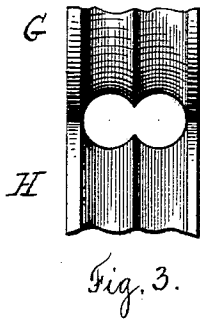
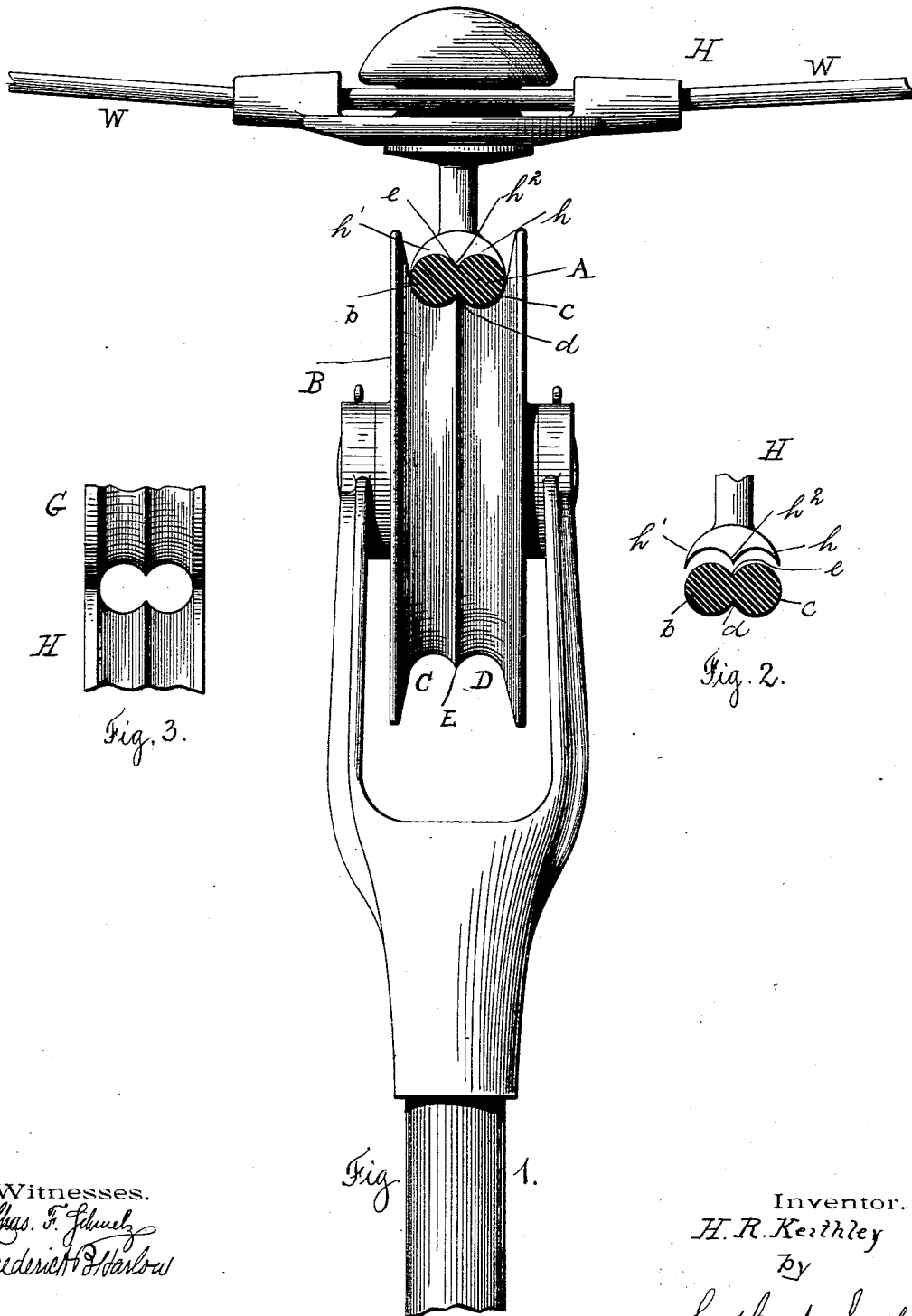


(No Model.)

H. R. KEITHLEY.
TROLLEY WIRE AND TROLLEY THEREFOR.

No. 560,097.

Patented May 12, 1896.



Witnesses.
Chas. F. Schuch
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UNITED STATES PATENT OFFICE.

HERBERT R. KEITHLEY, OF BUFFALO, NEW YORK.

TROLLEY-WIRE AND TROLLEY THEREFOR.

SPECIFICATION forming part of Letters Patent No. 560,097, dated May 12, 1896.

Application filed August 24, 1895. Serial No. 560,341. (No model.)

To all whom it may concern:

Be it known that I, HERBERT R. KEITHLEY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Trolley - Wires and Trolleys Therefor, of which the following is a specification.

The aim of this invention is to provide a trolley-wire which may be easily and securely held in position, which will present a large surface or line of contact to the trolley-wheel, and to provide a trolley-wheel of peculiar construction to nicely engage said trolley-wire and to run centrally and easily in contact therewith. To these ends I make the trolley-wire with a plurality of ribs and grooves in cross-section, each rib being substantially circular in cross-section. In the particular form shown I have made the wire with two ribs and with two grooves, or so that a cross-section of the wire is like a figure 8 laid on its side. To support the trolley-wire, I preferably use hangers or clips, which are attached, as by solder, to part of each rib and which fit into the groove between the ribs. This will leave the lower part of the wire, consisting of part of each of the ribs and the groove between the same, exposed to the trolley-wheel, so that the trolley-wheel will run on the wire without striking or hitting the hangers. I preferably use a trolley-wheel which has two grooves and a middle rib to engage the exposed part of the ribs and the groove of the trolley-wire. This will give a large or long line-contact between the trolley wire and wheel. The central rib of the wheel, fitting the exposed groove of the wire, will keep the wheel centrally and nicely in contact with the wire, so that the wheel will run very smoothly and evenly. I preferably arrange or mount the wire so that the exposed working groove is on the bottom of the wire, so that ice or dirt will not collect in the same.

Referring to the drawings forming part of this specification, which show one way in which my invention may be carried out, Figure 1 represents a trolley wire and wheel constructed to accord with my invention. Fig. 2 is a detail view showing the way in which

the hangers or clips are secured to the wire, and Fig. 3 is a view showing one way in which my wire may be made.

In detail, H designates a hanger or clip of any approved construction, supported as from the usual stay or cross wire W. The trolley-wire is designated by A, and the same has two ribs *b* and *c* and two grooves *d* and *e*, so that the wire is substantially like a figure 8 placed sidewise in cross-section. The hangers are preferably shaped to fit the top of the wire—that is, the same have two ears *h* and *h'* and a middle rib in cross-section. The wire is brazed, welded, or soldered to these hangers. The irregular engaging-surfaces of the hangers will form a construction that will hold the wire very securely and will leave only the rounded or smooth portion of the hangers exposed. Also it will be noted that by this construction the hangers will be centered of the wire, so that the wire will be accurately hung and so that the trolley-wheel will not strike or hit any portion of the hangers. It will be also noted that the joint between each hanger and the wire is substantially on top of the wire, so that sparks or arcing will not tend to weaken the same.

Represents the trolley-wheel, and the same is formed to have two grooves C and D and a central rib E, so that the same will be self-centering and will fit closely to the wire. This will provide a large contact between the wheel and a wire, and a construction whereby the wheel will run very smoothly and accurately on the wire. The rib E on the wheel engaging the groove *d* of the wire will keep the wheel in position on the wire and will prevent the same from leaving or jumping from the wire in many places where this happens in the ordinary constructions.

My construction is especially applicable for use in connection with heavy currents and where high speed is desired, as the trolley-wheel will easily and nicely take the current from the wire without sparking or arcing at high speed, due to the large contact and smooth running of the same.

One way my wire may be cheaply made is to roll or draw the same between rolls or dies shaped as shown by the rolls G and H in Fig. 3.

While my construction is particularly designed for overhead work, the same may be advantageously used in other locations, and other changes and modifications made by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

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

1. The combination of a trolley-wire having two ribs and two grooves, and means for supporting said trolley-wire so that a trolley-wheel may engage both of said ribs and a groove between them, substantially as described.

2. The combination of a trolley-wire having substantially the shape of a figure 8 in cross-section, and means for supporting said wire so that a trolley-wheel can engage both ribs

or enlargements of the wire, substantially as described.

3. A trolley-wire having two ribs and two grooves, and hangers shaped to engage said ribs and one of the grooves to which said wire is secured, whereby said ribs and one groove will be presented to the trolley-wheel, substantially as described.

4. A trolley-wire having two ribs and two grooves, hangers engaging one of said grooves and both ribs, and a trolley-wheel engaging both ribs and the other groove, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HERBERT R. KEITHLEY.

Witnesses:

FREDERICK B. HARLOW,
LOUIS W. SOUTHGATE.