No. 697,937. Patented Apr. 15, 1902.

I. L. EDWARDS.

TROLLEY WIRE HANGER.

(Application filed Jan. 29, 1902.)

(No Model.)

Fig. 1.

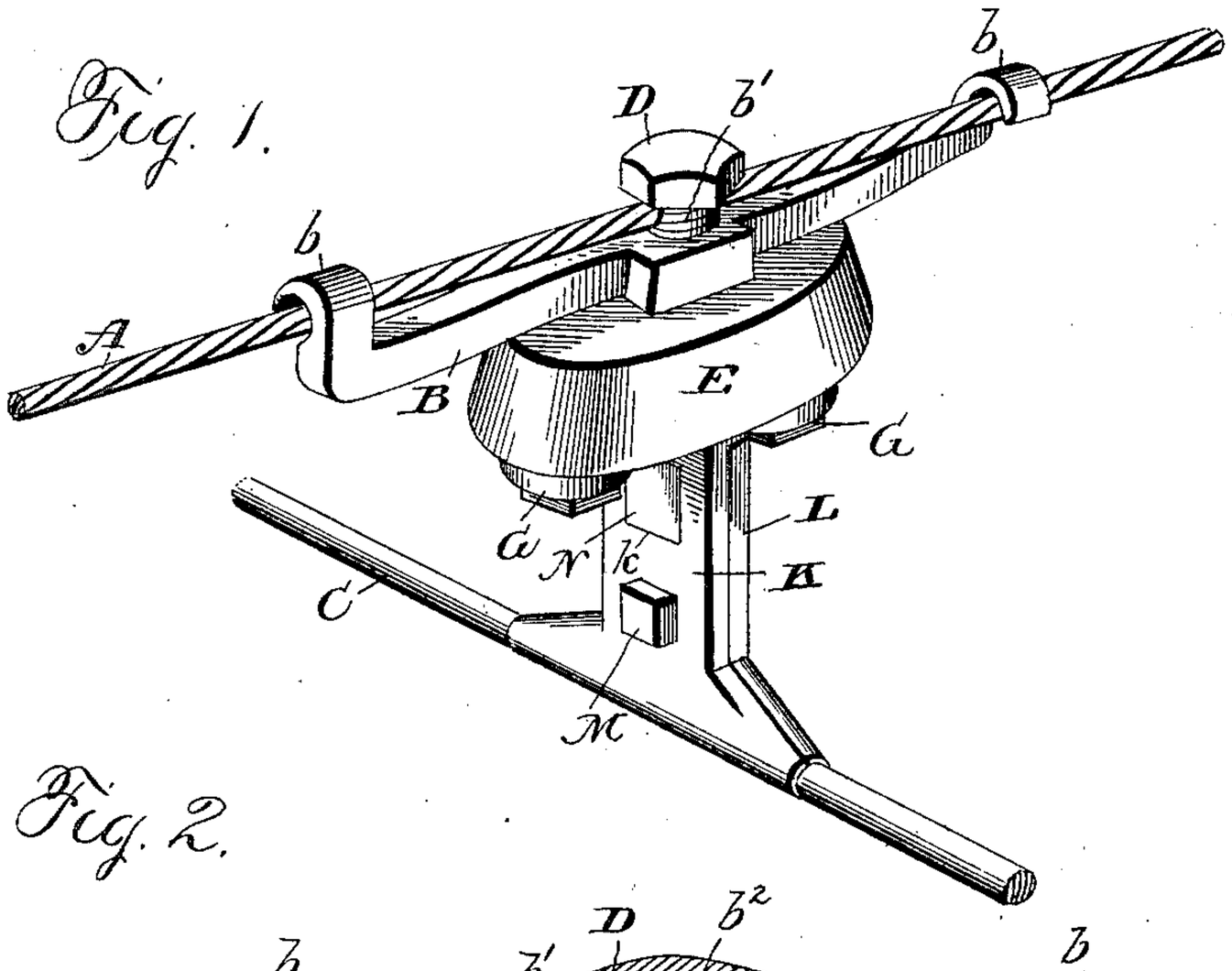

Fig. 2.

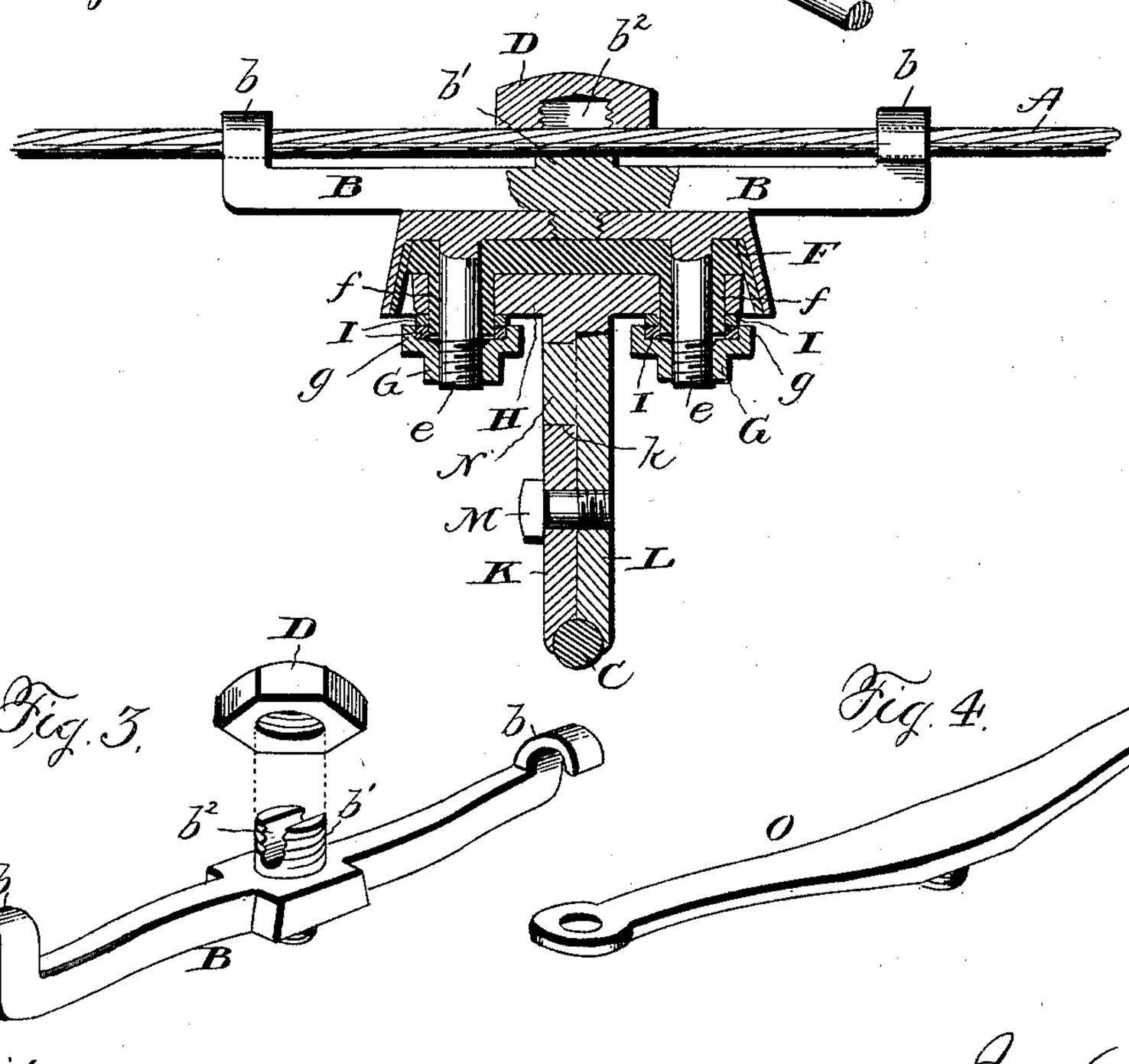

Fig. 3.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC L. EDWARDS, OF AURORA, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO EBENEZER A. SANDERS, LOUSIE M. COTA, AND AURELIE COTA, OF AURORA, ILLINOIS.

TROLLEY-WIRE HANGER.

SPECIFICATION forming part of Letters Patent No. 697,937, dated April 15, 1902.

Application filed January 29, 1902. Serial No. 91,853. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. EDWARDS, of Aurora, in the county of Kane, and in the State of Illinois, have invented certain new and useful Improvements in Trolley-Wire Hangers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a trolley-wire hanger embodying my invention; Fig. 2, a vertical section through the same; Fig. 3, a detail view in perspective of the cross or stringer wire clamp and the clamping-nut separated, and Fig. 4 a similar view of a support that may be used in place of the clamp shown in the other figures where the trolley-wire is to be suspended from a bridge or other structure.

The object of my invention is to provide a trolley-wire hanger of such construction as to greatly facilitate and expedite the work of hanging the trolley-wire, have capability of all adjustment needed to properly position the wire, and withal be strong and of few parts; and to this end my invention consists in the trolley-wire hanger having the construction substantially as hereinafter claimed.

In the adaptation of my invention to a hanger for supporting a trolley-wire from a cross or stringer wire A, I employ a bar B, having at each end a hook *b* to catch over the wire, the hooks being preferably oppositely turned, and at its mid-length a vertical stud or post b', that has a vertical slot b^2 extending downward from its upper end and in line with the two hooks, so that the wire A when engaged by the hooks and in the slot of the stud or post will be perfectly straight and free from kinks or bends either vertically or laterally. In placing the bar B on the stringer-wire one hook *b* is first hooked or caught over the wire, the bar swung upward to place the wire in the post-slot, and then by springing the stringer-wire downward and laterally it is passed over the second hook and into engagement therewith. The slot *b* and the hooks are sufficiently wider than the diameter or gage of the stringer-wire as to allow slight lateral play to facilitate the work of placing the second hook in engagement with the stringer-wire. As the bar B by its hooks and slotted post has loose or free engagement with the stringer-wire and as the latter has no bends or kinks, said bar can most easily be slid or shifted along the stringer-wire as may be found necessary to properly place the hanger in position over the trolley-wire C or to locate the latter centrally over the track. To securely hold the bar B in the desired position along the stringer-wire, I use the simple device of a nut D on the stud or post *b*, the latter being exteriorly threaded for the nut. The wire is thus firmly held between the nut above it and the bottom of the slot *b*.

Beneath the bar B is an insulator-cup E, from which depend two posts *e* and *e*, threaded at their lower ends. The side walls of the cup are covered or lined with insulating material, and on the under side of the cup is a block F of insulating material, while a collar or sleeve *f* of like material is placed on each of the posts *e* for a portion of its length. Clamped against the block F by nuts G and G on the respective posts *e* and *e* is a metal plate H, a hole being provided therein through which passes the insulated or covered portion of each post *e*, a part of each collar or sleeve protruding below the plate. Encircling such protruding part are two washers I and I, of insulating material, the upper one of leather and the lower one of rubber. The latter is seated within a recess in the upper side of the nut formed by an annular flange *g* and being thereby housed and protected, as well as retained by the nut when removed from the post.

Depending from the plate H is a two-part clamp for the trolley-wire C, one member, K, of which is integral with the plate H and the other, L, is loose therefrom and forms the movable member of the clamp. A screw M, passing through a plain opening in the first member K and into a threaded opening in the movable member L, binds the clamp on the trolley-wire. A lug, projection, or tenon N on the side of the movable member, that is rectangular in form, enters a like-form opening *k* in the fixed member and serves as a

guide for the movable member in moving to and from the fixed member, prevents endwise movement of said member, and supports and holds it in position when the screw M is out of place. The upper end of the movable member reaches high enough so that when said member is moved away from the fixed member (the screw M being removed) it will encounter the adjacent nut G before the lug or tenon N passes out of the opening *k* in the fixed member, and thus the separation and possible loss of the movable member are prevented. The movable member does not quite reach to the plate H, and the fixed member is extended laterally above it in order to give strength to such fixed member, and to facilitate the passage of the upper end of the movable member beneath the shoulder or overhang thus formed above it the upper end of the movable member is slightly inclined downward and inward toward the fixed member.

The wire-gripping portions of the two clamp members consist of a groove in the inner side of each of the members, so that each member from the groove upward is of substantially uniform thickness, and therefore is very strong.

It will be seen that by merely loosening the screw M the hanger can be freed for shifting along the trolley-wire to suit the position of the stringer-wire. With this shiftability of position and the shiftability along the stringer-wire it will be seen that my hanger is perfectly adaptable to the requirements of both trolley-wire and stringer-wire. Where, as at a curve, the stringer-wire extends only part way across, it is evident my hanger can be used therewith, the free end of the stringer-wire being given a twist.

To adapt my invention for use where no stringer-wire is employed—as, for example, where the trolley-wire passes beneath a bridge—the bar B is detachably connected to the insulator-cup, so that it may be removed therefrom, and a support O, suitable for attachment to the bridge, used. Said detachable connection consists, preferably, of a threaded hole in the top of the insulator-cup and a threaded lug on the under side of the bar B. The support O is a simple bar having eyes or holes at each end for fastening bolts or screws and a threaded lug at its mid-length for engagement with the threaded hole in the insulator-cup.

It will be apparent that my invention has the important qualities of being extremely simple in construction, entirely practical, easy and quick application to both stringer and trolley wires, and easy and ample adjustment or adaptability to the conditions of use.

Having thus described my invention, what I claim is—

1. A trolley-wire hanger having shiftable means for engaging a stringer-wire comprising a bar having hooks, a slotted screw-threaded stud, and a nut on the stud to directly engage the stringer-wire, the hooks and slot in the stud being in alinement whereby bending or kinking of the wire is obviated, substantially as described.

2. A trolley-wire hanger having shiftable means for engaging a stringer-wire comprising a bar having hooks, a slotted stud screw-threaded, and a nut on the stud, and having a shiftable trolley-wire clamp, substantially as described.

3. A trolley-wire hanger having a trolley-wire clamp comprising a fixed and a movable member, a screw to draw them together, a lug on one member to enter an opening in the other, and means to limit the separation of said members at a point before the lug becomes freed from the opening, substantially as described.

4. A trolley-wire hanger having an insulator-cup and a trolley-wire clamp secured to the cup by nuts and threaded posts, said clamp having a movable member adapted to engage one of the nuts to limit the separation of the movable member from the other member, substantially as and for the purpose described.

5. In a trolley-wire hanger, the combination of an insulator-cup, a trolley-wire-engaging part, posts and nuts connecting the latter and the cup, and washers seated in cavities in the nuts, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of January, 1902.

ISAAC L. EDWARDS.

Witnesses:
EBENEZER A. SANDERS,
LOUIS T. COTA.