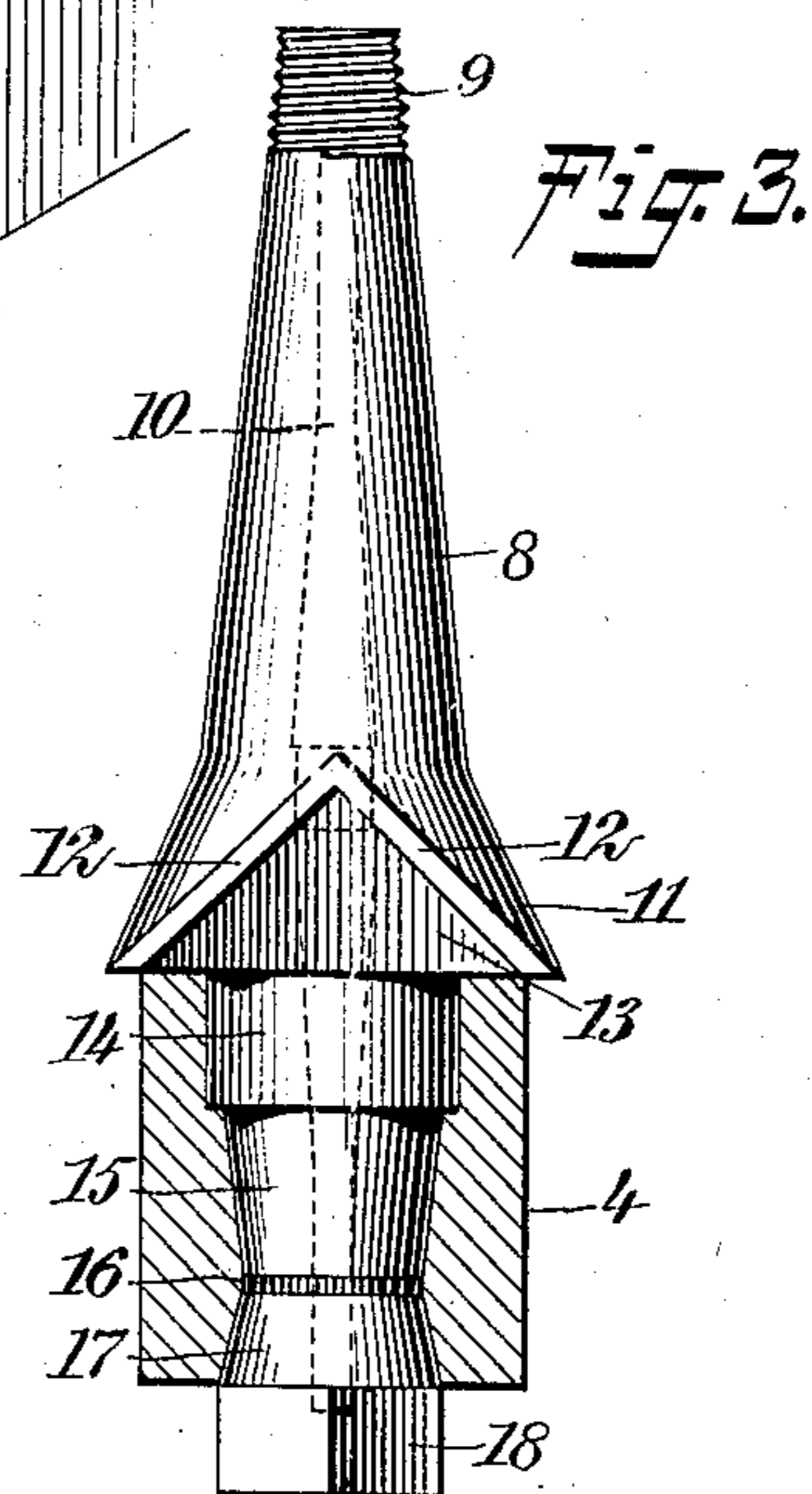
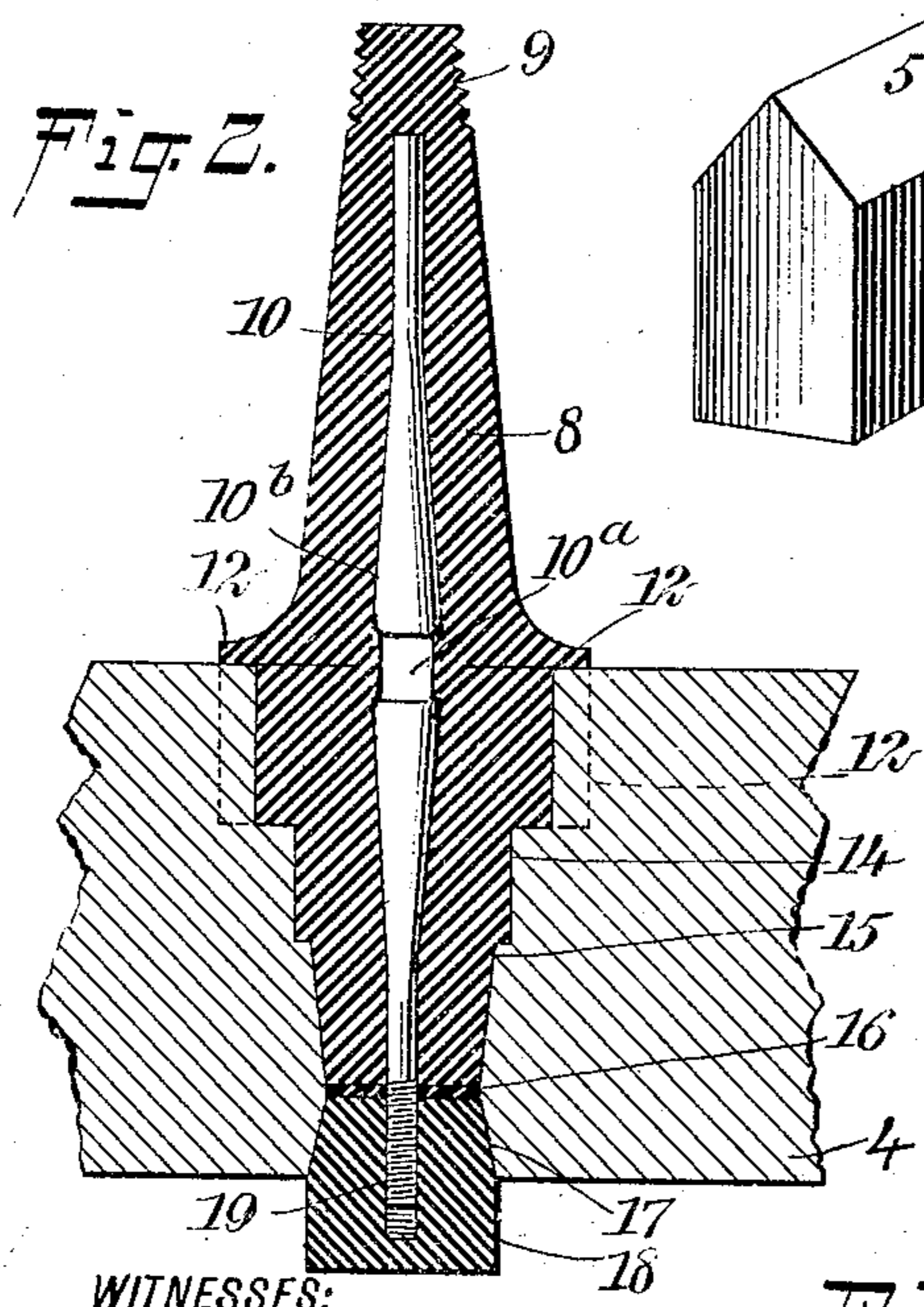
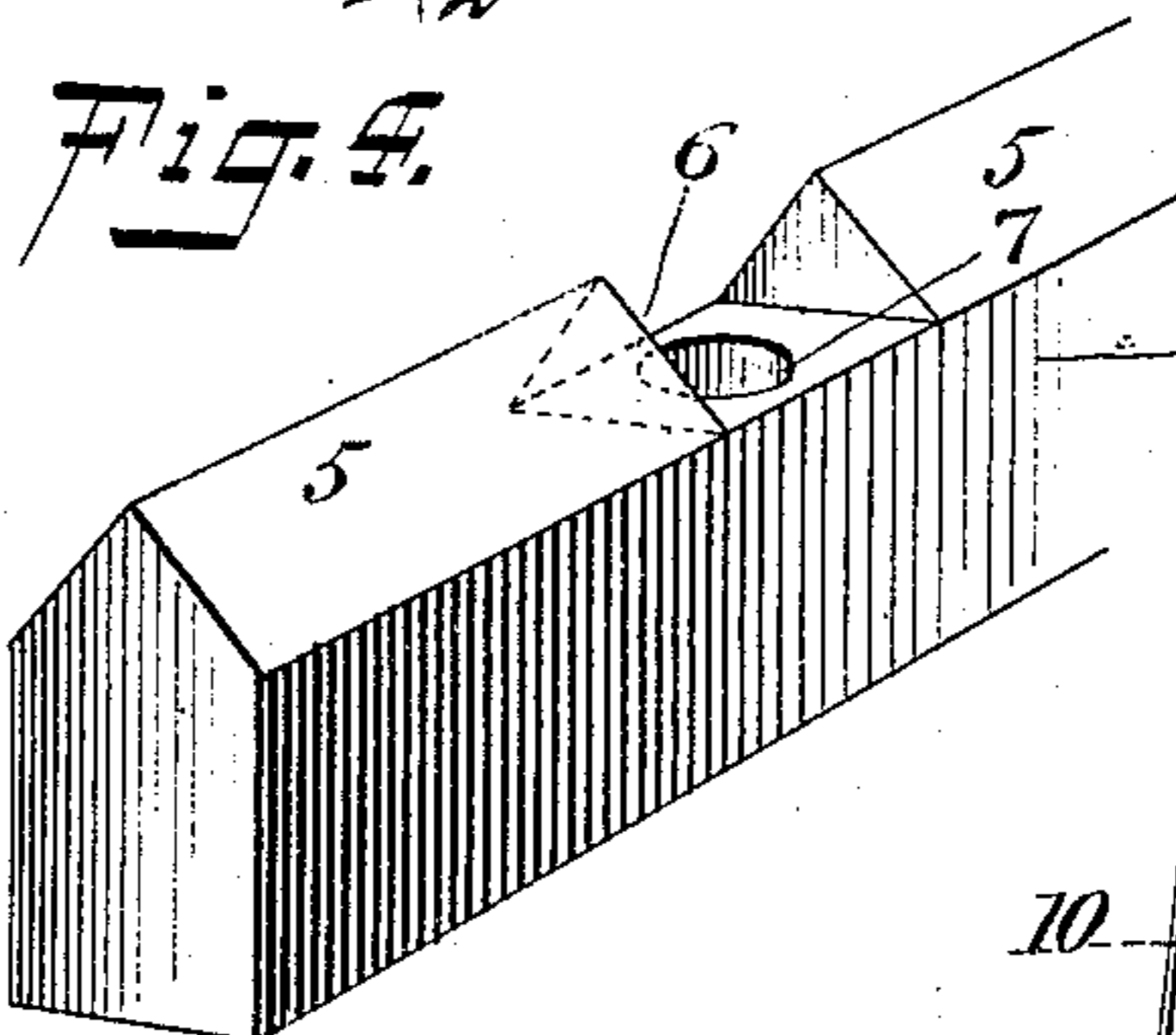
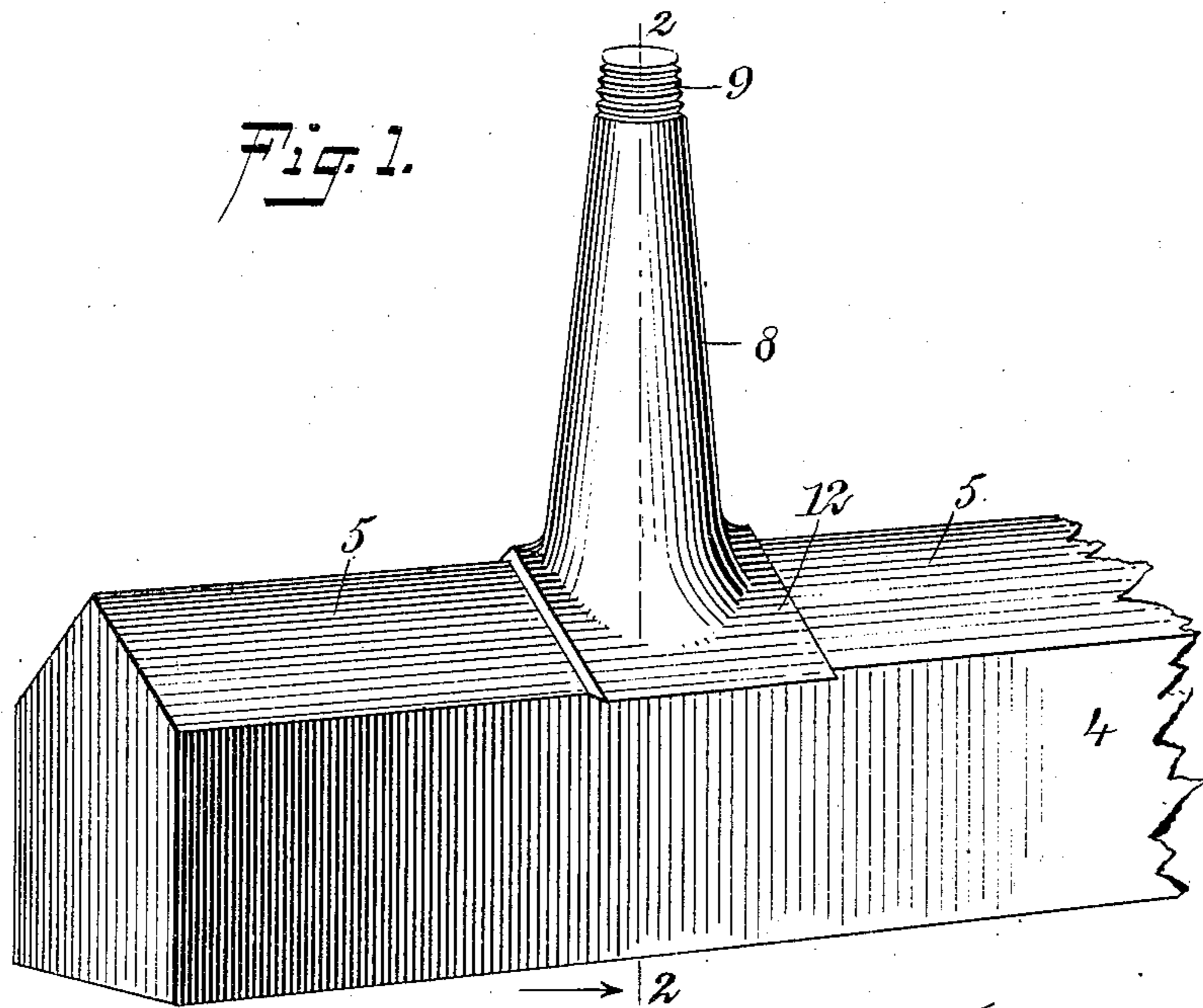


No. 848,506.

PATENTED MAR. 26, 1907.

L. STEINBERGER.
INSULATOR PIN AND SUPPORT THEREFOR.
APPLICATION FILED JULY 24, 1905.



WITNESSES:

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INSULATOR-PIN AND SUPPORT THEREFOR.

No. 848,506.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed July 24, 1905. Serial No. 270,986.

To all whom it may concern:

Be it known that I, LOUIS STEINBERGER, a citizen of the United States, and a resident of the city of New York, (borough of Brooklyn,) in the county of Kings and State of New York, have invented a new and Improved Insulator-Pin and Support Therefor, of which the following is a full, clear, and exact description.

My invention relates to insulator-pins and means for supporting the same, my more particular object being to provide a type of pin which can be securely mounted upon a cross-arm in such manner as to protect the same against undue action of moisture and also against strains due to the weight and to the swaying of the wire or cable.

Another object is to provide a support or cross-arm of novel construction which will less readily retain snow or moisture and to insulate this support or cross-arm more effectually, especially the portion adjacent to the insulator-pin.

I have noticed that most insulator-pins and their supports are so constructed and operated as to afford a lodging-place for snow and moisture, and especially that they are liable to retain moisture intermediate of the base of the pin and the support. In other words, moisture is absorbed between the pin and its support and rapidly rots out the pins and the support at their point of junction in case they are made of wood. If the pin or the support be made of a substance incapable of rotting, the moisture collected at the points of junction does considerable harm in that it weakens the ultimate dielectric strength of the insulator by exposing the same to danger of an arc. By my construction I seek as far as practicable to exclude moisture from the juncture between the insulator-pin and its support and at the same time to provide a more effective insulating-surface on the upper portion of the cross-arm.

It is well known that the weakest portion of insulator-pins of the usual form when in operative position is at the point of juncture with the cross-arm. It will be readily seen that by my construction the strongest portion of the pin is disposed at the point mentioned, where strength is mostly needed, and owing to the novel construction moisture is effectively excluded from the juncture between the pin and its support. A reinforcing mem-

ber of such form that it will still further strengthen the pin at the point of juncture with the cross-arm is disposed within the pin.

In the accompanying drawings, forming a part of this specification, like characters of reference indicate like parts in the several views.

Figure 1 is a perspective showing one of my improved insulator-pins mounted upon a cross-arm. Fig. 2 is a vertical section through the pin and cross-arm, taken upon the line 2 2 in Fig. 1 looking in the direction indicated by the arrow. Fig. 3 is a side elevation of the pin, the cross-arm being shown in section in order to fully expose the shape of the pin, and Fig. 4 is a fragmentary perspective of the cross-arm; with the insulator-central horizontal section through the rod 10, showing the square 10^a thereof, the latter serving as an anchorage.

The cross-arm is shown at 4 and may be of wood or any other preferred material. The arm is provided with a wedge-shaped portion 5, preferably integral therewith and cut away so as to form a mutilation 6. Disposed centrally of this mutilation is an aperture 7, of like conformity as the lower portion of the supporting-pin. The latter is shown at 8 and is provided with a threaded portion 9, upon which the insulator may be mounted. The general conformity of the pin 8 above the cross-arm is that of a frustum of a cone. A metallic rod 10 is disposed centrally through the pin and serves to strengthen the same. This metallic rod 10 is provided with a square portion 10^a and with enlarged frusto-conical portions 10^b, all of these portions serving as an anchorage.

The pin is provided with an enlarged portion 11, having a shelter 12 integral therewith, this shelter being of the conformity indicated in Fig. 3 and adapted to overlap the wedge-like portion 5 of the cross-arm. The enlarged portion 11 is provided with a facet 13, relatively to which the shelter portions 12 overhang slightly, as will be understood from Figs. 2 and 3. The pin is further provided with a cylindrical portion 14 and a frusto-conical portion 15, these parts being integral with the main body of the pin. A washer 16, preferably of soft rubber, engages the lower end of the frusto-conical portion 15 and is engaged by a frusto-conical surface 17, with

which an angular nut 18 is integrally formed. This nut is threaded internally and fitted upon a threaded portion 19 of the rod 10. The shelter portions 12 form an angle with each other, and thus present a substantially saddle-shaped top.

My invention is used as follows: To mount the pin, it is raised above the cross-arm, the cylindrical portion 14 and the frusto-conical portion 15 being inserted within the aperture 7, which, as above explained, is of similar conformity therewith. The washer 16 is next threaded upon the rod 10 from below, and the nut is run upward upon the threaded portion 19, so that the frusto-conical portion 17 of the nut engages the cross-arm 4. Not only is the pin thus drawn downwardly, so as to make a close fit relatively to the cross-arm, but the nut is drawn upwardly, so as to make also a neat fit, and the washer 16, of rubber, is squeezed, so as to spread and make a close engagement with the inner walls of the aperture. A water-tight joint very effective in practice is thus secured. In the first place the water flowing down the pin upon reaching the shelter 12 is to a great extent directed off of the cross-arm, so as to fall upon the ground. Some of the water would tend to penetrate into the mutilation 6 and aperture 7; but the projecting shelter 12 prevents this. Moreover, the tapering form of the conical portion 15 renders the fit thereof and also the fit of the cylindrical portion 14 practically water-tight. The fit of the conical portion 17 of the nut is such as to prevent any entrance of water upon the under side of the cross-arm—that is to say, if water should drip along the under side of the cross-arm, being held thereagainst by its adhesion, and should reach the nut 18 the water is unable to penetrate, and even if it had a tendency to do so it would be stopped by the washer 16, which being of rubber is not only an insulating member, but serves also as a gasket and maintains the interior of the aperture 7 completely dry at all times. The joint between the pin and the support is therefore water-tight.

It will be observed that the locking member 10, besides securely retaining the pin in the cross-arm, also reinforces the insulating member, thereby extending the arcing distance from the cable to the lowest point on the base of the pin.

The cross-arm above described is of novel construction and will afford rigid bracing portions for the pin at points above that portion of the cross-arm whereon the pin rests, thereby providing means for counteracting the lateral strains due to the swaying of the wire or cable by strong winds.

I do not limit myself to any particular material to be used in the construction of the device above described. Preferably, however, for the body of the pin and the nut I employ

the insulating material known generally in the trade as "electrose." For the rod 10 any suitable metal may be employed.

I do not limit myself to the exact shape or conformity of any part shown, as certain variations thereof may be made by those skilled in the art without departing from the spirit or scope of my invention. Neither do I limit myself in all cases to the use of metal or the material of which the rod 10 is made, nor even to the use of such a rod.

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

1. The combination of a cross-arm provided with a frusto-conical aperture, a body member provided with a portion projecting into said aperture, a metallic member connected with said portion and extending therefrom, said metallic member being threaded, and a frusto-conical nut fitting said aperture and threaded so as to engage said member thus projecting.

2. The combination of a cross-arm provided with a wedge-like sloping top and with an aperture, an insulator-pin provided with a portion entering said aperture and also provided with integral portions partially overlapping the top of said cross-arm and extending beyond the edges of said aperture, said insulator-pin being provided with means for supporting an insulator.

3. As an article of manufacture, an insulator-pin having an enlarged body portion, and reduced end portions, one of said end portions being provided with threads, and a metallic rod embedded within said body portion, said metallic rod being enlarged at its middle and provided with reduced end portions.

4. The combination of a cross-arm provided with an aperture, said aperture being large at the top and bottom of the cross-arm and small at a point intermediate of said top and bottom, an insulator-pin mounted within the top of said cross-arm and provided with a projecting portion, and a frusto-conical nut engaging said projecting portion and fitting within the bottom of said aperture for the purpose of wedging said pin and said nut into close engagement relatively to said cross-arm.

5. The combination of a cross-arm provided with an aperture, said aperture being large at its extremities and small at the points intermediate of said extremities, an insulator-pin mounted upon said cross-arm and extending into said aperture so as to fit into the portion thereof adjacent to one edge of said cross-arm, and a nut engaging a portion of said insulator-pin and provided with a portion of suitable conformity to wedge into the portion of said aperture opposite said portion where said pin enters the same.

6. The combination of a cross-arm having

an aperture, a body member provided with a portion projecting into said aperture and further provided with a sheltering portion extending beyond the limits of said aperture so as to shelter the same, and means for forcing said body member firmly into said cross-arm.

7. The combination of a cross-arm provided with an aperture, a body portion provided with a portion extending into said aperture and further provided with portions extending beyond the points of said aperture so as to prevent the entrance of water there-

into, a metallic rod connected with said body portion, and a locking member engaging said rod and said cross-arm so as to form a water-tight joint therebetween.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS STEINBERGER.

Witnesses:

WALTON HARRISON,
EVERARD B. MARSHALL.