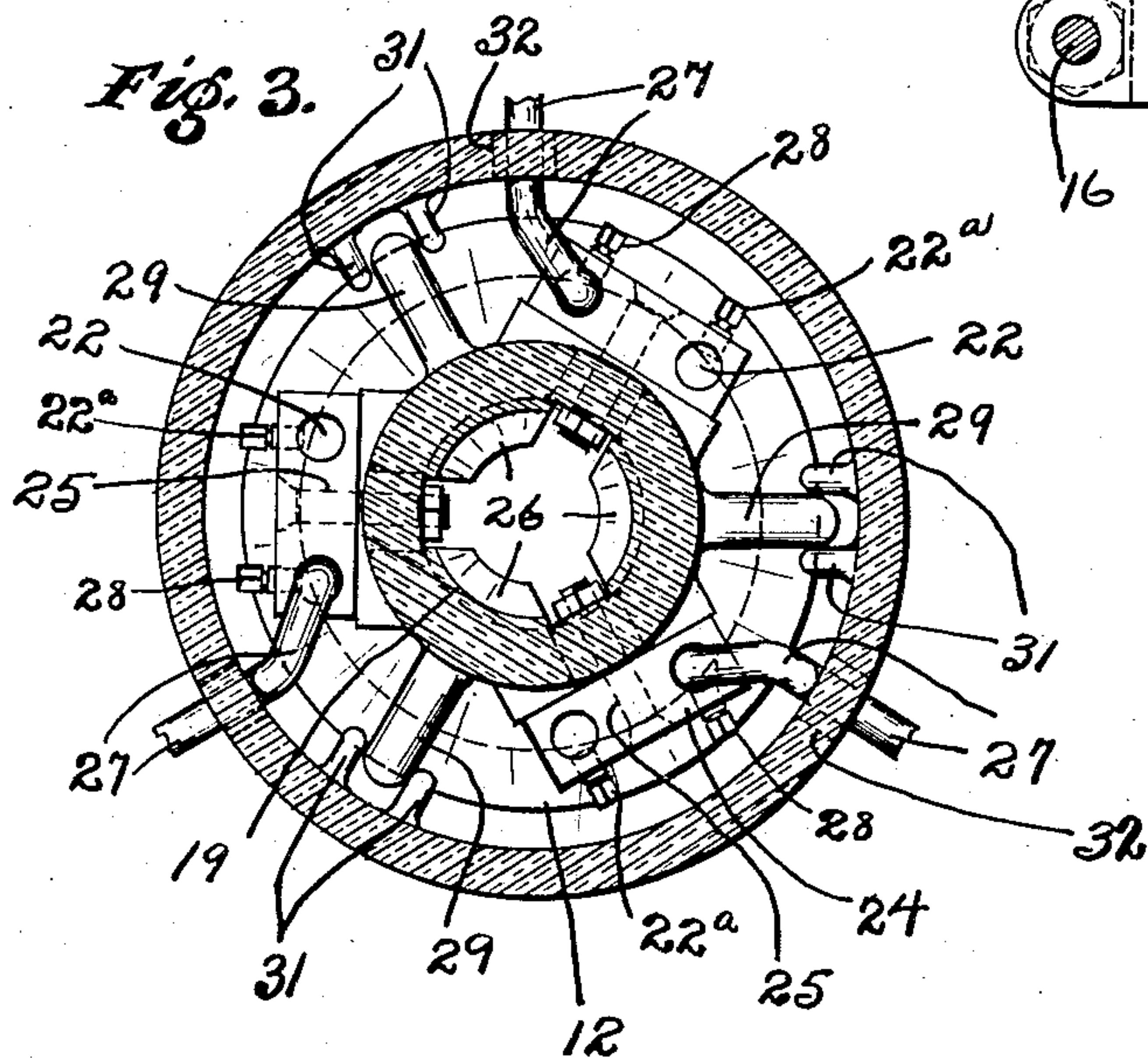
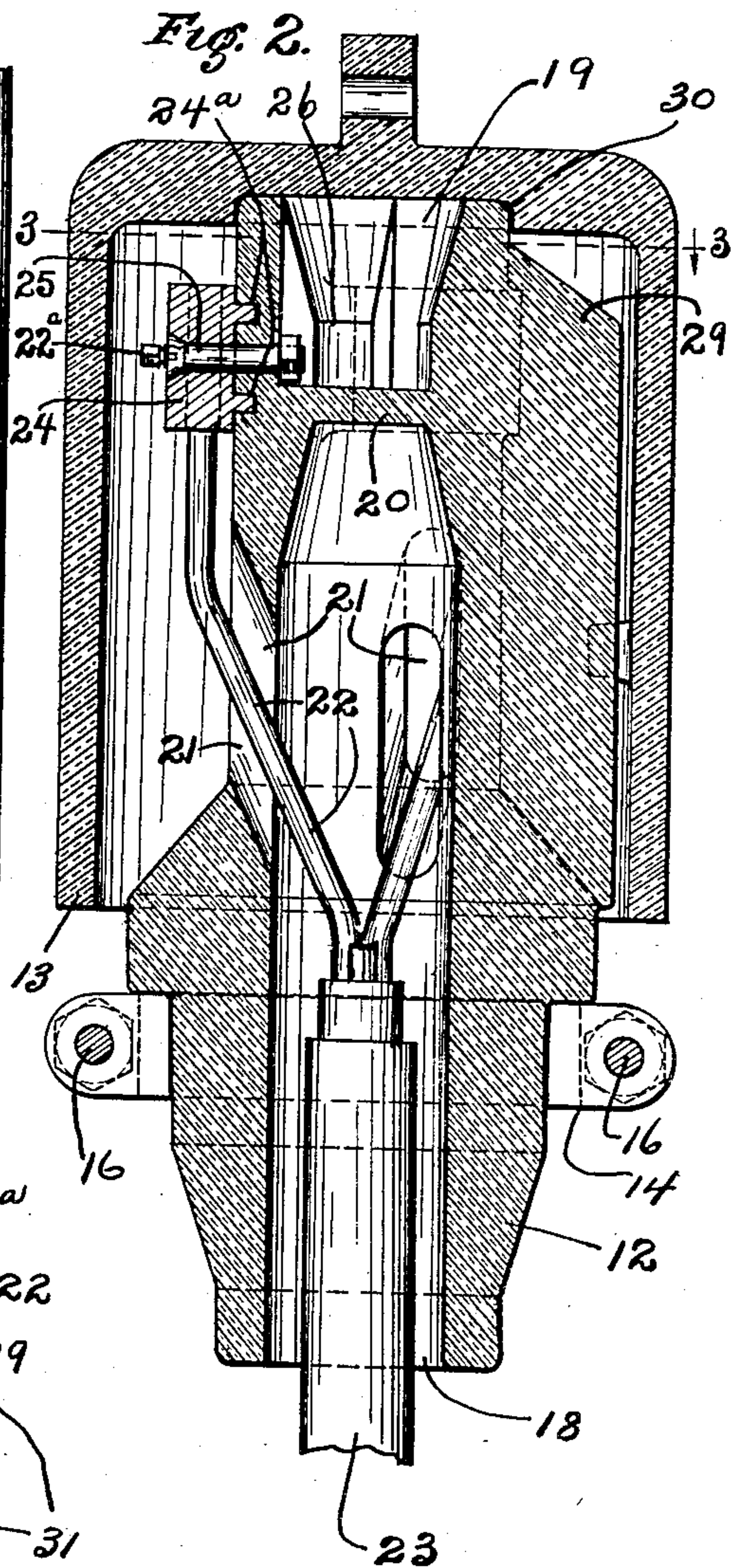
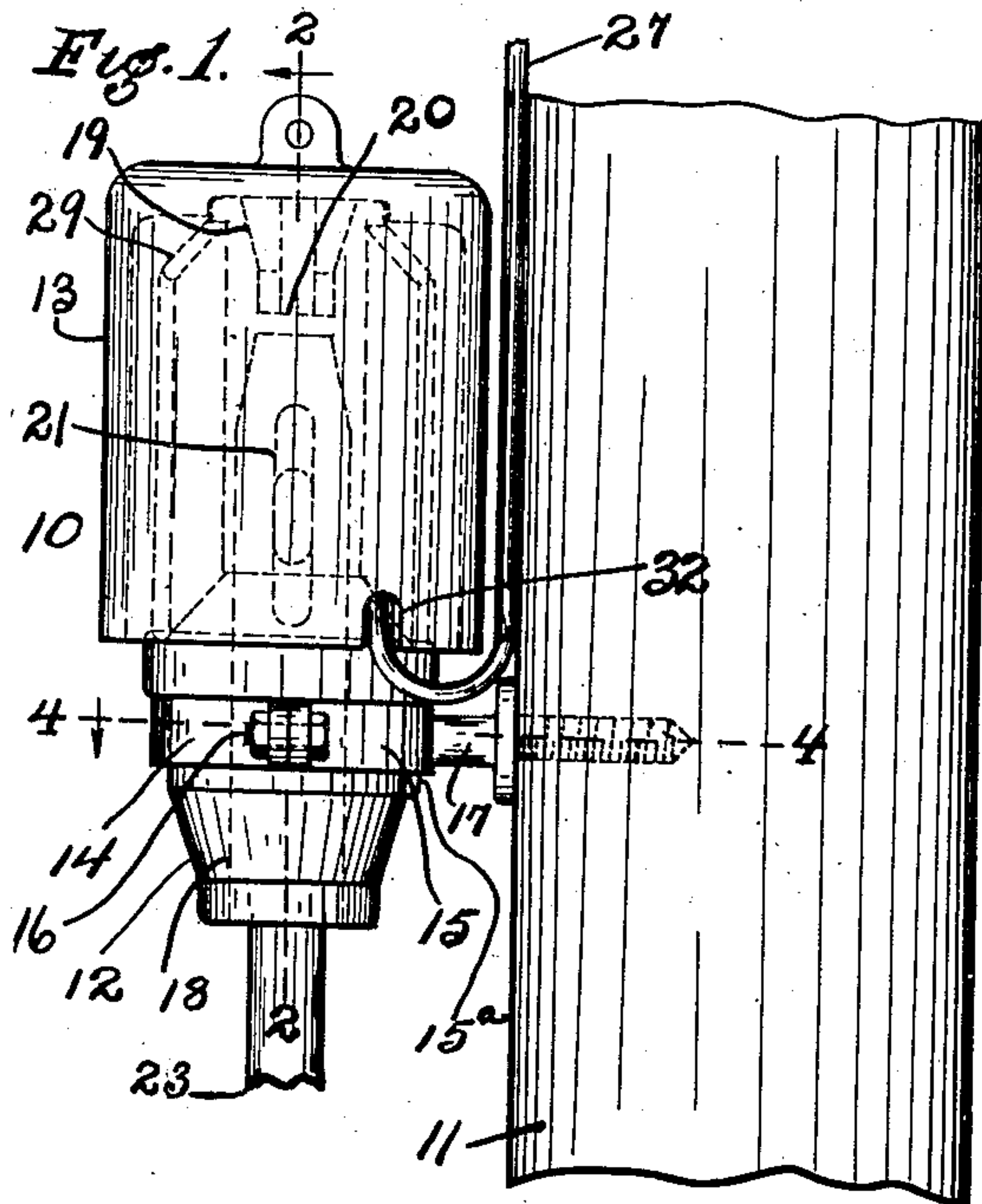


H. L. WALLAU & E. E. NOBLE.  
 TERMINAL CASING.  
 APPLICATION FILED AUG. 23, 1909.

969,816.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



Witnesses:  
 H. J. Gettins.  
 R. C. Brown.

Inventors  
 Herman L. Wallau  
 and Edward E. Noble  
 by Lynch & Quor  
 their Attorneys.

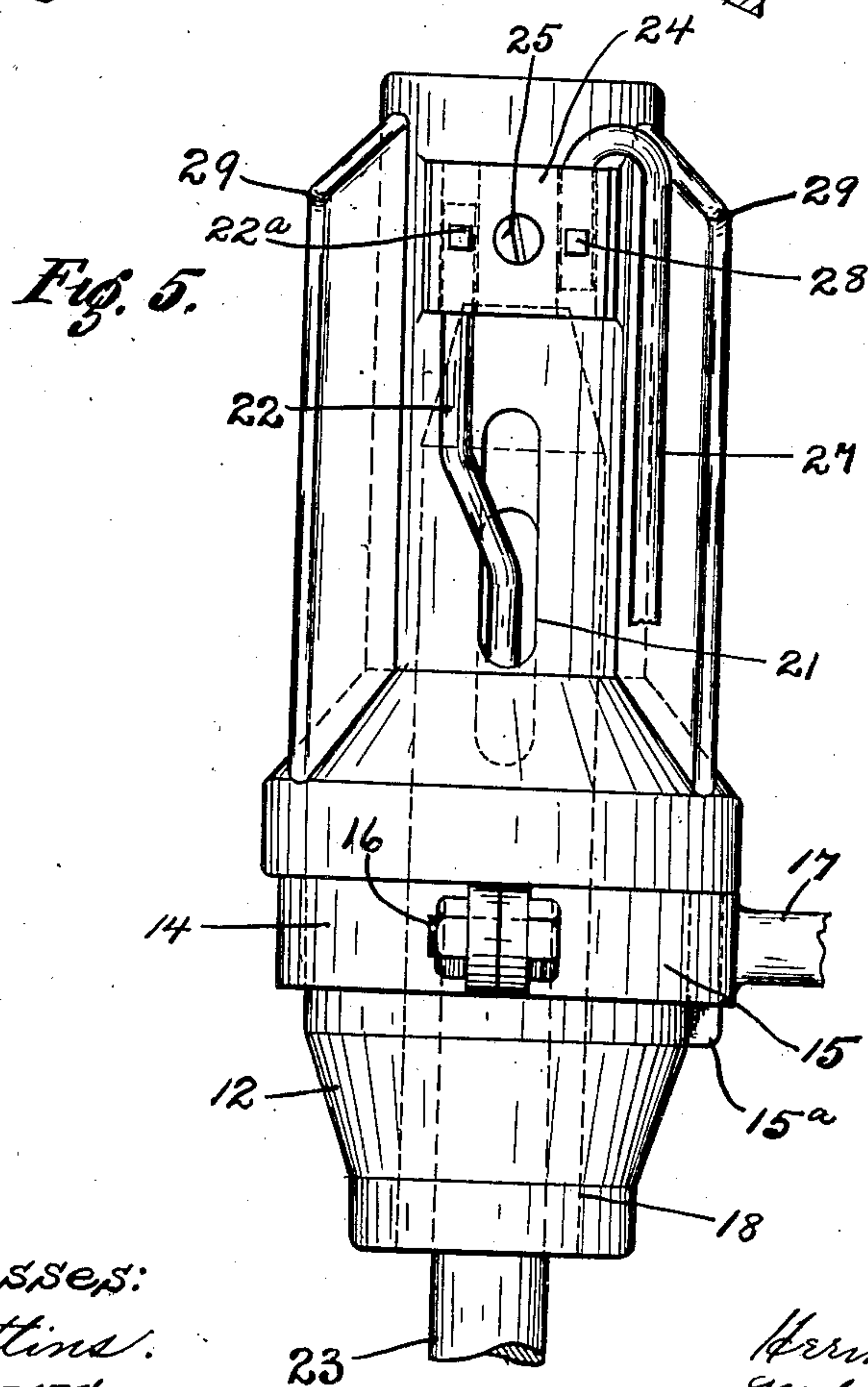
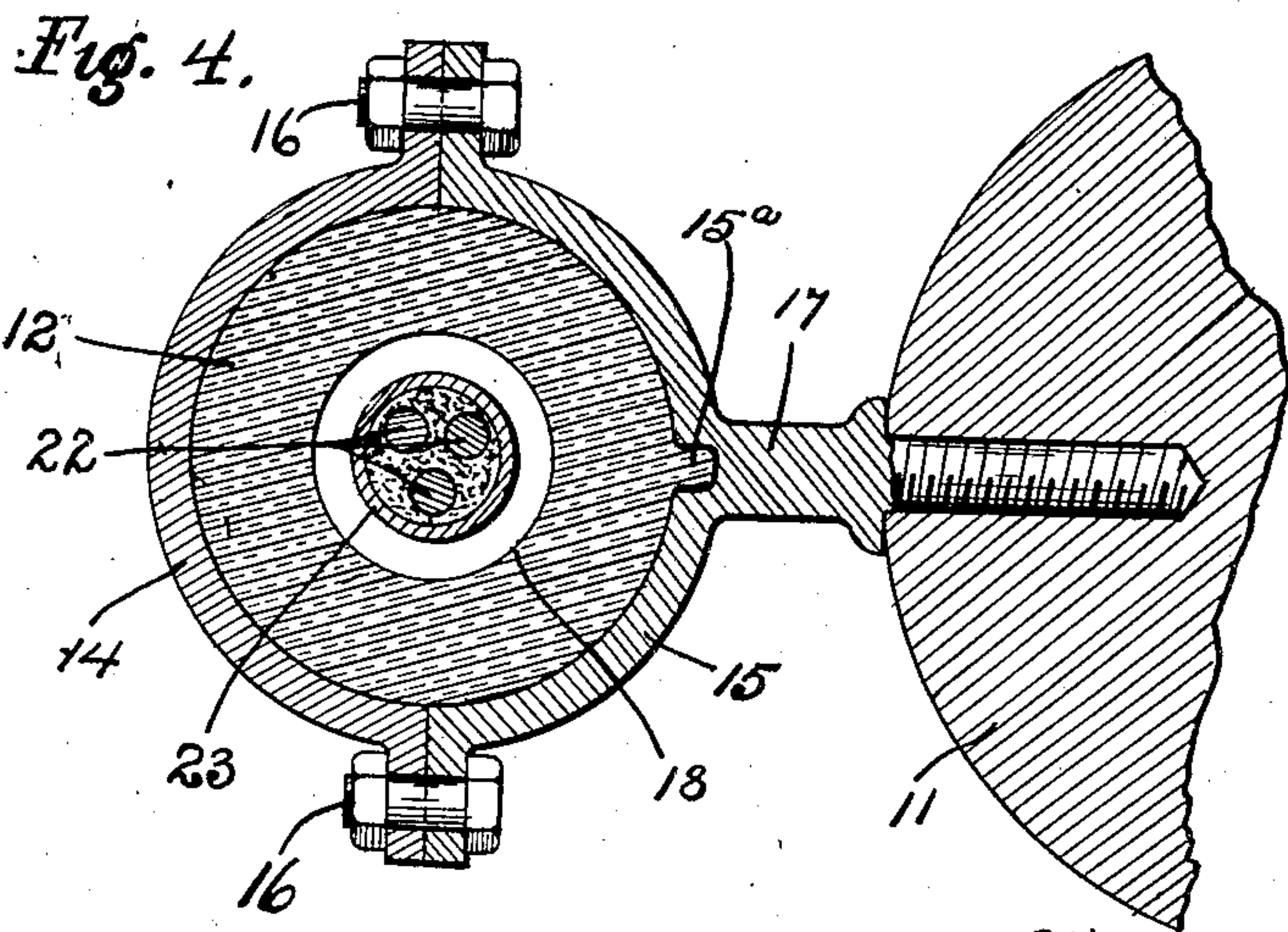


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 their Attorneys.



# UNITED STATES PATENT OFFICE.

HERMAN L. WALLAU AND EDWARD E. NOBLE, OF CLEVELAND, OHIO.

## TERMINAL CASING.

969,816.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed August 23, 1909. Serial No. 514,197.

*To all whom it may concern:*

Be it known that we, HERMAN L. WALLAU and EDWARD E. NOBLE, citizens of the United States of America, and residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Terminal Casings; and we do hereby 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 pertains to make and use the same.

This invention relates to improvements in terminal casings or junction boxes for connections between electric conductors and particularly to terminal casings which are employed for supporting and protecting the connections between the underground and overhead conductors.

The object of the invention is the provision of a terminal casing or junction box which can be easily and cheaply manufactured, which will exclude snow and rain from the connections, and which is so constructed that access can be readily had to the connections and the danger of leakage or of arcs communicating between conductors or terminal blocks is minimized.

In carrying out our invention we provide a terminal casing comprising two main members, namely, an insulating support or body which is designed to be secured to any suitable supporting member such as an upright pole and carries the connections and a bell or cover which is also preferably formed of insulating material and is designed to fit nicely over the insulating supporting body and to protect the conductors and connections. The insulating support has a suitable socket which extends upwardly from the bottom thereof and through which the main or underground conductors are adapted to be brought, and the wall is provided with laterally extending spaced openings through which said conductors extend, and near the top of this insulating supporting member on the exterior thereof are secured terminal blocks having sockets for the ends of the main conductors and also for the ends of overhead and other branch conductors which extend from the terminal blocks downwardly and are brought out from the bell or cover near the lower end thereof. The insulating support is also provided with spaced wings which extend outward from the insulating support and

which divide the space between the bell and the support into separate chambers, one for each terminal block and for the two conductors which may be connected thereto. These wings not only act as insulating partitions between the terminal blocks and live parts and thus serve as barriers for the prevention of communicating arcs, but also serve as centering devices for the bell which is provided with suitably spaced inwardly extending lugs adapted to extend on opposite sides of these outwardly projecting wings.

The invention may be further briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

For an understanding of our invention reference is had to the accompanying drawings in which—

Figure 1 is a side view of our improved terminal casing or junction box secured to an upright pole. Fig. 2 is an enlarged vertical sectional view through the terminal casing. Fig. 3 is a transverse sectional view of the same substantially along the line 3—3, Fig. 2, looking in the direction indicated by the arrow. Fig. 4 is a transverse sectional view of the same substantially along the line 4—4, Fig. 1, looking in the direction indicated by the arrow. Fig. 5 is a view with the bell or cover removed.

Referring now to the figures of the drawings, 10 represents as a whole the terminal casing or junction box which is secured to a vertical pole or post 11 by members to be referred to presently. As was before stated the terminal casing consists of two principal parts, an insulating support or body portion 12 and a bell or cover 13, each of which is made from some suitable insulating material preferably porcelain. The terminal casing is secured to the pole 11 by means of a clamp consisting in this case of two semi-circular straps 14 and 15 which encircle the lower portion of the insulating support 12 which at this point is cylindrical and is reduced in size, the end of these straps having outwardly extending ears which are secured together by screws 16, and the strap 15 having a laterally projecting stud or shank 17 which is threaded and is secured into the pole. To prevent the insulating supporting member from turning in the straps, the former is provided on its periphery with a



lug or rib 15<sup>a</sup> (see Fig. 4) which extends or fits into a suitable depression of corresponding shape in the strap 15.

The supporting member 12 is hollow for the greater portion of its length being provided with a cylindrical socket 18 which extends upwardly from the lower end nearly to the top of this member, and through which is adapted to be brought the upper ends of the underground conductors, and it is provided further at its upper end with a downwardly extending socket 19, the two sockets 18 and 19 being separated by a partition or wall 20. The side wall of the supporting member 12 is provided with a number of circumferentially spaced upwardly inclined openings 21 extending outwardly from the socket 18 near the upper end thereof, there being in this case three of these openings 21 spaced one hundred and twenty degrees apart, although the number of the openings may be varied to suit requirements. As was before stated, the underground conductors are designed to be brought upwardly through the lower socket 18 and these conductors, which, are shown at 22, are inclosed in a lead or suitable casing 23 which extends upwardly for a suitable distance into the socket 18. A short distance below the openings 21 the conductors 22 are divided and each extends outwardly through one of the openings 21 and at its upper end is secured in a socket of a terminal block 24 by means of a set screw 22<sup>a</sup>. The terminal blocks, the number of which depends, of course, on the number of connections and conductors which the terminal casing is to accommodate, are secured to the exterior of the supporting member 12 near the upper end thereof by means of bolts 25 which extend through the wall and have their inner ends in the upper socket 19. The blocks 24 are held from movement about the screws by dowel pins or other projections 24<sup>a</sup> which extend in suitable openings in the member 12. These terminal blocks are arranged above the corresponding openings 21 through which the conductors extend and are therefore equally spaced. The inner ends of the bolts 25 together with the nuts on the ends are located in recesses as shown and are separated by outwardly projecting portions 26 in the socket 19 which prevent the nuts from turning in the sockets. After the terminal blocks have been secured in place, this socket 19 is preferably filled with suitable insulating material which, for the sake of clearness, is not shown in the drawings.

The overhead conductors to which the underground conductors 22 are designed to be connected, are shown at 27, the end of each of these conductors being secured by a set screw 28 in a suitable socket in one of the terminal blocks and from the terminal

blocks extending downwardly as will be explained.

Extending radially outward from the insulating supporting member 12 between the openings 21 and between the terminal blocks 24 are a number of wings 29 which are in this case three in number and are spaced one hundred and twenty degrees apart. The purpose of these wings will be explained presently.

The insulating bell or cover 12, which, as stated before is preferably formed of porcelain, is substantially cylindrical in shape and extends down over the insulating supporting member 12 a suitable distance so as to exclude rain and snow from the connections. This bell or cover is provided at its upper end, which is closed, and on the interior, with a socket 30 which receives the upper end of the insulating supporting member 12. The bell or cover is provided also on the interior with equally spaced pairs of inwardly extending lugs 31, the lugs of each pair being on opposite sides of one of the outwardly extending wings 29 so as to properly locate or center the bell or cover. At the lower edge of the bell are three U-shaped slots 32 and through these slots the conductors 27 are brought out from the interior of the bell, as shown most clearly in Fig. 1. It will be seen that these wings 29 on the insulating supporting member 12 divide the interior space between the member 12 and the bell into three chambers, each of which contains one of the terminal blocks 24, the end of one of the underground conductors 22 and the end of the one of the overhead conductors 27, and that these wings, therefore, act as barriers to prevent arcs communicating between the terminal blocks or conductors. Furthermore the construction and arrangement are such that not only is moisture effectively excluded from the connections, but the bell may be readily lifted from its normal position in case it is desired to inspect, repair or change any of the connections. Furthermore the parts can be cheaply manufactured inasmuch as both the insulating supporting member 12 and the bell can be molded from porcelain or any other desired insulating material, and can be assembled without any machining or altering being necessary. Also the conductors can be connected or disconnected very quickly.

What we claim is,—

1. An insulating support for electric conductors and connections comprising an insulating body having a socket extending upwardly from the lower end thereof and having a plurality of openings spaced around the body portion and extending outwardly from the socket through the wall of said body portion, a terminal block secured to the body portion above each opening and an im-



perforate wing extending outwardly from the body portion between each pair of openings.

2. An insulating support for electric conductors and connections comprising an elongated body of insulating material having a socket extending downwardly into the upper end thereof and having a socket extending upwardly from the lower end thereof and separated from the first-mentioned socket, and having spaced openings extending through the wall of the body portion from the upwardly extending socket and a plurality of spaced wings located between said openings, for the purpose set forth.

3. An insulating support for electric conductors comprising a body of insulating material having a chamber or socket extending upwardly from the lower end thereof, and having a plurality of openings extending outwardly from said socket through the wall of said body, and having a socket in the upper end of the body separated from the first-named socket, a plurality of terminal blocks at the upper end of said body, means securing said terminal blocks to the body comprising bolts or screws having their inner ends located in said upper socket, and spaced wings on said body, one of the openings and one of the terminal blocks being between adjacent wings.

4. In combination, an insulating support comprising an elongated body of insulating material, said body having a socket extending upwardly from the lower end thereof, and having a plurality of spaced upwardly inclined openings extending from said socket outwardly through the side wall of said body, and having a socket extending downwardly from the upper end of said body, a plurality of terminal blocks near the upper end of said body, screws or bolts securing said terminal blocks in position and having their inner ends located in said socket, there being one terminal block for each opening and located above the same, a plurality of wings extending outwardly from said body and separating the terminal blocks from one another, and underground conductors and overhead conductors secured to said terminal blocks, the underground conductors extending upwardly into the lower socket and through said openings.

5. A terminal casing or junction box comprising a body of insulating material, means for supporting the same, said body having an elongated socket extending upwardly from the lower end thereof and closed at its upper end and having a plurality of upwardly inclined openings extending from said socket outwardly through the side wall of the body, a terminal block secured on the side wall of the body above each opening, underground conductors extending upwardly into said socket and out through the

different openings and secured to said terminal blocks and overhead conductors secured to said terminal blocks and extending downwardly over the side walls of said body.

6. A terminal casing or junction box comprising a body of insulating material, means for supporting the same, said body having an elongated socket extending upwardly from the lower end thereof and closed at its upper end and having a plurality of upwardly inclined openings extending from said socket outwardly through the side wall of the body, a terminal block secured on the side wall of the body above each opening, underground conductors extending upwardly into the said socket and out through the different openings and secured to said terminal blocks and overhead conductors secured to said terminal blocks and extending downwardly over the side walls of said body, and a cover of insulating material extending over said body and supported thereby, and provided near its lower end with openings for the passage of said overhead conductors.

7. A terminal casing or junction box comprising a body of insulating material, means for supporting the same, said body having a plurality of spaced wings and having a socket extending upwardly from the lower end thereof and having openings extending outwardly from said socket through the side wall of the body, said openings being located between said wings, a plurality of terminal blocks secured to said body near the upper end thereof, each terminal block being located above one of the openings and between adjacent wings, conductors extending upwardly into said socket, out through the different openings and having their upper ends secured in said terminal blocks, a cover of insulating material extending over said body and supported thereby, and other conductors secured to said terminal blocks and extending downwardly between the wings and out from said cover at the lower end thereof.

8. A terminal casing or junction box comprising an elongated supporting body of insulating material, means for supporting the same, said body having a plurality of spaced wings, and having a socket extending upwardly from the lower end of said body, and having a plurality of openings extending from said socket outwardly through the side wall of the body between the wings and said body having also a socket extending downwardly from the upper end thereof and separated from the lower socket, a plurality of terminal blocks at the upper end of said body, means securing said terminal blocks thereto comprising bolts or screws having their inner ends located in said upper socket, a plurality of conductors extending up-



wardly into said socket and out through the different openings, the upper ends of said conductors being secured to said terminal blocks, a cover or bell of insulating material extending over said body and supported thereby, conductors having their ends secured also to said terminal blocks and extending downwardly between the wings and out from said cover at the lower end thereof.

9. A terminal casing or junction box comprising an elongated body of insulating material having spaced wings and being provided with a socket extending upwardly from the lower end thereof, and having openings extending outwardly from said socket through the side wall of the body, terminal blocks secured to said body near the upper end thereof and located between the wings, conductors extending upwardly into said socket and out through the different openings and having their ends connected to said terminal blocks, conductors connected to said terminal blocks and extending downwardly between the wings, a bell or cover of insulating material extending over and supported by said body, said bell having on the interior inwardly extending lugs between which said wings extend so that the latter center said bell or cover.

10. A terminal casing or junction box comprising an elongated body of insulating material, means for supporting the same comprising a clamp extending about said body near its lower end, said body having a plurality of wings, and having a socket extending upwardly from the lower end thereof, and having openings extending outwardly from said socket through the side wall of the body between the wings, and having a socket or chamber extending downwardly from the top thereof, a partition separating said sockets, terminal blocks at the upper end of said body, means securing the same in position comprising screws or bolts extending through the terminal blocks and through the wall of the body into said upper socket, conductors extending upwardly from the lower end of said socket and being divided or separated and brought out through the different openings and connected at their ends to said terminal blocks, conductors having their ends secured to said terminal blocks and extending downwardly between said wings, and a bell or cover of insulating material having at its upper end on the interior a socket which receives the upper end of the body and being provided on the interior with inwardly extending pairs of lugs which cooperate with and extend on opposite sides of said wings whereby said wings act as barriers between the terminal blocks and conductors and center said bell or cover.

11. An insulating support for electric conductors and connections comprising an elongated

body of insulating material having a socket extending downwardly into the upper end thereof and having a socket extending upwardly from the lower end thereof and separated from the first-mentioned socket, and having circumferentially spaced openings extending through the wall of the body portion from the upwardly extending socket and a plurality of circumferentially spaced wings located between said openings, for the purpose set forth.

12. An insulating support for electric conductors comprising a body of insulating material having a chamber or socket extending upwardly from the lower end thereof, and having a plurality of openings extending outwardly from said socket through the wall of said body, and having a socket in the upper end of the body separated from the first-named socket, a plurality of terminal blocks at the upper end of said body, means securing said terminal blocks to the body comprising bolts or screws having their inner ends located in said upper socket, and circumferentially spaced radially disposed wings on said body, one of the openings and one of the terminal blocks being between adjacent wings.

13. In combination, an insulating support comprising an elongated body of insulating material, said body having a socket extending upwardly from the lower end thereof, and having a plurality of circumferentially spaced upwardly inclined openings extending from said socket outwardly through the side wall of the body, and having a socket extending downwardly from the upper end of said body, a plurality of terminal blocks near the upper end of said body, screws or bolts securing said terminal blocks in position and having their inner ends located in said socket, there being one terminal block for each opening and located above the same, a plurality of radially disposed wings extending outwardly from said body and separating the terminal blocks from one another, and underground and overhead conductors secured to said terminal blocks, the underground conductors extending upwardly into the lower socket and through said openings.

14. A terminal casing or junction box comprising a body of insulating material, means for supporting the same, said body having a plurality of circumferentially spaced radially disposed wings and having a socket extending upwardly from the lower end thereof and having openings extending outwardly from said socket through the side wall of the body, said openings being located between said wings, a plurality of terminal blocks secured to said body near the upper end thereof, each terminal block being located above one of the openings and between adjacent wings, conductors extend-



ing upwardly into said socket, out through the different openings and having their upper ends secured in said terminal blocks, a cover of insulating material extending over said body and supported thereby, and other conductors secured to said terminal blocks and extending downwardly between the wings and out from said cover at the lower end thereof.

15. A terminal casing or junction box comprising an elongated supporting body of insulating material, means for supporting the same, said body having a plurality of circumferentially spaced radially disposed wings, and having a socket extending upwardly from the lower end of said body, and having a plurality of openings extending from said socket outwardly through the side wall of the body between the wings and said body also having a socket extending downwardly from the upper end thereof and separated from the lower socket, a plurality of terminal blocks at the upper end of said body, means securing said terminal blocks thereto comprising bolts or screws having their inner ends located in said upper socket, a plurality of conductors extending upwardly into said socket and out through the different openings, the upper ends of said conductors being secured to said terminal blocks, a cover or bell of insulating material extending over said body and supported thereby, conductors having their ends secured also to said terminal blocks and extending downwardly between the wings and out from said cover at the lower end thereof.

16. A terminal casing or junction box comprising an elongated body of insulating material having circumferentially spaced radially disposed wings and being provided with a socket extending upwardly from the lower end thereof, and having openings extending outwardly from said socket through the side wall of the body, terminal blocks secured to said body near the upper end thereof and located between the wings, conductors extending upwardly into said socket and out through the different openings and having their ends connected to said terminal blocks and extending downwardly between

the wings, and a bell or cover of insulating material extending over and supported by said body, said bell having on the interior inwardly extending lugs between which said wings extend so that the latter center said bell or cover.

17. A terminal casing or junction box comprising an elongated body of insulating material, means for supporting the same comprising a clamp extending about said body near its lower end, said body having a plurality of circumferentially spaced radially disposed wings, and having a socket extending upwardly from the lower end thereof, and having openings extending outwardly from said socket through the side wall of the body between the wings, and having a socket or chamber extending downwardly from the top thereof, a partition separating said sockets, terminal blocks at the upper end of said body, means securing the same in position comprising screws or bolts extending through the terminal blocks and through the wall of the body into said upper socket, conductors extending upwardly from the lower end of said socket and being divided or separated and brought out through the different openings and connected at their ends to said terminal blocks, conductors having their ends secured to said terminal blocks and extending downwardly between said wings, and a bell or cover of insulating material having at its upper end on the interior a socket which receives the upper end of the body and being provided on the interior with inwardly extending pairs of lugs which cooperate with and extend on opposite sides of said wings whereby said wings act as barriers between the terminal blocks and conductors and center said bell or cover.

In testimony whereof, we sign the foregoing specification, in the presence of two witnesses.

HERMAN L. WALLAU.  
EDWARD E. NOBLE.

Witnesses:

VICTOR C. LYNCH,  
N. L. McDONNELL.