No. 842,941. PATENTED FEB. 5, 1907.

W. G. CLARK.

INSULATOR.

APPLICATION FILED JAN. 29, 1906.

2 SHEETS—SHEET 1.

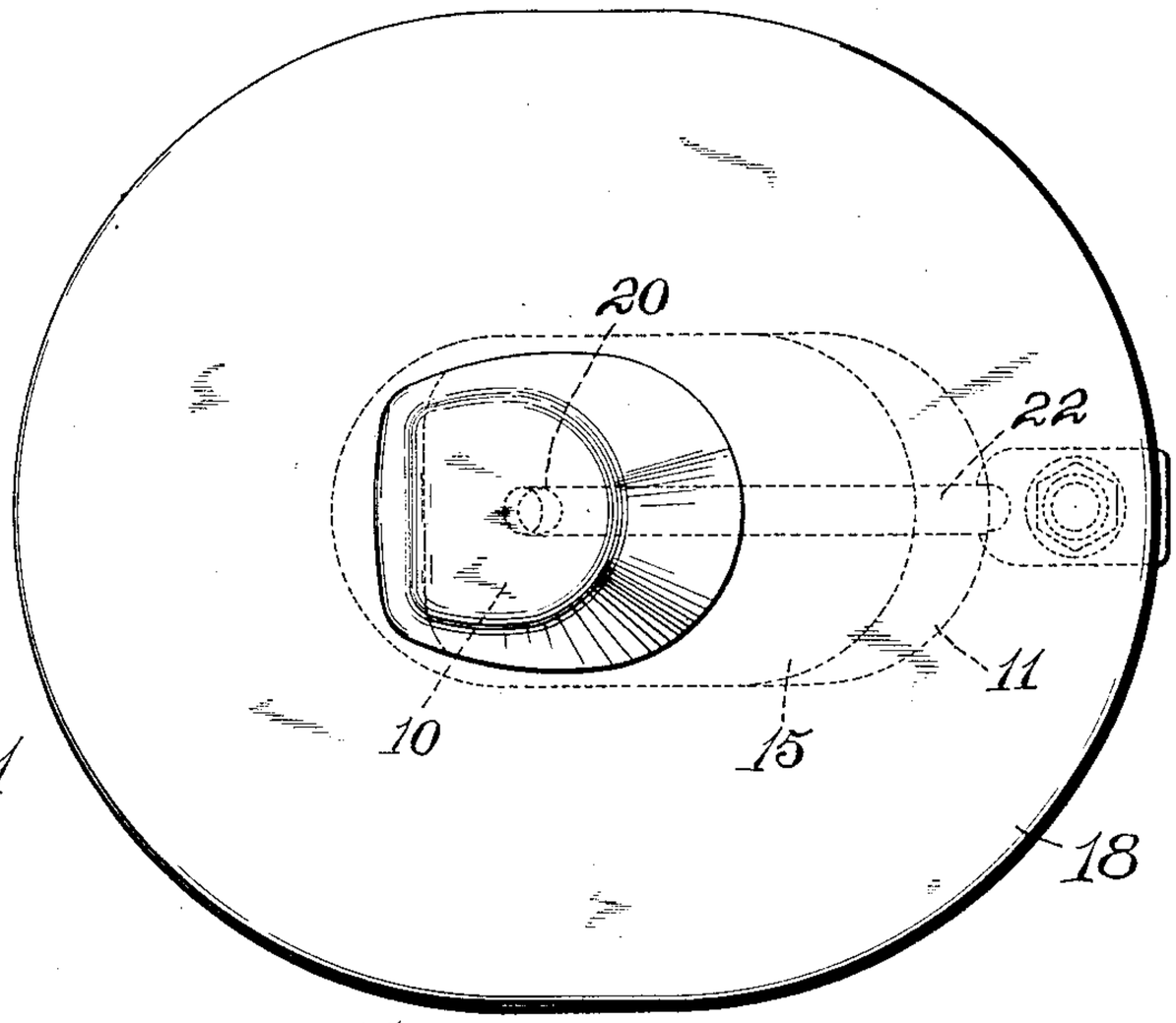

Fig. 1

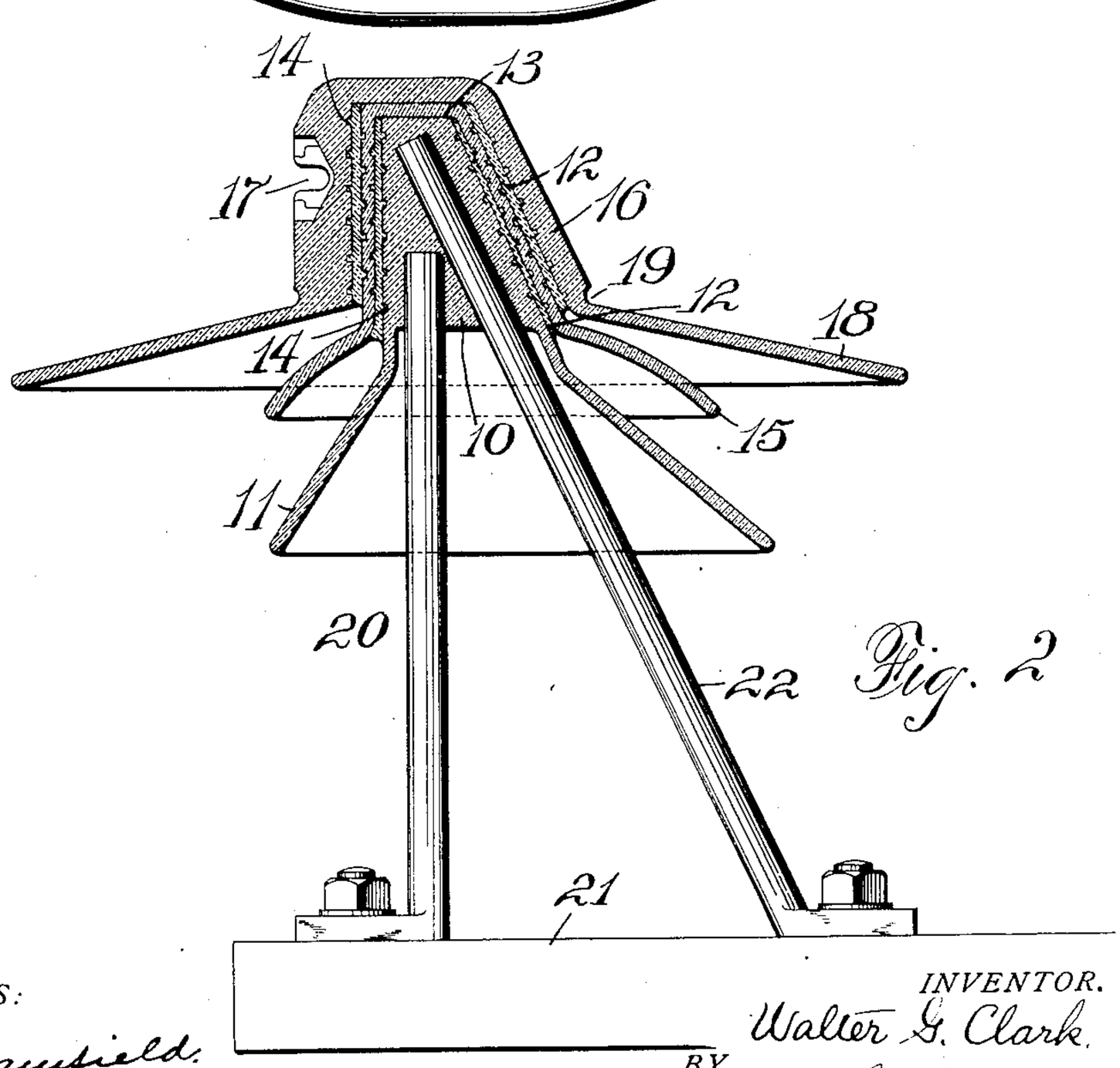

Fig. 2

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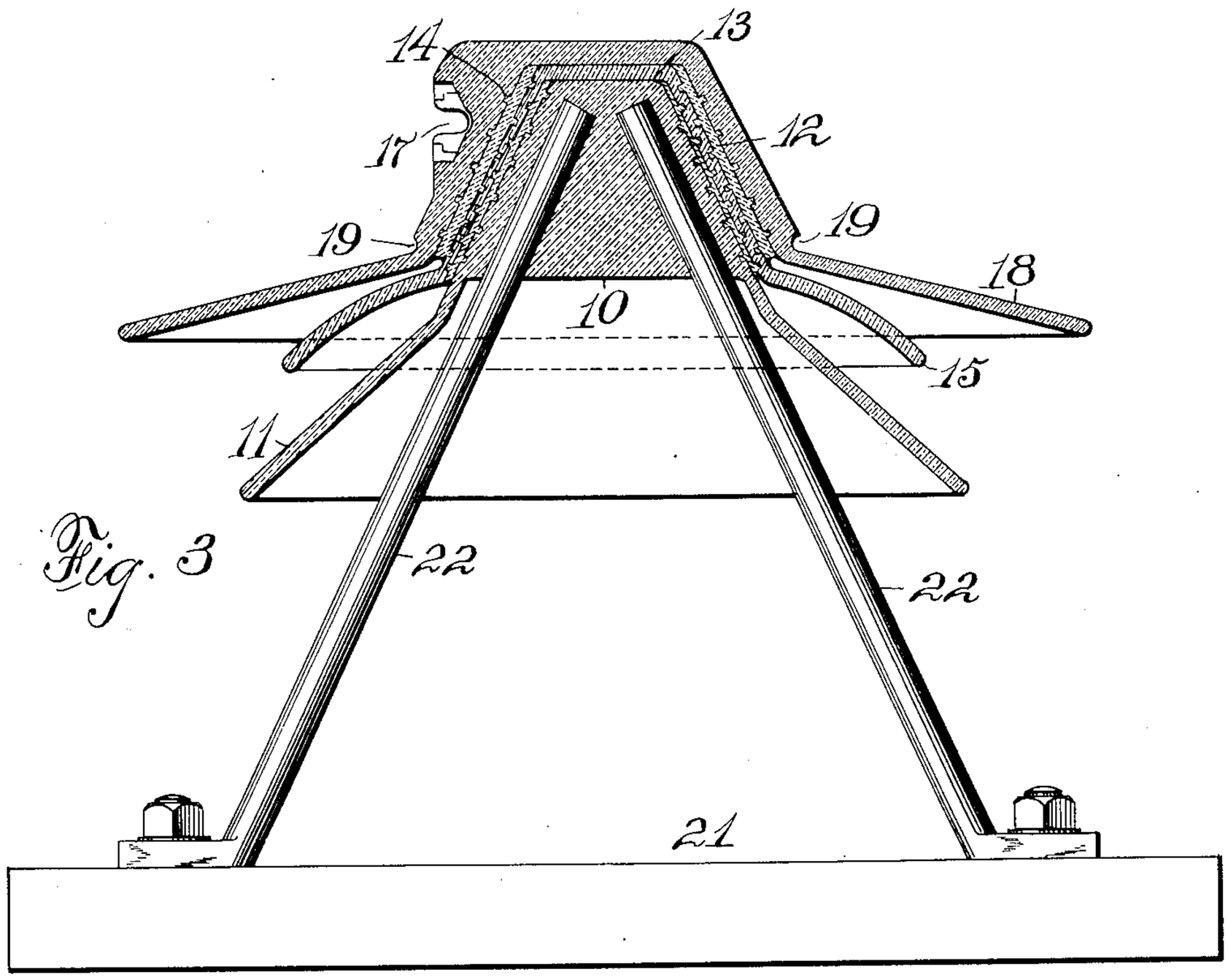

Fig. 3

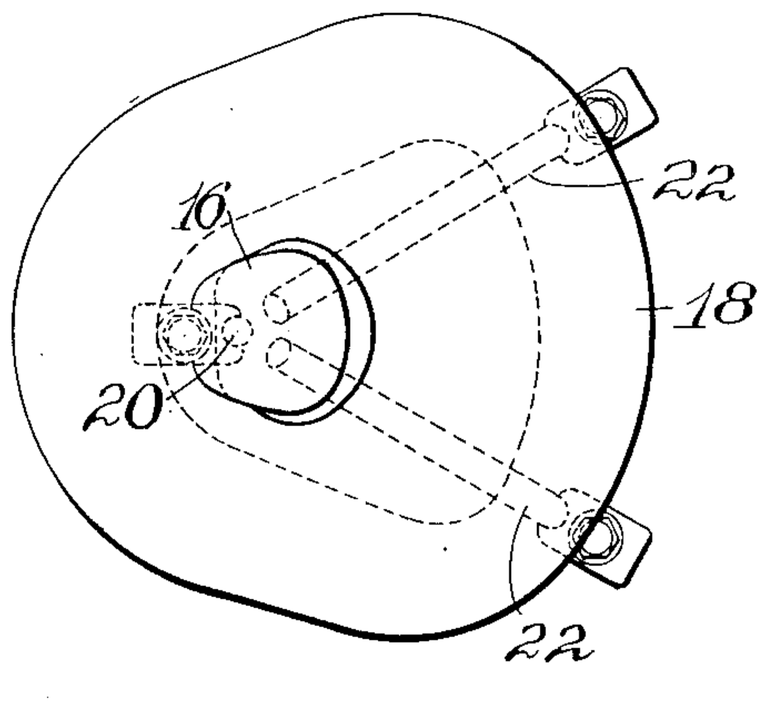

Fig. 4

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UNITED STATES PATENT OFFICE.

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INSULATOR.

No. 842,941. Specification of Letters Patent. Patented Feb. 5, 1907.

Application filed January 29, 1906. Serial No. 298,553.

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 Insulator, of which the following is a full, clear, and exact description.

My invention relates to improvements in insulators such as are used as supports for electric wires.

The object of my invention is to produce an insulator which is particularly adapted for use in places where the wire has an unusual strain, such as at the end of a line or on a curve where the wire deviates from a straight line, although of course the insulator can be used in any place where a wire-carrying insulator would naturally be employed.

My invention is especially intended to take the strain off the usual pin or support for the insulator and carry it to the pole, building, or other structure to which the insulator is attached.

My invention is intended, further, to produce an insulator in which the strain is one of compression and not a tension strain and in which an angle-brace is arranged so as to extend into the insulator opposite the point of strain, so that the insulator is thereby greatly strengthened and the strain distributed between the brace and its support. In carrying out this idea I can use ordinary insulating materials, can make the general structure of the insulator quite similar to that generally used, and prefer to use the sectional petticoat construction; but I modify this construction by elongating the insulator in the direction of its strain, so that it can well support the load and so as to provide also for the strengthening brace or braces, as the case may be.

With these ends in view my invention consists of certain features of construction and combinations of parts which will be hereinafter described and claimed.

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

Figure 1 is a plan view of an insulator, showing my improvement. Fig. 2 is a cross-section thereof. Fig. 3 is a vertical cross-section showing a modified arrangement of the braces, and Fig. 4 is a plan view showing still another arrangement of the braces.

The insulator is provided with a central block 10, which, like the other parts 13 and 16 of the insulator, to be hereinafter referred to, can be of porcelain, glass, or any suitable material, and this inner block is preferably provided with the spreading petticoat 11 at its lower end. The block is elongated transversely in one direction to provide for the brace hereinafter referred to, and a grout 12, of cement, is placed between the block 10 and the shell 13 of the next section of the insulator. The body portion of the shell 13 is shaped to fit on over the block 10, and at its lower end the shell merges in the petticoat 15. The block 10, the shell 13, and the shell 16, to be presently mentioned, have each recesses 14 to receive the cement grout which is placed between the several sections of the insulator and which serve, when the cement hardens, to lock the parts together.

The outer shell 16 is thicker than the inner shell 13 and is of the same general shape and is provided with an opening 17 on one side in which any suitable wire-clamping device can be placed. The shell 16 merges into a spreading petticoat 18, and the several petticoats 11, 15, and 18 are disposed, as usual, to shed water to the best advantage and to prevent loss of current by grounding. Obviously the number of sections 10, 13, and 16 can be increased to any necessary extent, and for some purposes two sections only might be used, and even if only the single block 10 is used my invention still applies, as will appear by the description to follow, as to the means for supporting the block.

The insulator is mounted, first, as usual, on a pin 20, which is attached to a support 21, and this can obviously be a pole, building, or other structure. In addition, however, to the pin 20, I use the angle-brace 22, which is also attached to the support 21 and which enters the block 10 and extends to or above the top of the pin 20 for the purpose of relieving the strain upon the vertical pin or the vertical portion of the support. Thus it will be seen that the brace 22 is so located that the strain is taken off the pin 20 and is absorbed by the brace 22 and transferred to the support.

It will be noticed by reference particularly to Fig. 1 that the several sections of the insulator are elongated in the direction of the brace 22, so as to provide the necessary distance and insulation, and it will be evident that instead of a single brace extending as shown two or more braces can be used and

spread at their bases or point of attachment to a support, so as to brace the insulator in more than one direction, if desired. This is clearly shown in Fig. 3, where the vertical pin 20 is dispensed with and two angle-braces 22 are used. This form of support for the insulator is especially adapted for certain peculiar places—as, for instance, where the line is being carried uphill—and in some cases it is well to use both the vertical pin, as in Fig. 3, and supplement this with additional braces, as shown in the same figure.

It will be noticed that whether there is one brace or a plurality of braces the insulator is elongated in the direction of the brace or braces, so, as stated, to preserve the necessary strength and insulating qualities. The important thing, however, is to have the bracing effect and to provide the brace or plurality of braces in such a manner that the lateral strain upon the insulator shall be transferred from the vertical support to the angle-braces and relieve both the insulator itself and its pin 20, so that neither shall be likely to break or be otherwise strained. In the drawings I have shown the outer section of the insulator provided with an ordinary groove 19, in which a holding strap or wire can be placed; but it will be understood that the exterior construction of the insulator and the structure and arrangement of the petticoats form no part of this invention.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a wire-carrying insulator elongated in the direction of the wire strain or tension thereon, of bracing means extending into the insulator on the general line of said elongation.

2. As an improved article of manufacture, a wire-carrying insulator elongated or broadened transversely in the direction of the strain or tension upon it.

3. The combination with the insulator and its support, said insulator having means for attaching a wire to one side thereof, of an angle-brace extending into the insulator to a point opposite the wire-attaching means.

4. The combination with an insulator having a wire-receiving opening or cut along one side, of a brace or support extending into the insulator and projecting outward diagonally and on the opposite side from the said wire-opening.

5. The combination with an insulator having a wire-opening on one side and having its body elongated in the direction of its strain, of a bracing-support entering the insulator at an angle to its axis and extending opposite the wire-receiving opening.

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Witnesses:
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