May 16, 1933. W. H. BONE 1,909,742

CABLE RÉPAIR CARRIAGE

Filed May 16, 1930

Fig. 1.

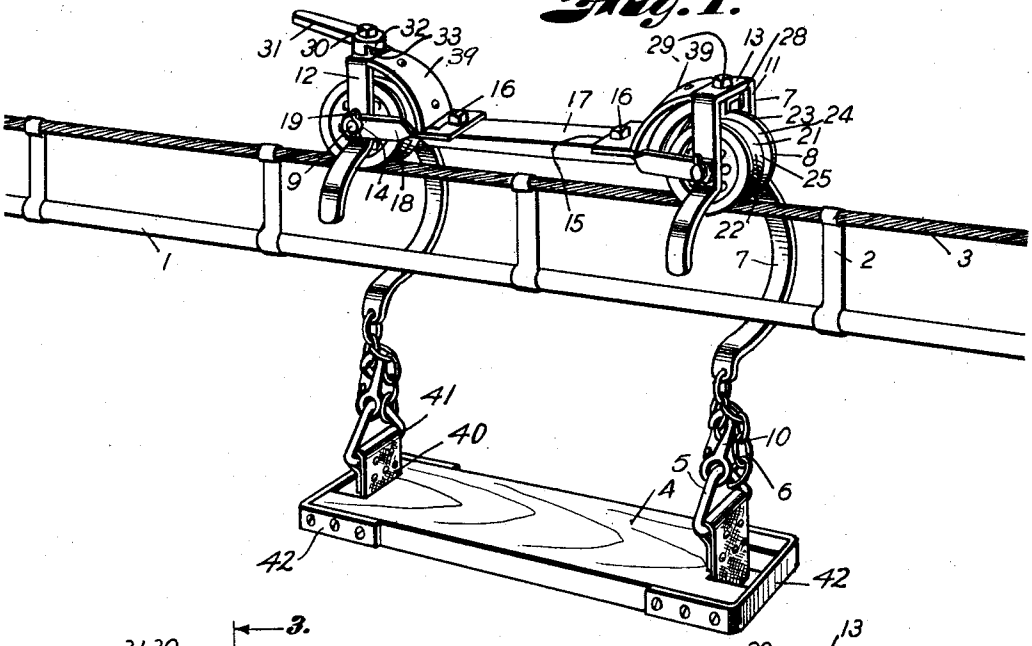


Fig. 2.

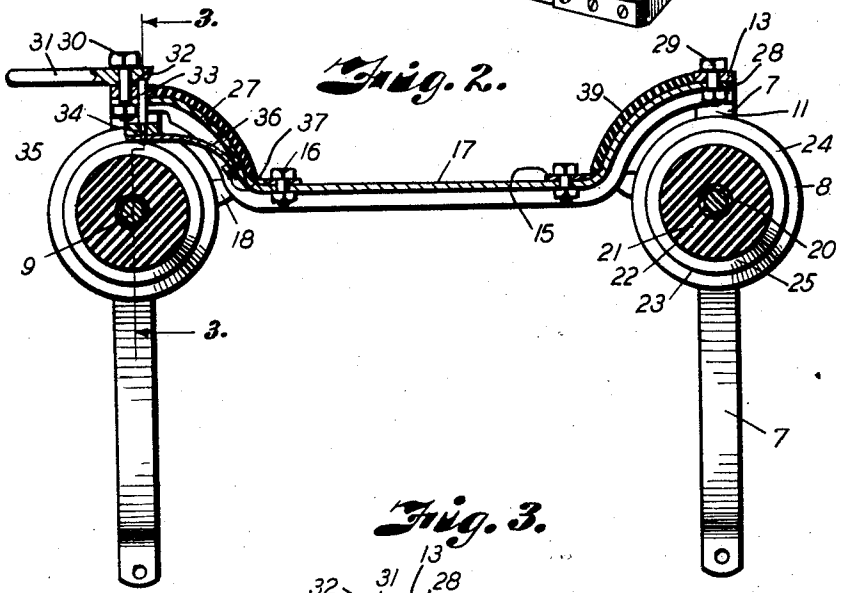


Fig. 3.

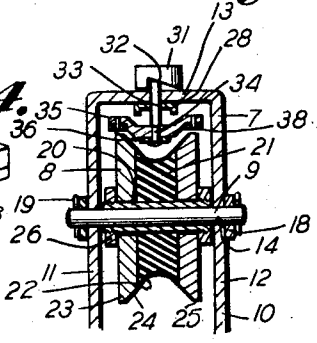
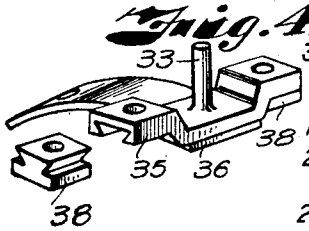


Fig. 4.



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UNITED STATES PATENT OFFICE

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CABLE REPAIR CARRIAGE

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My invention relates to cable repair carriages or chairs adapted to be mounted on and to move along elevated cables or messengers supporting telephone cables or the like, for supporting workmen and transporting workmen engaged in inspecting or repairing the cables.

Cable chairs or cars of this character usually include rigid permanently connected frame members having pairs of metal wheels running on the messenger, the workman grasping the messenger and pushing against the wheel frame to advance the chair. The metal wheels tend to dislodge the rings whereby the cables are supported, and the workman must delay his travel to replace the rings. The messenger and cable sag between supporting poles under their own weight and that of the supported workman, and a chair tends to roll by gravity sometimes at dangerous speed downwardly along inclined portions of the messenger, the workman being required to grasp the messenger to check speed and to grasp the messenger or engage a post with foot or hand to stop the chair.

The workman must hold to the messenger or insert a tool or scotching block under a wheel to lock the chair in a selected position on a messenger. Serious hazards are incurred due to these conditions, including danger of injury to the workman, and possibility that scotching means may fall to injure persons or property beneath the chair and release the chair.

The metal wheels of present cable chairs tend to break particles from the wire messengers and rings and dislodge deposits thereon, which may be thrown into the face of the workman.

The principal objects of my invention therefore are to obviate the hazard of displacement of cable-supporting rings by wheels of a moving chair, to prevent dislodgment of particles from messengers and rings by chair wheels, to provide brakes applicable to chairs having the qualities just referred to whereby the workman may check the speed of a chair without grasping the messenger, to assure retention of a cable chair in a selected position on a messenger, to provide for adjustment of a chair seat to the height of a workman, to provide a shield against which the workman may push to advance a chair, and to provide a collapsible cable chair having adequate rigidity when assembled.

In accomplishing these and other objects of my invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a cable chair constructed in accordance with my invention mounted on a messenger.

Fig. 2 is a longitudinal central vertical section through the chair.

Fig. 3 is a section on the line 3—3, Fig. 2.

Fig. 4 is a detail perspective view of a brake shoe on the end of a spring, and a shoe lining in displaced position.

Referring in detail to the drawing:

1 designates an electrical conductor such as a telephone cable supported by strap hangers 2 commonly called rings from a wire cable 3 which will be referred to as a messenger. 4 designates a seat or platform connected by flexible elements including loops 5 and chains 6 with curved metal straps or arms 7 having upper portions connected and formed as presently described to receive and support wheels 8 on axle shafts 9 to comprise a cable chair or car adapted to be mounted on the messenger to support a workman.

Hooks 10 having eyes mounted on the loops 5 may be engaged with selected links and latched thereto for reducing the length of the flexible elements and adjusting the spacing of the seat from the cable, for workmen of different heights.

Portions of the straps 7 adjacent their free ends are bent to form parallel arms 11 and 12 spaced by bar-like webs 13 and provided with registering journal openings 14 to receive the axle shafts 9 of the wheels which protrude from opposite sides of the arms.

Bars 15 having center openings to receive bolts 16 are rotatively adjustably secured thereby to a longitudinal spacing plate 17 later described, and have longitudinally pro-

jecting laterally spaced fingers 18 extending outside of said arms 11 and 12, and provided with openings to receive the ends of the wheel shafts. Cotter pins 19 inserted in the shafts latch the fingers to the arms and retain the shafts in the frame.

In order to provide wheel surfaces having a high coefficient of friction to engage the messengers and adapted to pass over the rings without disturbing the same, I provide wheels comprising relatively small tubular hubs or cores 20 for rotative mounting on the shafts 9, central or filler portions 21 consisting of disks formed of rubber or the like having recessed peripheries 22 conforming substantially to the contour of the messenger and mounted on the hubs, and rim portions 23 consisting of metal disks extending substantially beyond the edges of the fillers and having beveled inner edge faces 24 merging into the inclined surfaces of the fillers. The faces 24 are tapered from lines on the disks adjacent the outer surfaces of the disks to leave peripheral bearing portions 25.

The metal disks are mounted on the cores on opposite sides of the filler and are spaced thereby, and nuts 26 threaded on the cores retain the rubber and metal disks in close assembly to compress the fillers and prevent distortion of the same when supporting a chair and a workman.

The spacing plate 17 above referred to further includes arcuate end portions 27 extending upwardly between the fingers 18 and bent into parallelism with the body of the plate to form tongues 28 engaging the lower faces of the bars 13 and fixed thereto by bolts 29 and 30 to form a rigid frame including the spacing plate and platform supporting arms.

The bolt 30 at one end of the frame is elongated to provide a pivotal mounting for a lever 31 having a cam face 32, and a pin 33 movable in registering openings in the plate and bar at said end has a lower end 34 fixed in a transverse block or brake shoe 35 mounted on the outer end of an arcuate leaf spring 36 fixed to the spacing plate by a bolt 37, whereby rotation of the lever may cause the cam face thereof to move the pin downwardly and force the shoe against the wheel.

The shoe preferably includes a web portion normally depending into the peripheral recess of the wheel, and lateral wings or flanges having dovetail grooves to receive frictional linings 38 located to engage the untapered peripheral portions of the spaced disks, the linings being thus easily replaceable and firmly retained in the shoes, to which they may be secured by rivets as shown.

A shield 39 is further mounted over each of the end portions of the spacing plate to protect the wheels, and provide a handle-like surface against which the workman may press for advancing the chair along the messenger.

The flexible support for the seat further preferably includes a flexible belt 40 such as a strip of canvas extending beneath the seat having ends extending upwardly through end notches in the seat and provided with reversed ends 41 for securing the metal loops 5 to which the chains and hooks are attached. Metal straps 42 are provided to close the notches.

Ordinary cable chairs having rigid and permanently connected members are not adjustable to workmen of different heights, and when chains and hooks have been employed for suspending a seat, the hooks connect the lower ends of the chains to the frame straps, and must be wired to the links in which they are engaged to prevent the chain from falling should the latching clasps of the hooks become displaced and the hooks slip from the links.

In using chairs constructed in accordance with my invention, a chain may be mounted on a messenger, and the seat normally supported by the chains adjusted by inserting the hooks in selected links, so that if the hook at one end of the seat should become disengaged, the chain at that end would support the seat.

The workman may advance the chair along the messenger by grasping the messenger and pushing against the shield, whereby his hand is protected from contact with the frame parts and wheel, thus contrasting with the use of ordinary chairs wherein the workman must grasp the spacing plate and risking injury to his hand from the messenger and rings.

Should the frame become twisted or the wheel grooves be displaced from true alignment, the bolts 16 may be loosened and the bars 15 rotatively adjusted to restore efficient operating position of the wheels, whereas in ordinary apparatus misalignment cannot be easily corrected, nor corrected while the workman is occupying the chair, and the wheels will soon wear down to a dangerous extent due to slanting frictional engagement with the messenger.

The workman may readily operate the easily accessible brake lever to check the speed of the chair or fix the chair in a selected position, the character of the messenger-engaging portions of the wheel causing the weighted wheels to adhere to the messenger to prevent sliding and permitting the brakes to effect braking, while the brake shoe flanges bear against the spaced peripheries of the metal disks, and thus avoid damage to the compressible central portions of the wheel.

Attention is called to the fact that the peripheries of the wheels extend below the lower ends of he parallel arms 11 and 12, as clearly shown in Fig. 1, whereby the wheels

may rid over guards or like members placed on messengers to protect the messengers and cables from electrical conductors extending above the same that might fall thereon.

The rubber or like central wheel portions being relatively soft will roll on the messenger without hazard of dislodging particles therefrom, and due to their compressible character will pass over the loop-like portions of the rings without displacing the same.

The bolts 16, 29 and 30 may be removed for disassembling and collapsing the chair for transport or storage.

What I claim and desire to secure by Letters Patent is:

1. In a wire-engaging device of the character described, a frame, a wheel rotatively mounted on the frame including an elastic wire-engaging portion and a metal rim portion, and a brake including a lever and a lever-operated pin mounted on the frame and adapted to engage said metal portion of the wheel.

2. In a cable repair carriage, a frame including a longitudinal plate having an upbent end finger, a seat, a seat-supporting strap connected to said finger, a wheel rotatively supported by said strap, and braking means including a brake shoe engageable with the wheel and means for pressing the shoe against the wheel carried by said finger.

3. In a cable repair carriage including a frame, and wheels rotatably mounted on the frame having cable engaging peripheries, a brake including a leaf spring fixed to the frame and having a free end projecting over one of the wheels, a brake shoe carried on the free end of the leaf spring, and means on the frame for moving the brake shoe into braking relation with said wheel.

4. In a cable repair carriage including a frame, and wheels rotatably mounted on the frame having cable engaging peripheries, a brake including a leaf spring fixed to the frame and having a free end projecting over one of the wheels, a brake shoe carried on the free end of the leaf spring, a pin member carried by said brake shoe and slidable in the frame, and a cam lever pivotally mounted on the frame having a cam for engaging the pin member to move the shoe into braking relation with said wheel.

5. In a cable repair carriage including a frame, and wheels rotatably mounted on the frame having cable engaging peripheries, a brake including a leaf spring fixed to the frame and having a free end projecting over one of the wheels, a brake shoe carried on the free end of the leaf spring, and cam means on the frame for moving the brake shoe into braking relation with said wheel.

6. In a cable carriage, a longitudinal plate member, bracket members at the ends of the plate member, wheels having cable engaging peripheries rotatably carried by said bracket members, a curved spring leaf fixed to the plate member and having a free end projecting over one of the wheels, a brake shoe carried by the free end of said spring, and means including a cam lever for moving the brake shoe into braking engagement with said wheel.

7. In a cable repair carriage, a frame, a wheel rotatively mounted on the frame including an elastic wire engaging portion, and a metal rim portion and a brake including a lever and a lever operated member mounted on the frame to engage the metal portion of the wheel upon operation of the lever.

8. In a cable repair carriage including a frame, a wheel rotatively mounted on the frame, and a brake including a wheel engaging member on the frame, and a cam lever on the frame for retaining the wheel engaging member in brake setting position.

In testimony whereof I affix my signature.

WALTER H. BONE.