

W. G. CLARK.
FASTENING DEVICE FOR INSULATORS.

APPLICATION FILED JULY 27, 1906. RENEWED MAY 13, 1910.

966,311

Patented Aug. 2, 1910.

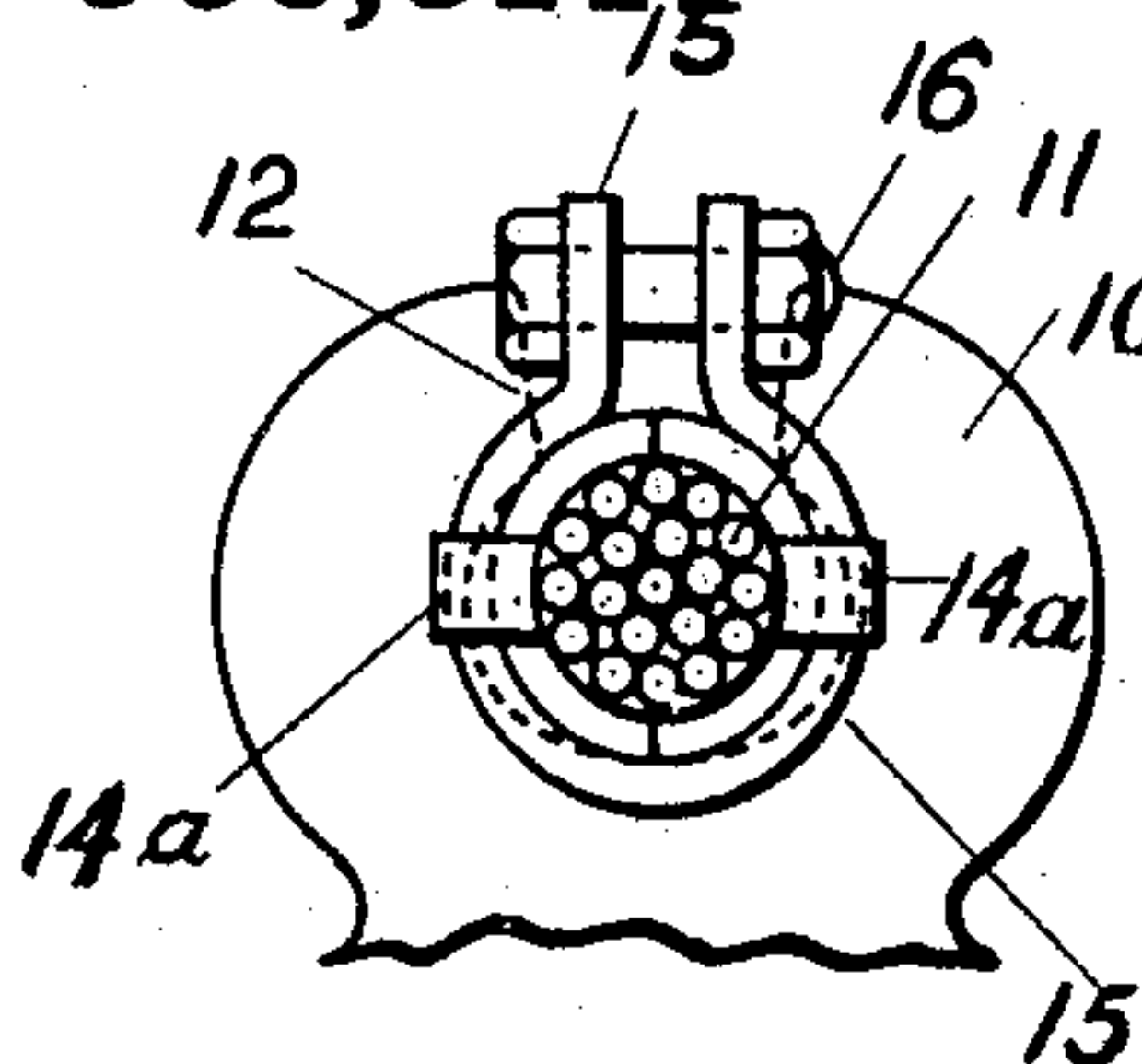


FIG. 1.

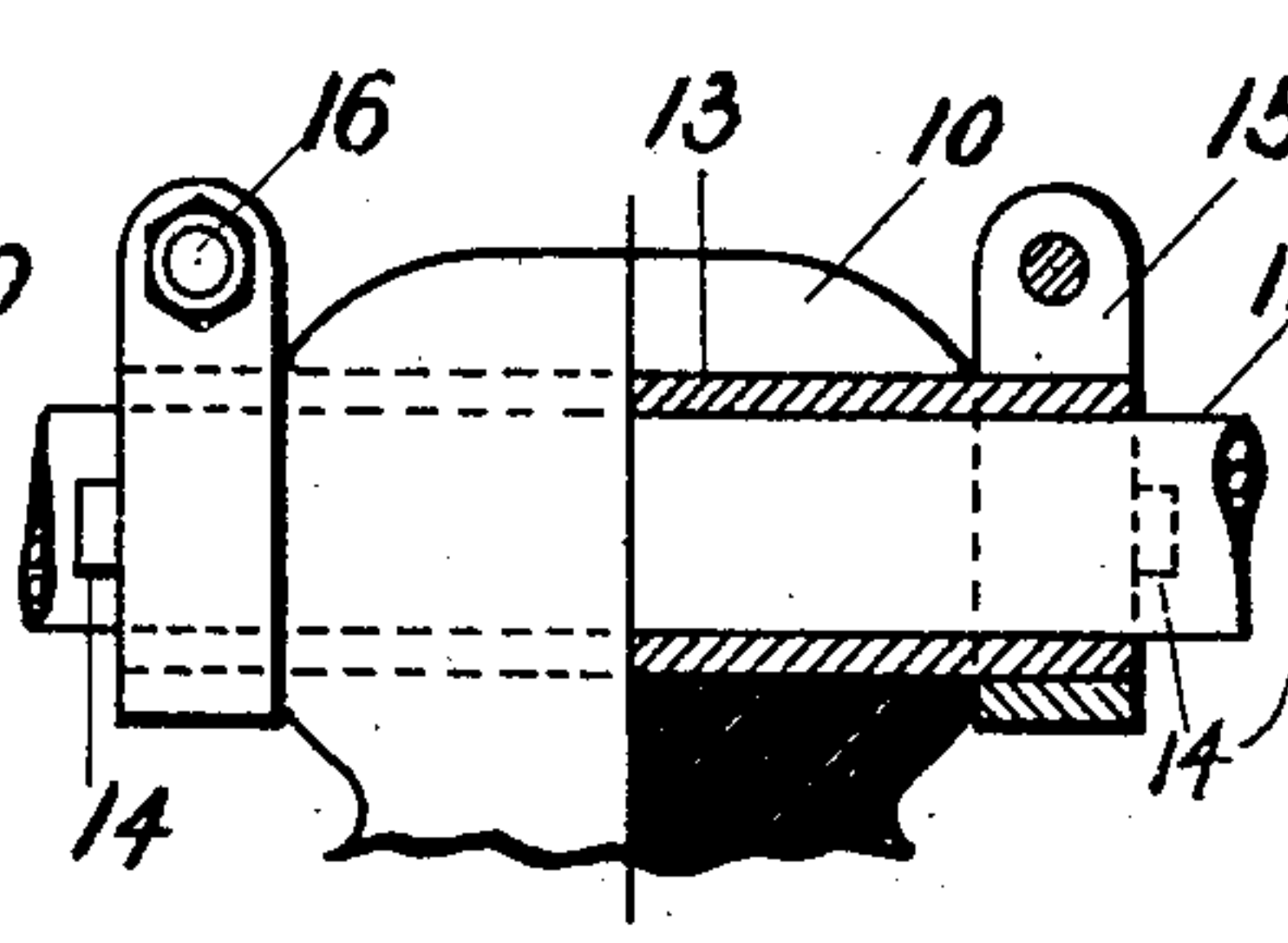


FIG. 2.

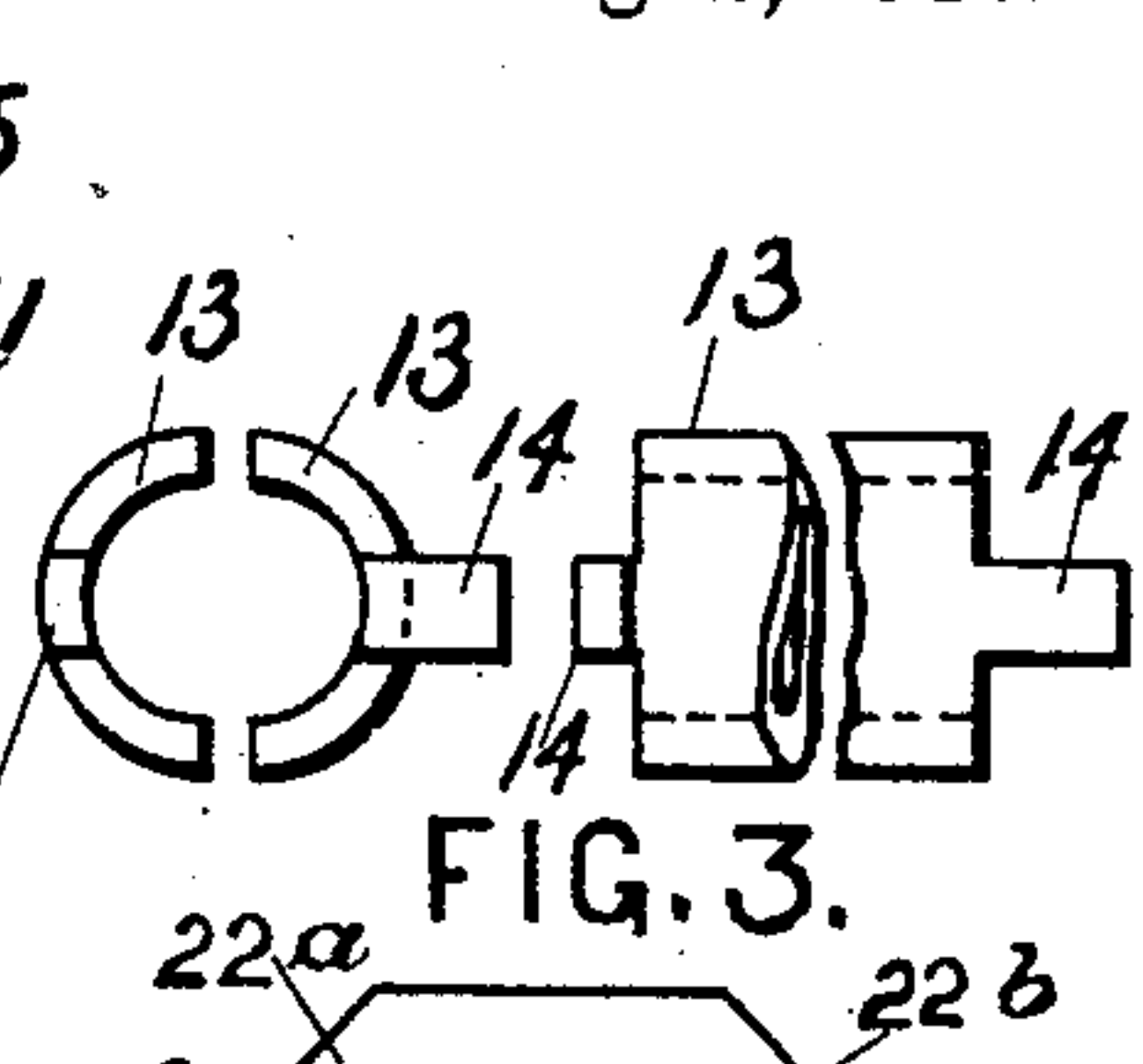


FIG. 3.

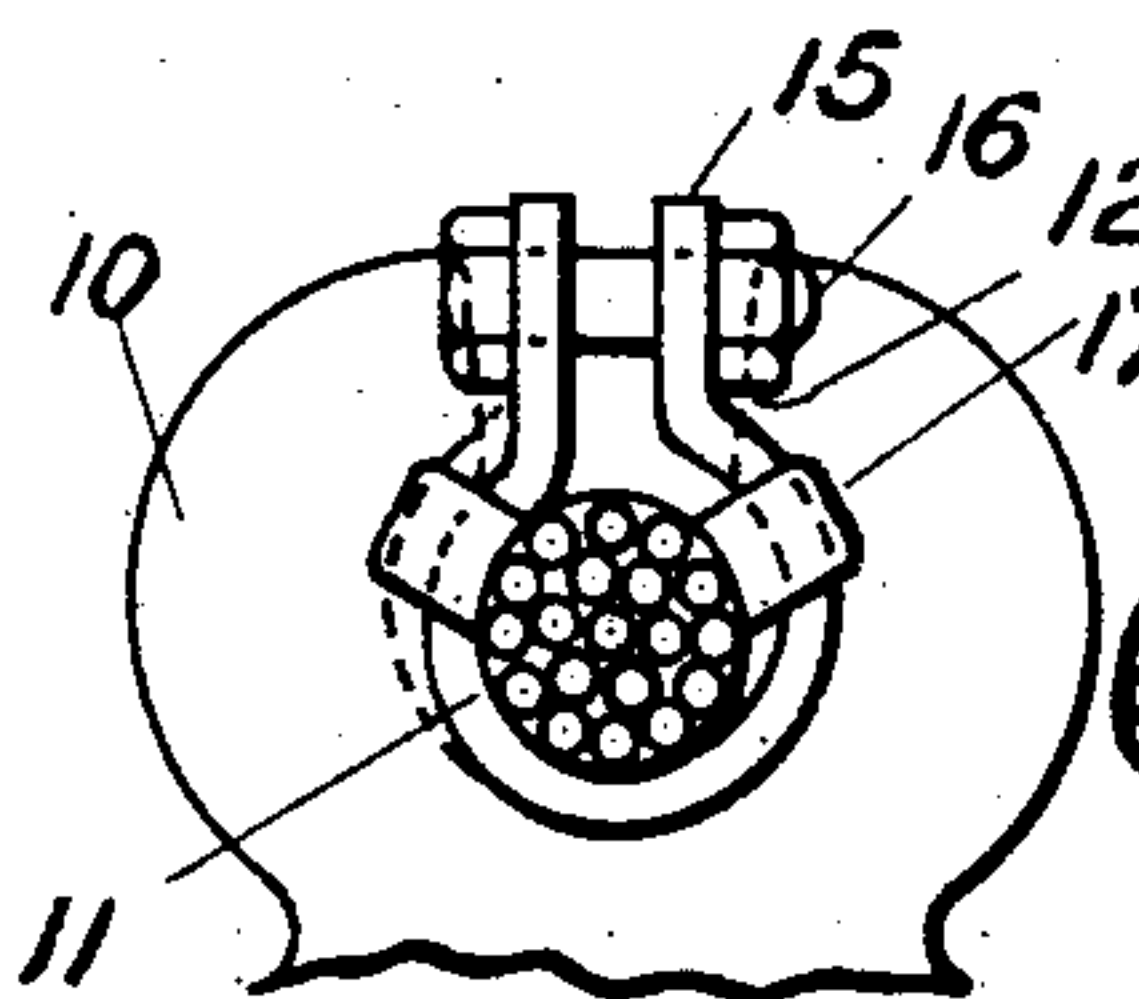


FIG. 4.

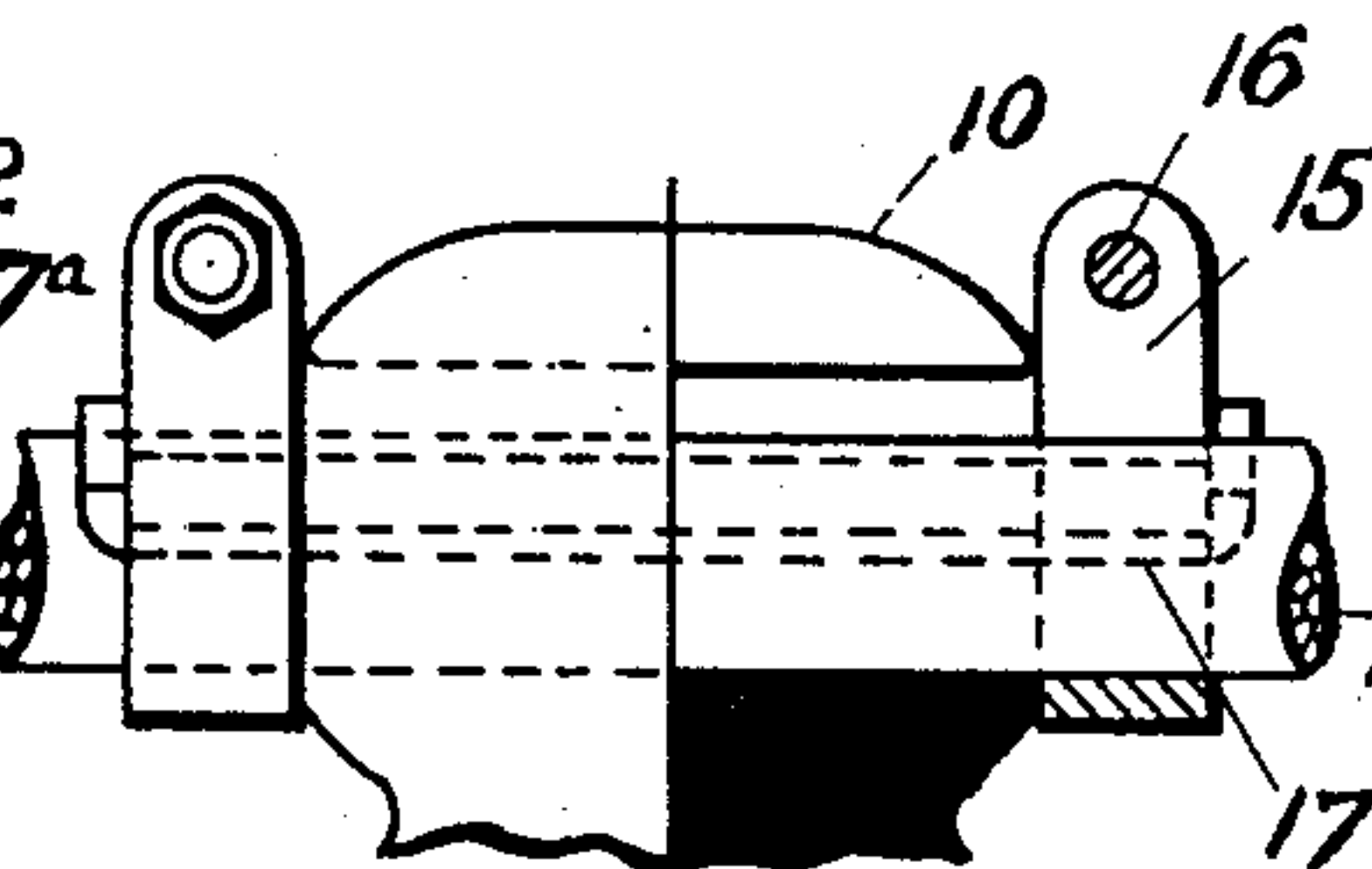


FIG. 5.

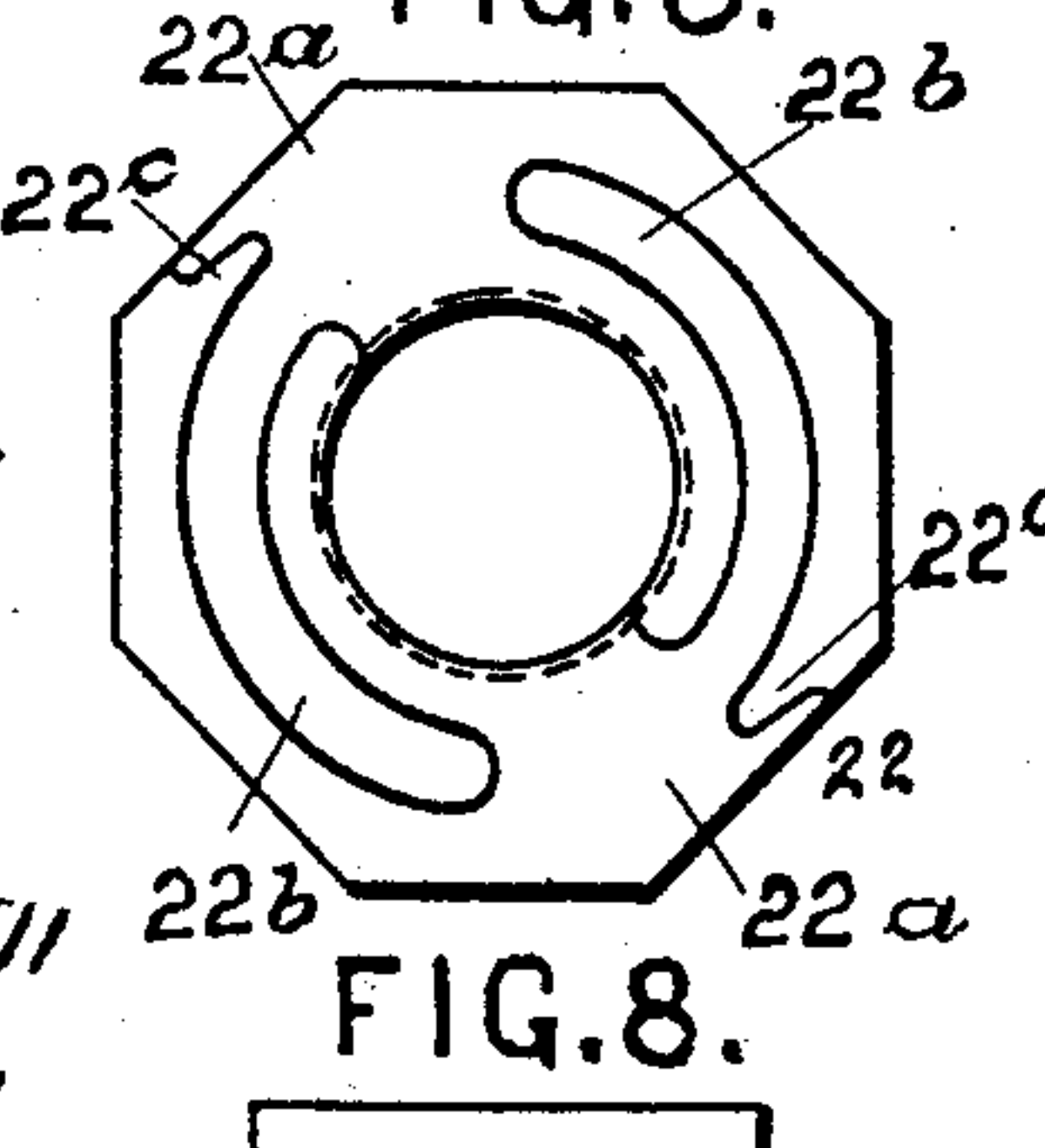


FIG. 8.

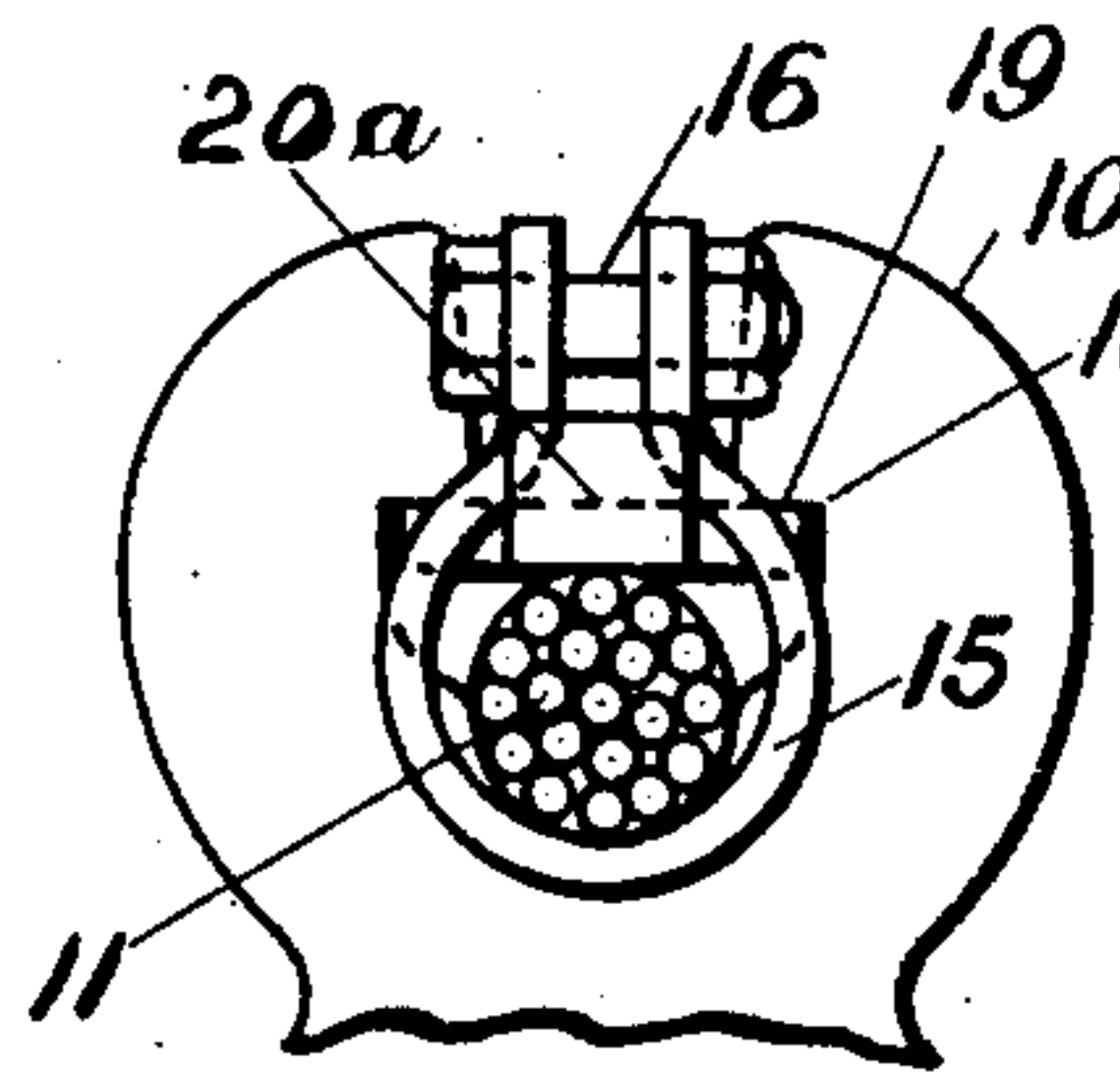


FIG. 6.

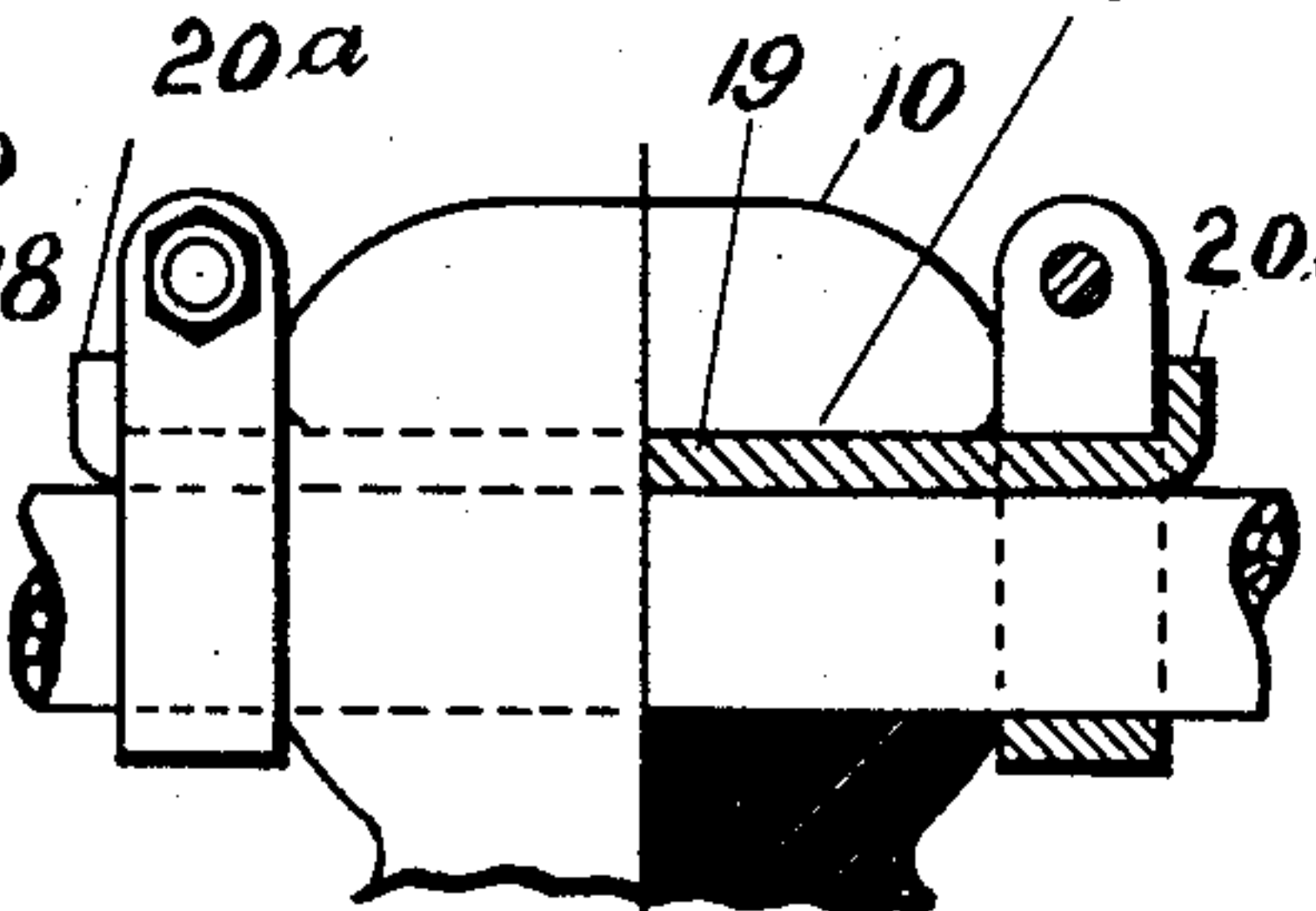


FIG. 7.

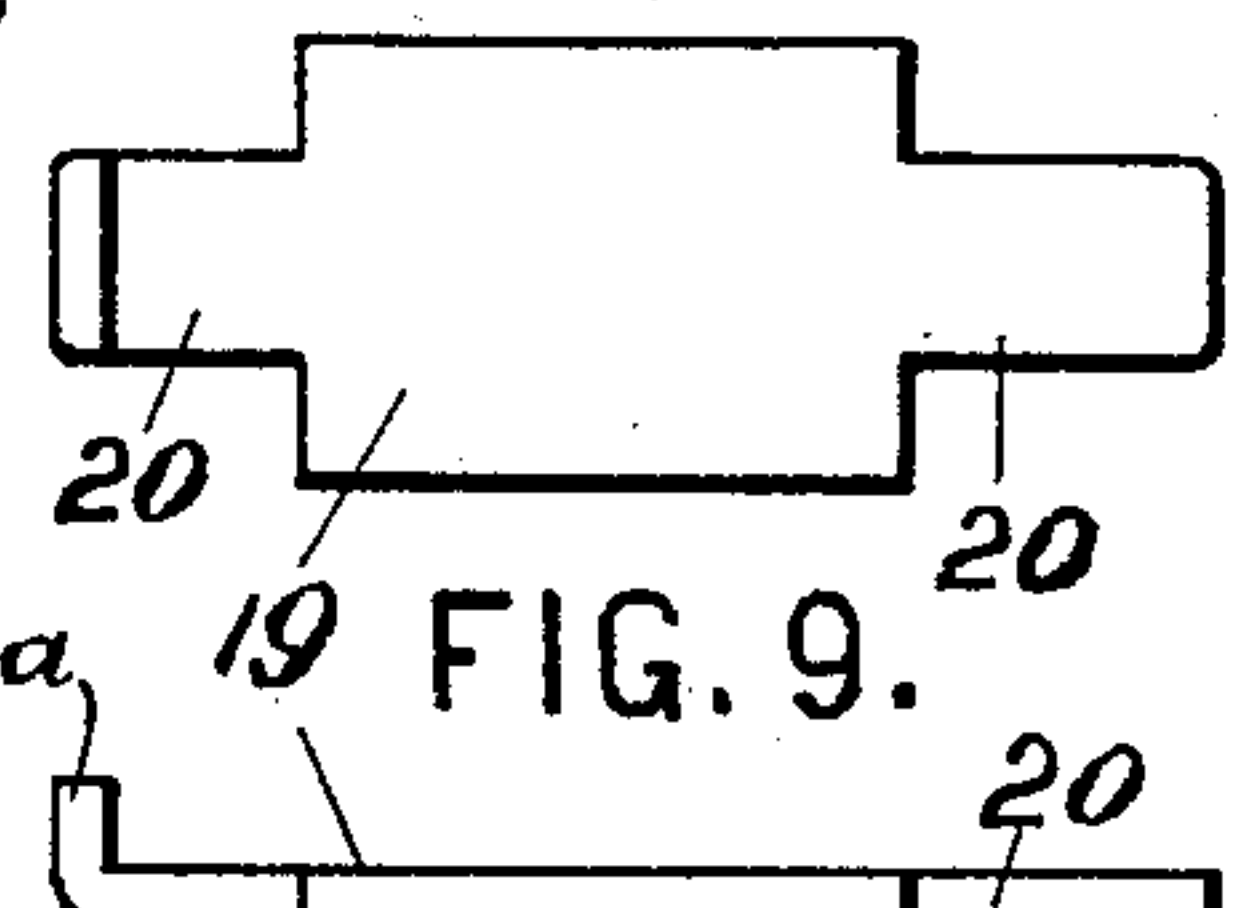


FIG. 9.

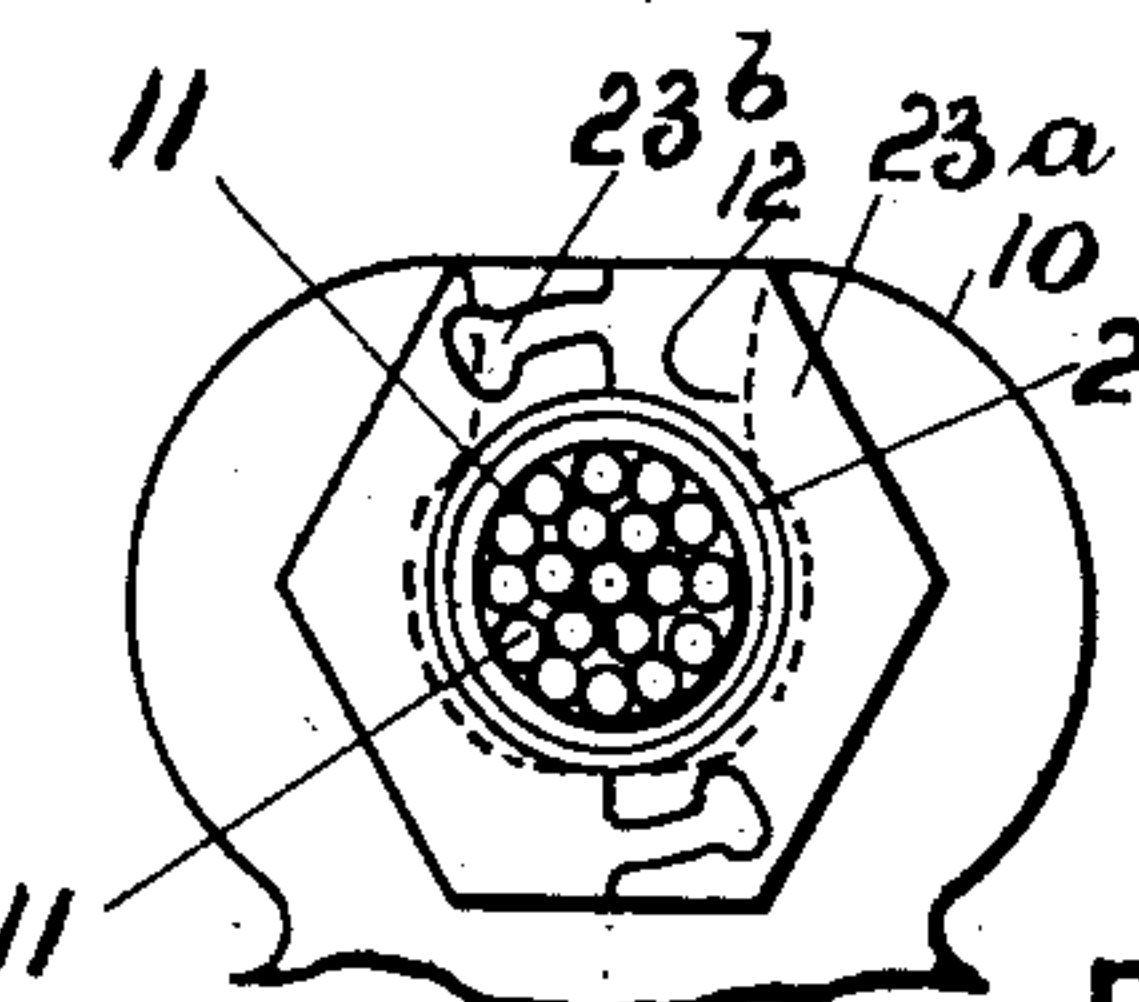


FIG. 11.

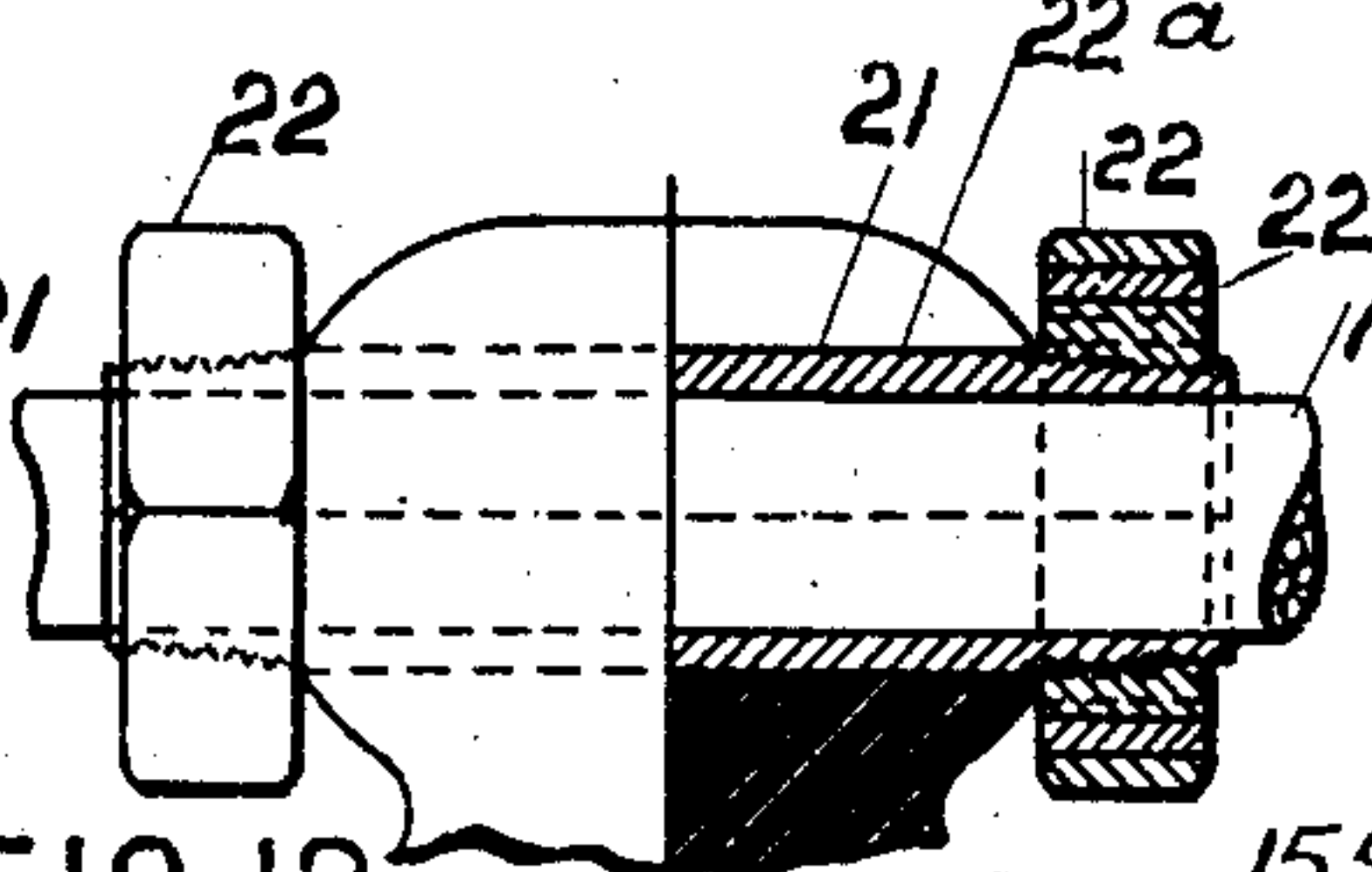


FIG. 12.

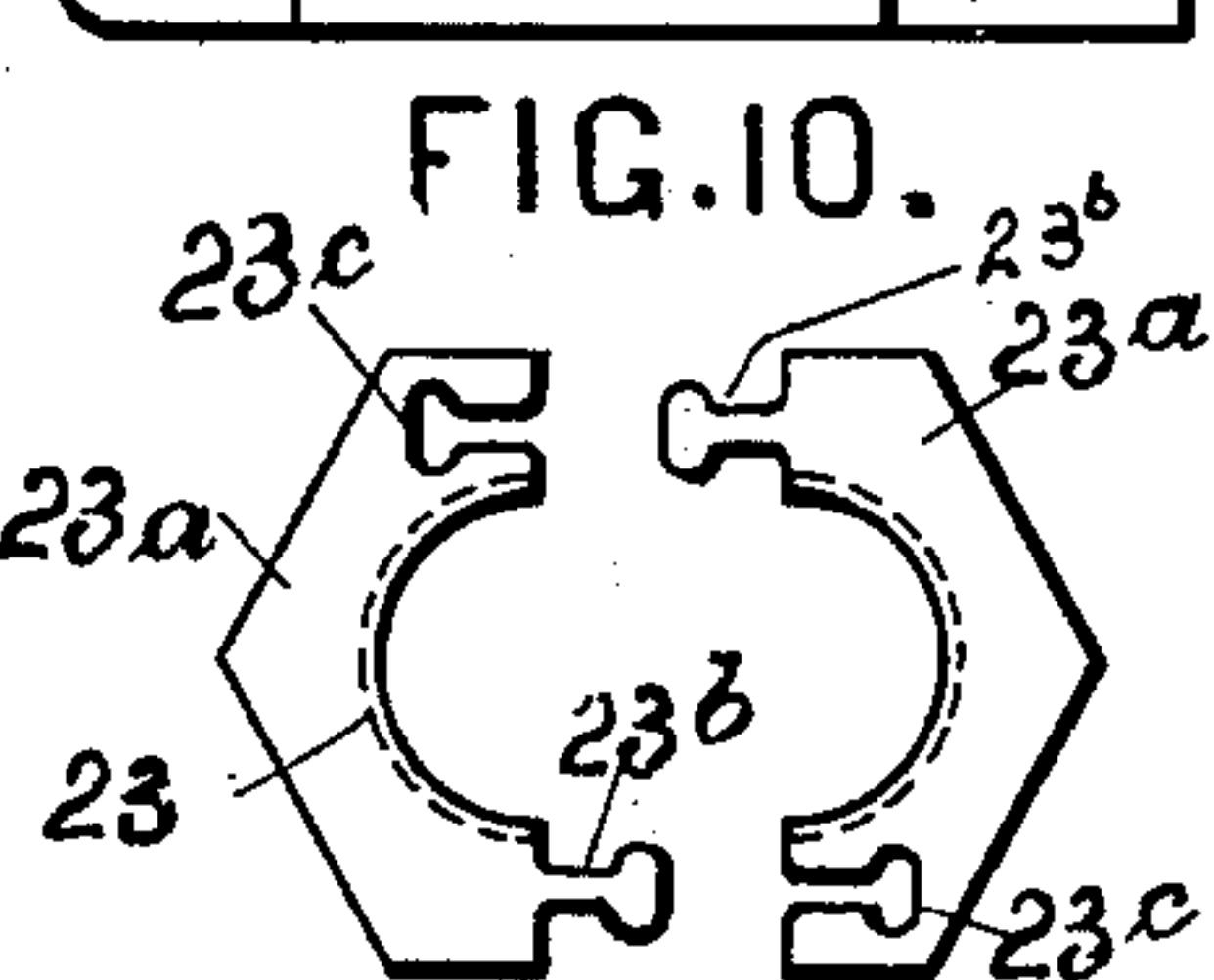


FIG. 13.

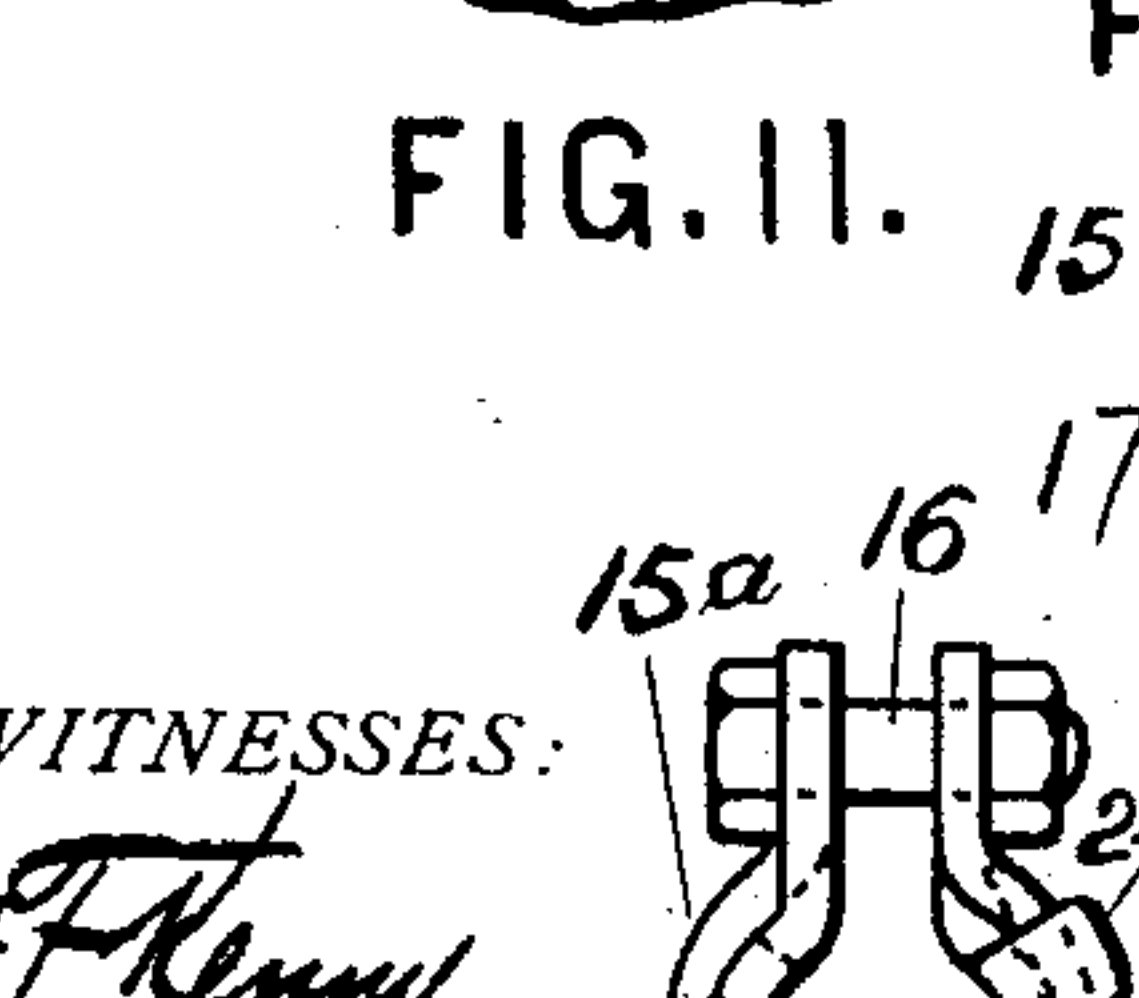


FIG. 17.

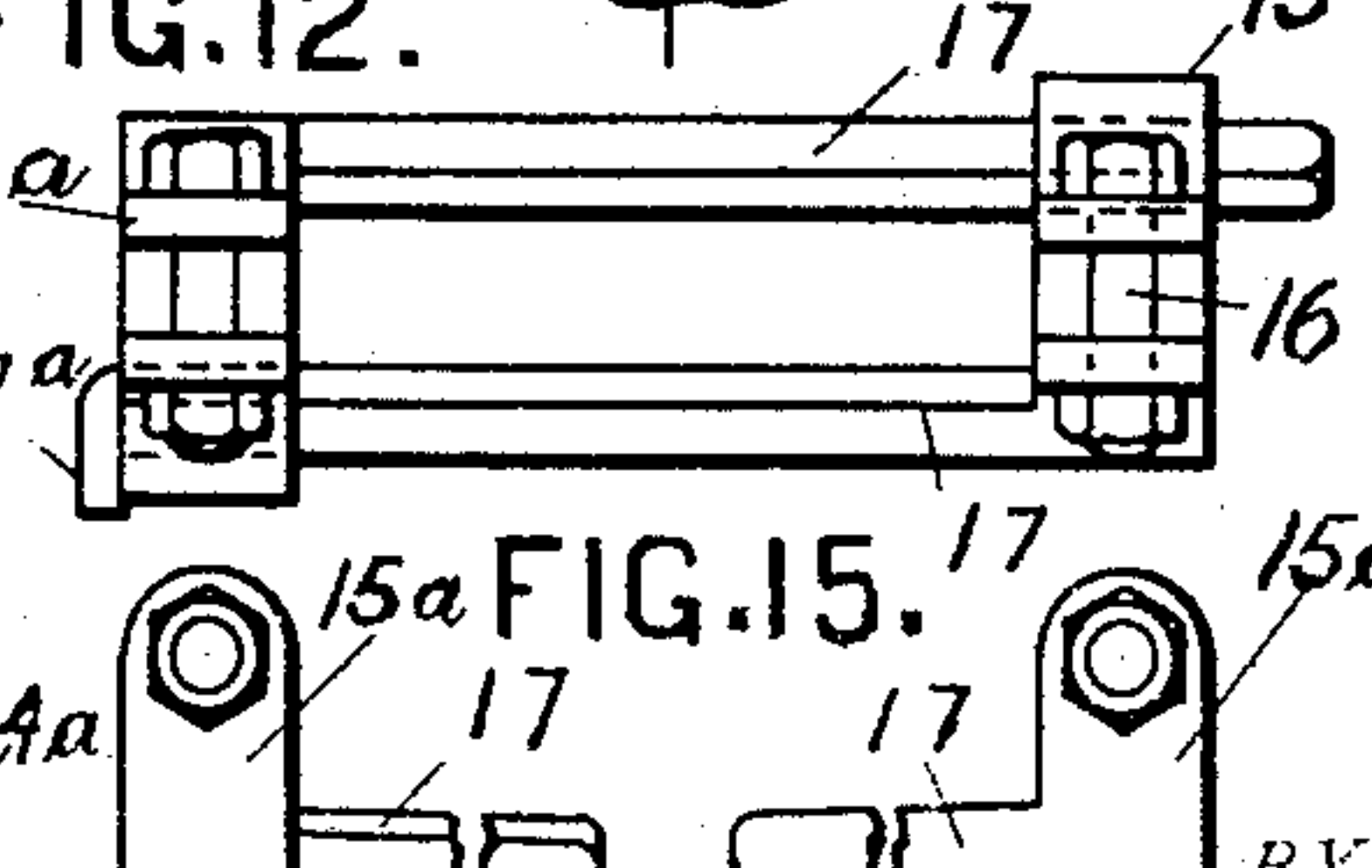


FIG. 15.

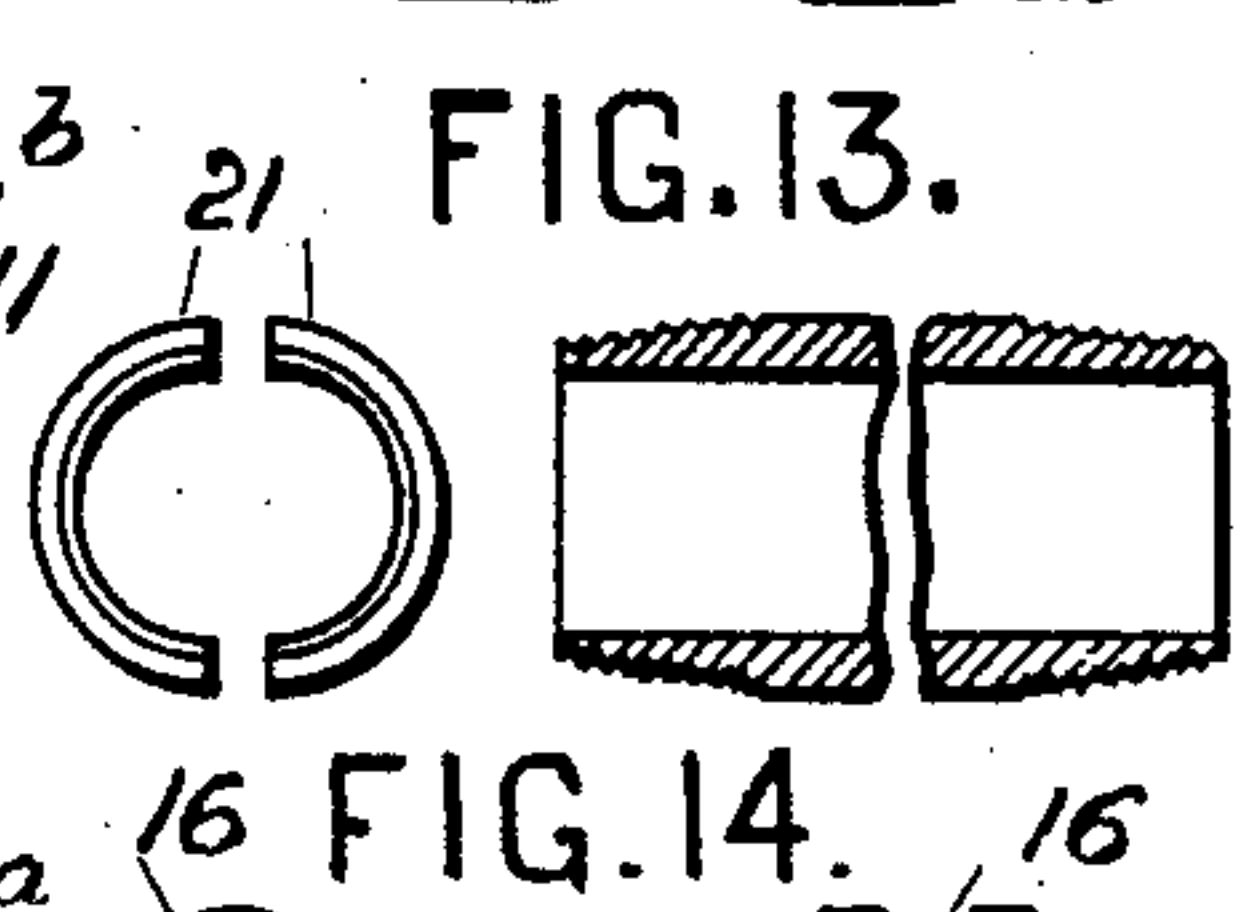


FIG. 14.

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UNITED STATES PATENT OFFICE.

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FASTENING DEVICE FOR INSULATORS.

966,311.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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To all whom it may concern:

Be it known that I, WALTER G. CLARK, of the city, county, and State of New York, have invented a new and Improved Fastening Device for Insulators, of which the following is a full, clear, and exact description.

My invention relates to improvements in fastening devices for securing transmission cables or wires in the sockets of insulators.

More especially my invention relates to means for securing such wires in a socket of an insulator which socket is wider than a slot extending through the wall of the insulator and communicating with the socket, this latter construction being subject of another application for patent which I have filed simultaneously herewith. By having a slotted insulator with the slot widened to form a wire holding socket, I can secure a shim, wedge or binding upon the wire and within the socket so as to effectually prevent the wire from lifting out of the socket through the slot.

In my present invention, I have shown several devices having the above end in view, with the object of covering any practical means for binding the wire or cable in place, and the several modifications which I have illustrated only emphasize the fact that my invention is not limited to a precise fastening.

With these ends in view, my invention consists of a fastening for insulators, the construction of which will be hereinafter described and the novel features claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken end elevation of my fastening, as applied to a transmission cable and insulator. Fig. 2 is a broken side elevation partly in vertical section of the same. Fig. 3 shows in end and side elevation, a form of shim or split tube, which can be used to advantage in the fastening. Fig. 4 is an end view of a slight modification of the apparatus. Fig. 5 is a side elevation partly in vertical section of the structure shown in Fig. 4. Fig. 6 is an end view of another modification of the device. Fig. 7 is a view in side elevation and vertical section of the

structure shown in Fig. 6. Fig. 8 is a detail of a split nut which can be used with the form of construction referred to later. Figs. 9 and 10 show in plan and edge elevation a fastening plate adapted for use with the structure shown in Figs. 6 and 7. Fig. 11 is an end view of a split nut applied as a part of the fastening. Fig. 12 is a view partly in side elevation and partly in vertical section of the fastening as secured with a split nut. Fig. 13 is a detail of the nut shown in Fig. 11, and with the parts separated. Fig. 14 is a view in end elevation and longitudinal section of a form of split tube which may be used. Fig. 15 is a plan of a preferred form of clamp having the clamping band and shims integral. Fig. 16 is a detail in side and edge elevation of one of the clamping bands which can be used. Fig. 17 is an end view of the structure shown in Fig. 15, and Fig. 18 is a side elevation of the structure shown in Fig. 15.

My invention is intended to be used in connection with an insulator 10 which is adapted to carry a transmission cable 11 or other wire, and which has a slot 12 opening from the socket which holds the wire, said slot being narrower than the socket and of a width barely sufficient to permit the wire or cable to be dropped into place. If preferred, the slot can be of some other part of the insulator than on the top. When the wire is in place, it will be seen that the only thing necessary to secure it is to insert some sort of a binder upon or around the wire, which will prevent it from passing out through the slot 12 and fastening the binder in place. In consonance with this idea, I have shown several ways of accomplishing this result. As shown in Figs. 1 to 3, I use split tubes or sections of tubes which are inserted in the socket of the insulator on opposite sides of the wire or cable 11 and these tubes are long enough to project through the insulator. They also are perfectly provided with projecting tongues 14. When the wire is dropped into place in the insulator the split tubes are inserted and clamps 15, which are simply metallic straps, can be fastened around the tube ends and secured by bolts 16 having suitable nuts, after which the tongues 14 can be doubled over upon the clamps, as shown at 14^a in Fig. 1, thus preventing any displacement of

the clamps, and it will be seen that the fastening device cannot move endwise, while the parts 13 will absolutely prevent the wire from passing out through the slot 12. If
 5 desired, shims 17 can be inserted on opposite sides of the wire 11 and preferably on the part near the slot 12, and these may be made integral with the clamps and thin ends doubled over as hereinafter described.

10 In Figs. 6, 7, 9 and 10 I show another very efficient and convenient means of effecting the fastening. In this case the socket in the insulator is provided with shoulders 18 on the upper part of its wall and a plate
 15 19 can be pushed through endwise above the wire and will by engaging the shoulders prevent the wire from passing out through the slot 12. The plate 19 can be reduced at the ends as shown at 20 and these can be
 20 bent up, as shown at 20^a in Fig. 6 to prevent displacement, the parts being secured as before by the clamps 15.

In Figs. 11 and 12 I have shown strips or sections of tubes 21 inserted on opposite
 25 sides of the wire 11 and the tubes are provided with a tapering thread on the outside as shown in Fig. 14. The tube ends project from the opposite sides of the insulator, and can be engaged by split nuts such as 22 in
 30 Fig. 8 or 23 in Fig. 13. I prefer the form shown in Fig. 8, as this is mechanically better and stronger. As here shown, the nut has two opposite body portions 22^a, each having extending through it longitudinally
 35 a curved slot to receive a corresponding tongue 22^b which projects from the opposite half. These curved tongues 22^b are long enough to extend around to a point beyond the center from the base of the tongue, and
 40 consequently they make a very secure connection between the two parts when the said parts are united, to further assist in making a perfect union, each part 22^a has a short tongue 22^c which fits into a corresponding
 45 socket in the opposite part. Instead of the form of nut just shown, however, the style shown in Fig. 13 can be used, or the shape of either can be departed from, if preferred. In Fig. 13 the opposite parts 23^a are each
 50 provided with a tongue 23^b having an enlarged outer end, and with a corresponding recess 23^c on the opposite side so that the parts can be slipped together endwise after being placed on a wire and the tongue of
 55 one will fit into the recess of the other. In using the split nut the split tubes 21 are thrust in around the wire 11 with the ends protruding, the parts of the nuts are then put together over the wire and the nuts
 60 screwed to place as in Figs. 11 and 12, so that they will fit snugly against opposite sides of the insulator and so any end motion is effectually prevented. In Figs. 4, 5, 15, 17 and 18 I have shown the wedging
 65 arms or shims 17 made integral with the

clamps 15^a which are otherwise like the clamps 15. It will be seen that in this instance an arm or shim 17 extends laterally from a clamp 15^a and when the parts are in place the nuts on the bolts 16 can be tight- 70
 ened up and the ends of the shims or arms doubled over as at 17^a, thus securing the parts.

The foregoing description will make it very clear that my invention is not limited 75
 to a definite device for securing a wire in an insulator in which the inlet to the socket is restricted so that only the wire can pass through, but that many devices can be used for wedging or binding the wire so as to 80
 enlarge it and prevent it from passing out through the slot.

The arrangements which I have described and illustrated are practical, and it will be seen that either form of the construction en- 85
 ables a wire to be very rapidly strung, and that the fastening device can be quickly applied and will hold the wire absolutely against accidental displacement.

Having thus fully described my inven- 90
 tion, I claim as new and desire to secure by Letters Patent,—

1. The combination with a slotted insulator having its intake portion of the slot restricted, of shims or filling devices to fit 95
 between the wire and the walls of the containing slot, and fastening means gripped to the wire at opposite ends of the said slot.

2. The combination with an insulator having a slot with a restricted intake adapted 100
 to receive a wire, of filling shims to fit between the wire and the insulator, and fastening devices for pressing the shims in engagement with the wire.

3. The combination with an insulator hav- 105
 ing a wire receiving slot with a restricted intake, of shims fitting around the wire and projecting beyond the insulator, and clamps fitting around the ends of the said shims, and also around the wire. 110

4. The combination with an insulator having a slot with a restricted intake adapted to receive a wire, of a shim fitted between the wire and the restricted intake of the slot, and means for clamping the shim to the 115
 wire.

5. The combination with an insulator having a slot with a restricted intake and internal shoulders at the junction of the slot and intake, of a shim interposed between 120
 the wire and shoulders, and means for clamping the shim to the wire.

6. The combination with an insulator having a wire receiving slot with a restricted in- 125
 take, of clamps to fit around the wire at the ends of the slot, and shims on the clamps adapted to extend through the slot and to have their free ends doubled over the clamps.

7. The combination with an insulator hav- 130
 ing a slot with a restricted intake adapted to

receive a wire, of filling shims fitted between the wire and insulator, and clamps on the shims in engagement with the insulator.

8. In combination with an insulator having a slot with a restricted intake adapted to receive a wire, of filling shims fitted between the wire and the insulator, and fastening devices bearing against the outer surface of the shims.

10 9. In combination with an insulator hav-

ing a slot with a restricted intake adapted to receive a wire, of a device to fit between the wire and the walls of its containing slot, clamps to hold the device in place, the said device having a bent portion adapted to engage the outer edges of the clamps. 15

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Witnesses:

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