction. The bucket is thus enabled to swing in any direction on the ball.

In Figs. 7 and 8 I illustrate a modification of the construction of the socket and of the clip. In this modification the base-plate and the stem of the socket are made in one integral piece, and the base is secured at both ends to the cross-bar, preferably by rivets. As constructing the base and stem and socket in one integral casting make it necessary that some other method be employed to introduce the ball into the socket than that shown in Figs. 2, 3, and 4, I preferably construct the socket in the following manner: I form a laterally-extending hollow casing 28 on one side of the socket and make the aperture in it large enough to permit the ball to be inserted through it into the socket. I preferably make this aperture round, and the terminal end of the casing, as well as the socket, contains an aperture for the ball to pass through. In the round aperture of the casing I fit a plug 29, the inner end of which is concaved to fit snugly the surface of the ball. I secure this block in position by a split pin 30, which I extend down through the casing and block. To remove or insert the ball in the socket, it is only necessary to remove the split pin and the block, when the ball can be moved laterally in and out of the socket.

My invention is simple, durable, inexpensive, and easily and quickly applied to the buckets and the traction rope or tramways.

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

1. In a rope and bucket clip, a member secured at one end to a tramway-bucket, a second member secured at one end to a traction-rope and a ball-and-socket joint connecting the opposite ends of said members operatively together.

2. In a rope and bucket clip, a socket member secured to a tramway-bucket and a body portion with a ball at one end pivotally secured in said socket and attached at its opposite end to a traction-rope.

3. In a rope and bucket clip, a bracket secured at one end to a tramway-bucket, a hollow spherical socket at the opposite end of said bracket, a plate secured at one end to a traction-rope and a ball projecting from said plate and pivotally secured in said socket.

4. In a rope and bucket clip, a bracket member secured at one end to a tramway-bucket and provided with a spherical aperture at its opposite end, a plate secured at one end to a traction-rope and having a spherical ball at its opposite end pivotally secured in the spherical aperture of said bucket member, and means for connecting and disconnecting said ball to and from the said socket of said bucket member, substantially as described.

5. In a rope and bucket clip, a bracket member secured at one end to a tramway-bucket, a plate secured at one end to a traction-rope; and a universal joint formed partially at the opposite ends of each end of both of said bracket and plate members, and pivotally connected together, substantially as described.

6. In a rope and bucket clip, a bucket member provided with a base, means for securing said base to a tramway-bucket, a hollow spherical aperture in the free end of said base, a plate provided with bolts adapted to secure said plate to a traction-rope, a stem projecting from said plate; a ball on the end of said stem pivotally secured in the spherical apertures of said bucket, and means for disconnecting said ball from the spherical socket of said bracket.

7. In a rope and bucket clip, a socket member secured to a tramway-bucket, and provided with a removable portion adapted to admit a spherical member, a plate member secured at one end to a traction-rope, and having at its opposite end a spherical or ball member, pivotally connected to said socket member.

8. In a rope and bucket clip, the plate, bolts connected with said plate and arranged to clamp said plate to a traction-rope; a spherical ball on said plate; a bracket divided into two parts, said parts being secured at one end to a tramway-bucket; a hollow spherical aperture in the opposite end of said bracket formed partially in each part and surrounding and secured to said ball, and means for separating the parts of said brackets to release said socket from and to connect it to said ball, substantially as described.

9. In a rope and bucket clip, the combination with the traction-rope and the bucket, of the plate, having the rope-groove in one edge, the projecting lugs on the opposite edge, the V or yoke bolts extending through said lugs, and adapted to clamp said rope to said plate, the ball projecting from said plate and the socket member operatively arranged to surround said ball, and to pivotally swing on it in any direction, and means for attaching said socket to said bucket, substantially as described.

10. In a rope and bucket clip, the combination with the traction-rope and the bucket, of a bracket member divided through its stem portion, a bolt arranged to clamp said divided portions together, a plate on each divided portion of said bracket, means for detachably securing the plate at one of the divided parts of said bracket to said bucket, means for rigidly securing the plate of the other part of said bracket to said bucket, a hollow ball-

socket formed in the end of said bracket partially in each of its parts, a plate secured at one end to said traction-rope, and a ball on said plate pivotally connected to said socket, substantially as described.

11. In a rope and bucket clip, the combination with the traction-rope, the bucket, the plates, the V-bolts, the stem projecting from said plate and the ball at the end of said stem, of the divided bracket secured at one end to said bucket, and pivotally secured by a socket-joint to the ball of said plate, and having a vertical recess in its terminal end adapted to permit said bucket and socket to swing through a predetermined arc around said ball in a vertical plane, substantially as described.

12. In a rope and bucket clip, the combination with the bucket having a cross-bar, of a bracket arranged to straddle said cross-bar, means for securing said bracket to said cross-bar, a ball-socket at the opposite end of said bracket having an entrance through its shell, a plate secured at one end to a traction-rope and having a ball at its opposite end pivotally connected to said socket, and a block secured in said entrance to said socket, adapted to fit the adjacent side of said ball, substantially as described.

13. In a rope and bucket clip, the combination with the bucket, of the bracket secured at one end to said bucket, the socket in the opposite end of said bracket, provided with an open-sided casing and an entrance-aperture, the plate arranged and adapted at one end to be secured to a traction-rope and having a projecting ball adapted to be inserted in said socket through said casing, the plug fitting in said casing and the pin arranged to secure said plug to said casing, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BYRON C. RIBLET.

Witnesses:

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