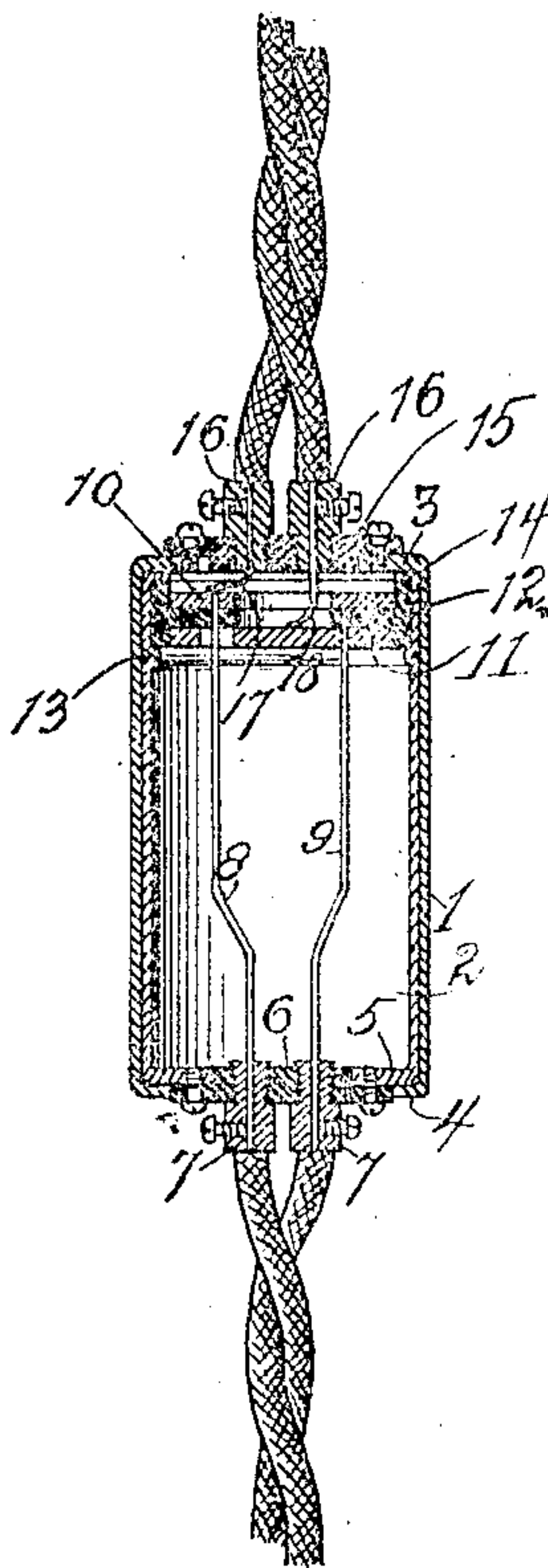


No. 892,928.

PATENTED JULY 7, 1908.

H. A. BLACK.
SWIVEL JOINT FOR ELECTRIC WIRES.
APPLICATION FILED OCT. 24, 1907.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HORATIO A. BLACK, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO SAMUEL E. STARR, OF TOLEDO, OHIO.

SWIVEL-JOINT FOR ELECTRIC WIRES.

No. 892,928.

Specification of Letters Patent.

Patented July 7, 1908.

Application filed October 24, 1907. Serial No. 398,897.

To all whom it may concern:

Be it known that I, HORATIO A. BLACK, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Swivel-Joints for Electric Wires; 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 letters and figures of reference marked thereon, which form a part of this specification.

A familiar difficulty encountered in handling portable electric apparatus, such as lamps, telephones, and the like, is that the wire conductors become twisted and tangled, sometimes breaking the wires and frequently interrupting the circuit.

My invention relates to and its object is to provide means for overcoming the difficulties and objections above indicated and, more particularly, to provide a swivel joint for electrical conductors which will permit the wires to be twisted and turned without becoming tangled, without breaking, and without interruption of the circuit. I attain these objects by means of the devices and arrangement of parts hereinafter described and shown, and illustrated in the single figure of the accompanying drawing which is a central longitudinal sectional elevation of my device.

In the drawings, 1 and 2 are, respectively, sheet metal cylindrical tubes of such diameter that one telescopes within the other with a fit which permits the two parts to rotate upon their common axis. The outer tube 1 is inwardly flanged at each end, as at 3 and 4, the flanges overlapping the ends of the inner tube 2 to prevent the longitudinal separation of the two tubes. One end of the inner tube is inwardly flanged, as at 5, leaving an opening in the exposed end of the tube which opening is covered by a flanged plate of vulcanite or other suitable insulating material, 6, which is secured to and rotates with the inner tube. To the plate 6 are secured binding posts 7—7 for the inleaving and outleaving wires 8—9, the former wire being secured to a copper disk 10, the latter being secured to a copper disk 11. These disks or plates are held in fixed relation to the inner

tube and are separated by a disk of vulcanite or other suitable insulating material 12, which is countersunk on opposite sides for the reception of the two copper disks. The part 12 may be conveniently secured in place by forming in the internal tube 2 an inwardly projecting bead 13 against which one side of the margin of the part 12 rests, the other side of this margin being clasped by an inwardly turned flange 14 at the extremity of the inner tube. The opening left in the end of the outer tube 1 by the inwardly turned flange 3 is covered and closed by a flanged disk of vulcanite or other suitable insulating material, 15, secured to and revoluble with the tube 1. To the part are secured binding posts 16 adapted for connection with the inleaving and outleaving wires. The inwardly projecting end of one of these wires forms a brush 17 in contact with the copper disk 10 and the inwardly projecting end of the other conductor forms a brush 18 which contacts with the copper disk 11, there being a central opening through the plate 10 and the part 12 which permits the latter brush to contact with the inner copper plate 11 without touching the copper plate 10.

My device is assembled and operated as follows: The disk 12 with its two copper plates fitted closely and securely in place is slipped into the open end of the inner tube 2 against the rib 13 and the flange 14 is turned inwardly engaging the copper plates, and their insulated support securely in place. The conductors 8 and 9 are connected with their respective copper plates 10 and 11. The insulating disk and binding posts 7 are slipped over the projecting ends of the conductors 8 and 9 and the plate 6 is secured in place upon the inwardly turned flange of the outer end of the inner tube 2. The inner end of the inner tube is now slipped into the open end of the outer tube against the flange 3 and is secured in place by turning inwardly the flange 4. When the inner tube is thus pushed into place the plates 10 and 11 come in contact with the brushes 17—18. Now when the inleaving and outleaving wires are connected with the binding posts 7 and 16 the circuit is complete and the inner and outer tubes may be rotated relatively to each other without breaking the circuit. Now when the wires are turned and twisted the

two tubes accommodate themselves to these movements without entangling or forming kinks or breaks in the conductors.

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

1. A pair of telescoped tubes arranged for axial rotation one upon the other and secured against longitudinal separation, a pair of contact plates insulated from each other and from the tubes and rotatable with one of said tubes, a pair of brushes rotatable with the other tube and in contact with said plates, a pair of wires connected at one end of the tubes with said plates, and a pair of wires connected with the brushes at the other end of the tubes.

2. A swivel joint for electric wires comprising a pair of tubes one telescoped within

the other and adapted to rotate axially relatively to each other, means for preventing the longitudinal separation of said tubes, a pair of contact plates secured within the inner tube and insulated from the tubes and from each other, conductors connected with said contact plates and leading out through one end of the inner tube, brushes which contact with said contact plates and which lead out through the opposite end of the outer tube, and means for securing inleading and outleading conductors to the outer opposite ends of said two tubes.

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

HORATIO A. BLACK.

Witnesses:

H. N. HANSEN,
ADA E. CAMERON.