

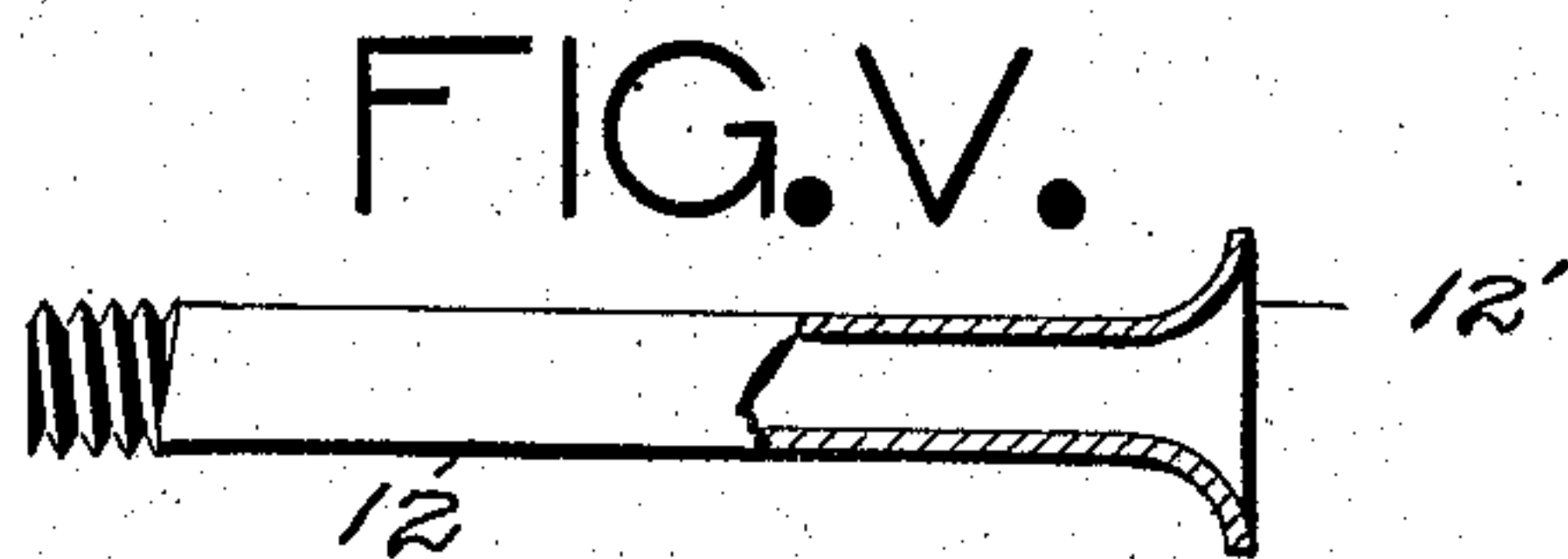
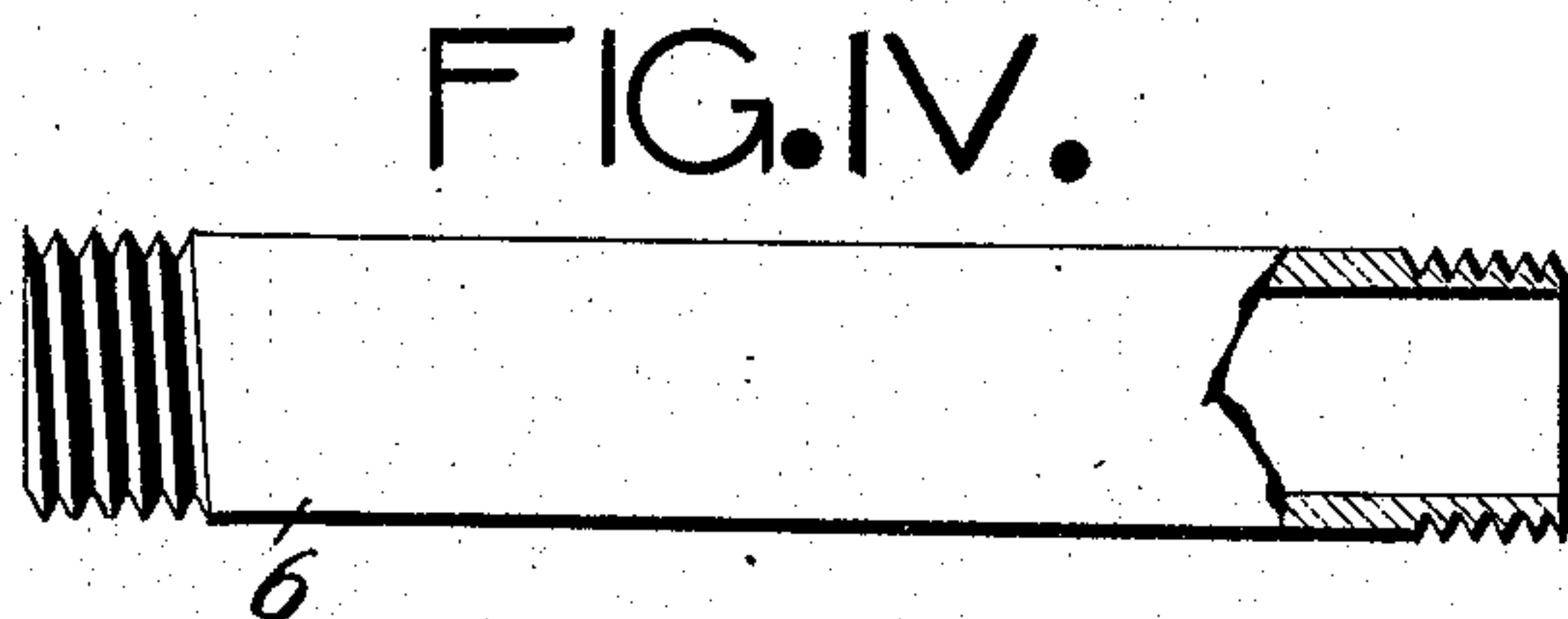
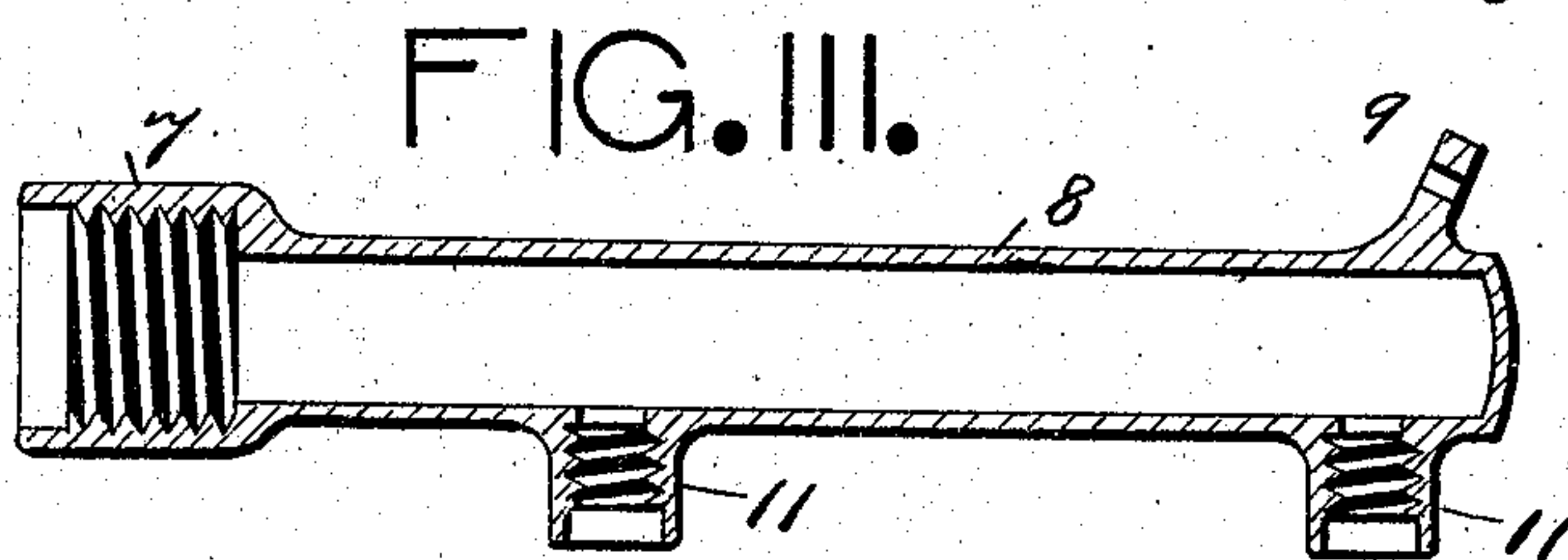
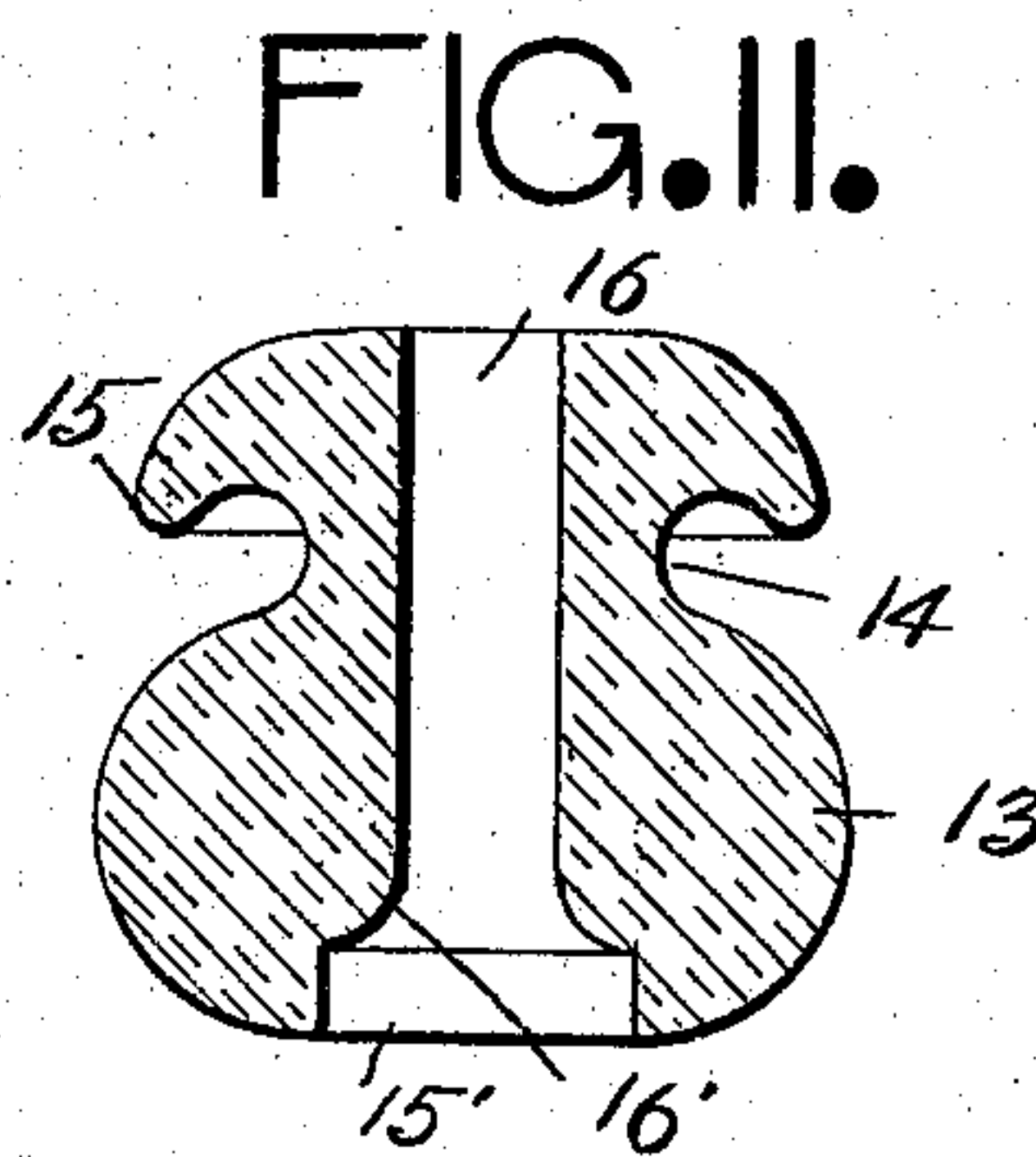
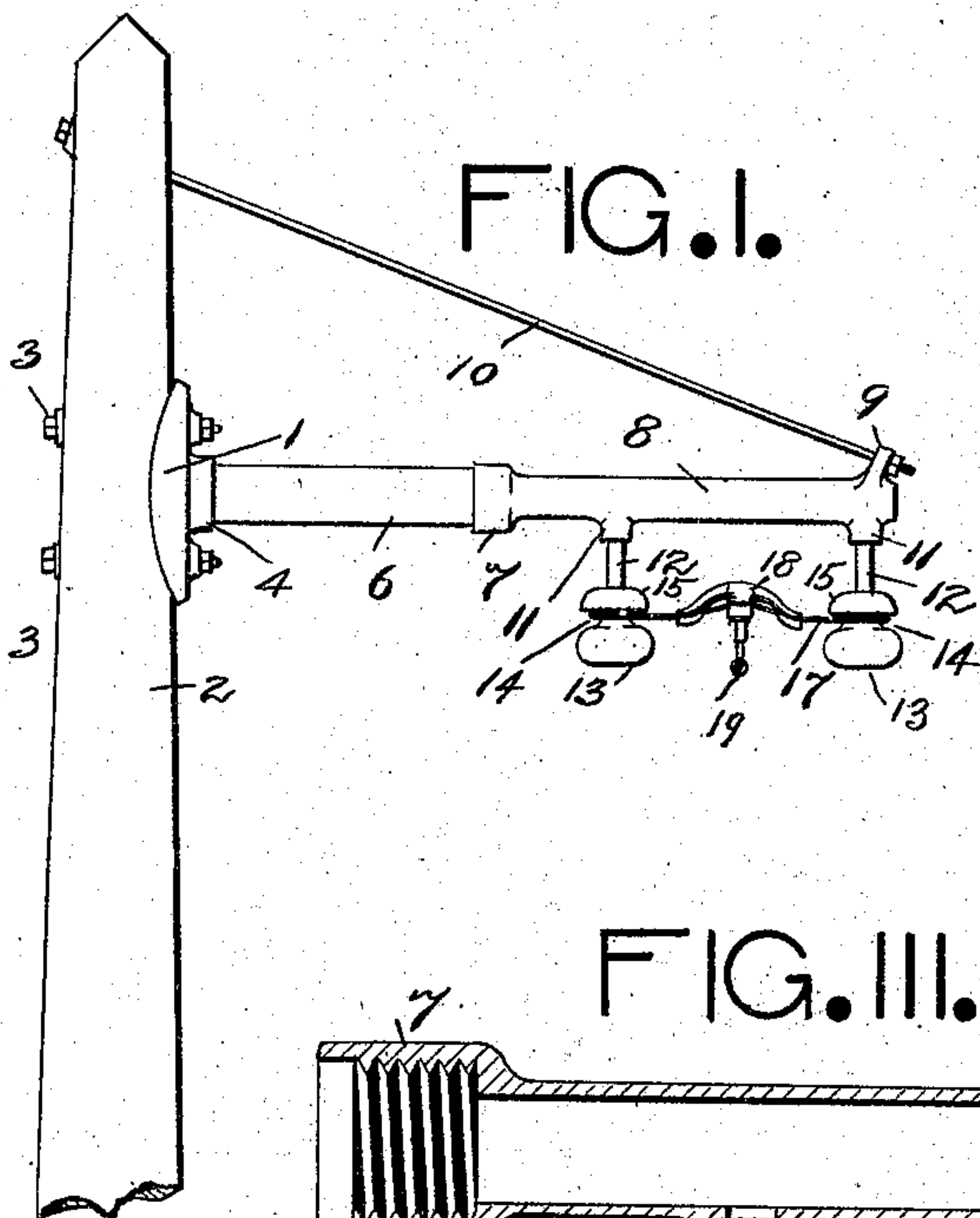
J. BRYAN, H. ETHERIDGE & E. McC. BALSINGER.

AERIAL TROLLEY SUPPORT.

APPLICATION FILED APR. 18, 1907.

899,859.

Patented Sept. 29, 1908.



Witnesses.
J. M. Rutledge.
J. W. Carl

James Bryan,
Harry Etheridge, and
Edgar Mcbormack Balsinger
Inventors
By Richard J. Harrison
their Attorney.

UNITED STATES PATENT OFFICE.

JAMES BRYAN, OF PITTSBURG, HARRY ETHERIDGE, OF McKEESPORT, AND EDGAR McCORMACK BALSINGER, OF PITTSBURG, PENNSYLVANIA.

AERIAL-TROLLEY SUPPORT.

No. 899,859.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed April 18, 1907. Serial No. 368,835.

To all whom it may concern:

Be it known that we, JAMES BRYAN, a subject of Edward VII, King of Great Britain, and HARRY ETHERIDGE and EDGAR McCORMACK BALSINGER, citizens of the United States, residing at Pittsburg, McKeesport, and Pittsburg, respectively, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Aerial-Trolley Supports; and we 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.

Our invention relates to aerial trolley systems and has for its object the provision of a simple, practical and efficient means of supporting the trolley wire, being admirably adapted for service in connection with our improved trolley-wire hanger, filed March 25 20th, 1907, Serial No. 363,389, and capable of use with other forms. The form selected by us as best adapted to carry out our invention being fully shown and described in the accompanying drawings and specifications, and later pointed out in the appended claims, in which drawings;

Figure I. is a vertical view of a pole equipped with our improved supporting means. Fig. II is a vertical section of one of the insulators. Fig. III is a longitudinal section of a portion of the supporting arm. Fig. IV. is a longitudinal view of another portion of said arm, partly in section. Fig. V is a longitudinal view of one of the insulator pins, partly in section, and Fig. VI is a plan of the pole connecting plate.

In the following description similar reference characters denote like parts.

The structure comprises a plate 1, connected to engage against the rounded surface of a pole 2 and connected to said pole by bolts 3, said plate having formed thereon a boss 4 with a threaded orifice 5 therein. Connected to said plate by means of one of its threaded extremities is a horizontally disposed tubular member 6, which is threadably connected, at its opposite end, to the socket, 7, of the similarly disposed tubular extension piece 8, said piece 8 being provided with a diagonally disposed lug 9 connected

to a brace rod 10, extending from the aforesaid pole to establish rigidity of the arm. The aforesaid extension piece 8 is further provided, at its under side, with downwardly disposed sockets 11 provided with interior screw threads into which are threadably secured the vertically disposed hollow insulator pins 12 the lower or free extremities 12' of which are flared outwardly in a manner similar to that of a bell to form a shoulder. Arranged over these insulator pins and connected thereto are the insulating members 13, having a contracted neck 14, surrounded by a petticoat 15, the openings 16 of said insulator members, for engaging over the pins, being correspondingly formed with a flared shoulder 16' and accompanying petticoat 15' to extend below the flared end of the pin. Extending horizontally between and connected to said insulator members, by means of loops formed at its extremities to engage the contracted necks of the same, is the span wire 17 to which is connected the hanger 18 for the trolley wire 19.

In the structure disclosed the parts are simple, practical, etc., and in consequence of mechanically reinforcing the walls of the tube members 6 and 12, (which are sensibly weakened at the threaded extremities) by providing the "shrouding" or "embrace" as shown formed on members 4, 7, and 11 and extending beyond the threading, we provide a strong and very serviceable form of trolley support.

By suitably adjusting the length of the horizontally disposed member 6 we compensate for any severe irregularities in the disposition of the pole to the track and thereby avoid any interference or change to the permanent arrangement of the head or member 8; all slight irregularities as to disposition of pole to track are overcome by the sliding advantage of trolley wire hanger 18 on span wire 17.

The span wires 17 are permanently attached to the insulators and pins, in pairs, before taken out into the field (thereby materially reducing a very expensive feature of all field work) and when screwed tightly into the orifices 11 the span is ready to receive the trolley hanger 18. The easy "rising and falling" action of the span wire (on account of the hinging loop effect of the span wire around the insulator) reduces the blow of the passing trolley to a minimum.

While we have shown and described specifically a certain form of structure, capable of fulfilling the objects we have in view, we also recognize and hold that variations in the structure, etc. may be made without departing from the scope of our invention;

Having thus shown and described an operative device, we claim as our invention:

1. The combination with a vertically disposed pole, of a plate secured thereto and provided with a threaded socket, a horizontally disposed tubular arm secured in said socket and provided upon its under side with spaced threaded sockets, downwardly disposed insulator pins secured in said sockets the free ends of each terminating in a bell shape, insulators having openings there-through corresponding to and engaging over the free ends of said pins and provided with external grooves thereabout, a horizontally disposed span-wire engaging about the grooved portions of and extending between said insulators, and a brace rod extending from the outer end of the arm to and connecting the pole above the arm.

2. The combination with a vertically disposed pole, of a plate secured thereto and provided with a threaded socket, a horizontally disposed tubular arm secured in said plate socket and comprising two sections threadably connected to one another, the outer section having spaced and threaded sockets upon its under side, downwardly disposed insulator pins secured in said sockets the free ends of each terminating in a bell shaped mouth, insulators having openings therethrough corresponding to and engaging over the free ends of said pins and provided with external grooves thereabout, a horizontally disposed span-wire engaging about the grooved portions of and extending between said insulators, and an angularly disposed brace rod extending down from the pole and connecting the outer end of the arm.

3. The combination with a vertically disposed pole, of a plate secured thereto and provided with a threaded socket, a horizon-

tally disposed tubular arm secured in said plate socket and comprising two sections threadably connected to one another, the outer section having a lug at its extreme end and a pair of spaced threaded sockets upon its under side, downwardly disposed hollow insulator pins secured in said sockets the free ends of each terminating in a bell shaped mouth, insulators having openings there-through corresponding to and engaging over the free ends of said pins each of which is provided with an annular groove thereabout with an overhanging petticoat, a horizontally disposed span-wire engaging about the grooved portions of and extending between said insulators, and an angularly disposed brace rod extending down from the pole and connecting the lug on the end of the arm.

4. The combination with a vertically disposed pole, of a plate secured thereto and provided with a threaded socket, a horizontally disposed tubular arm secured in said plate socket and formed in sections threadably secured to one another the outer section having spaced and threaded sockets upon its under side, downwardly disposed insulator pins secured in said sockets the ends of which are flared outwardly, insulators surrounding the flared ends of said pins and projecting there below each of which insulators is provided with an annular groove thereabout with an overhanging petticoat, a horizontally disposed span-wire engaging about the grooved portions of and extending between said insulators, a trolley hanger secured upon said span-wire, and an angularly disposed brace rod extending down from the pole and connecting the outer end of the arm.

In testimony whereof, we affix our signatures, in presence of two witnesses.

JAMES BRYAN.
HARRY ETHERIDGE.
EDGAR McCORMACK BALSINGER.

Witnesses:

W. W. HOWARD,
J. B. CAMPBELL.