

M. HARLOE.

INSULATOR.

(Application filed May 9, 1902.)

No Model.)

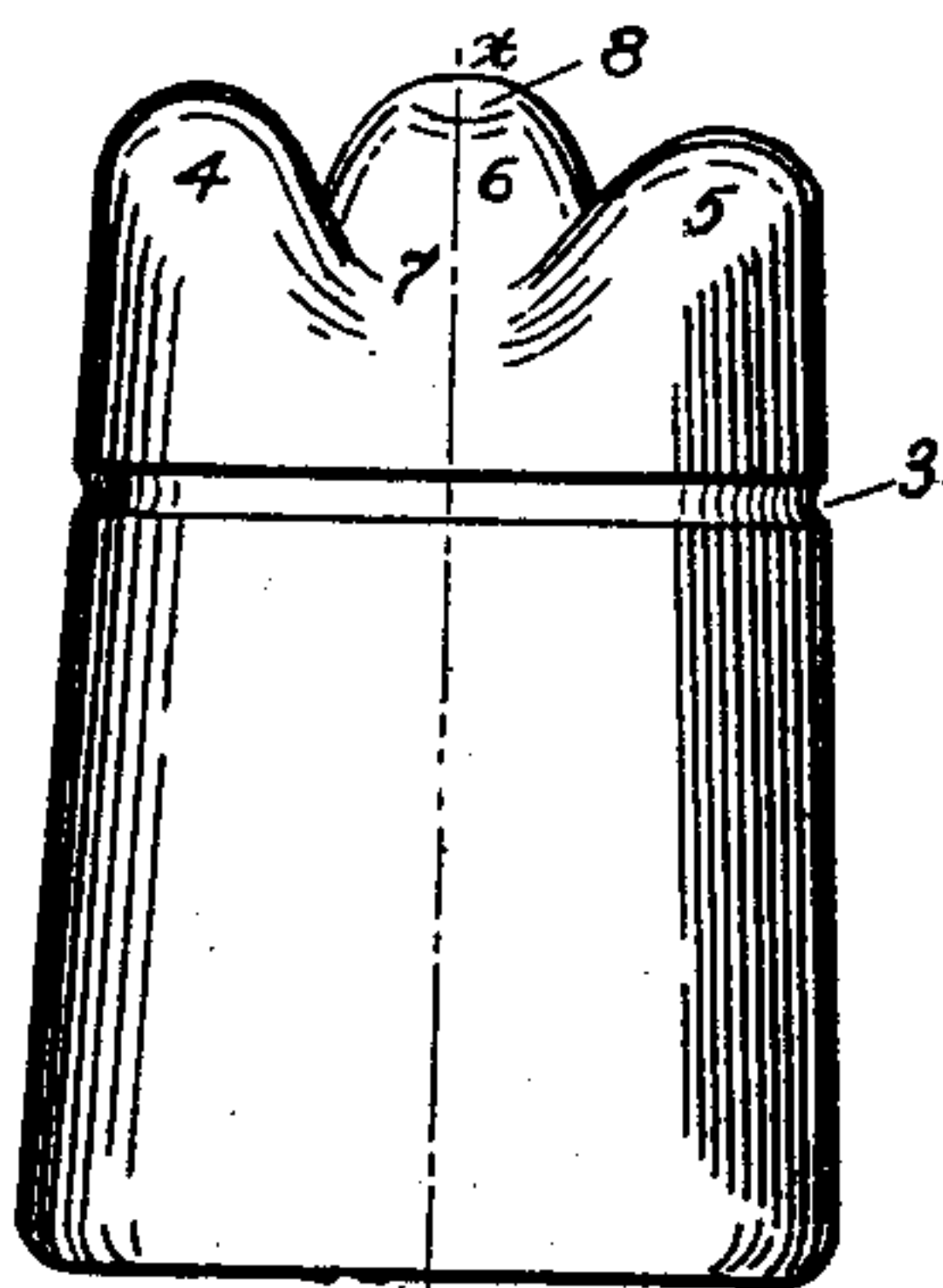


Fig. 1.

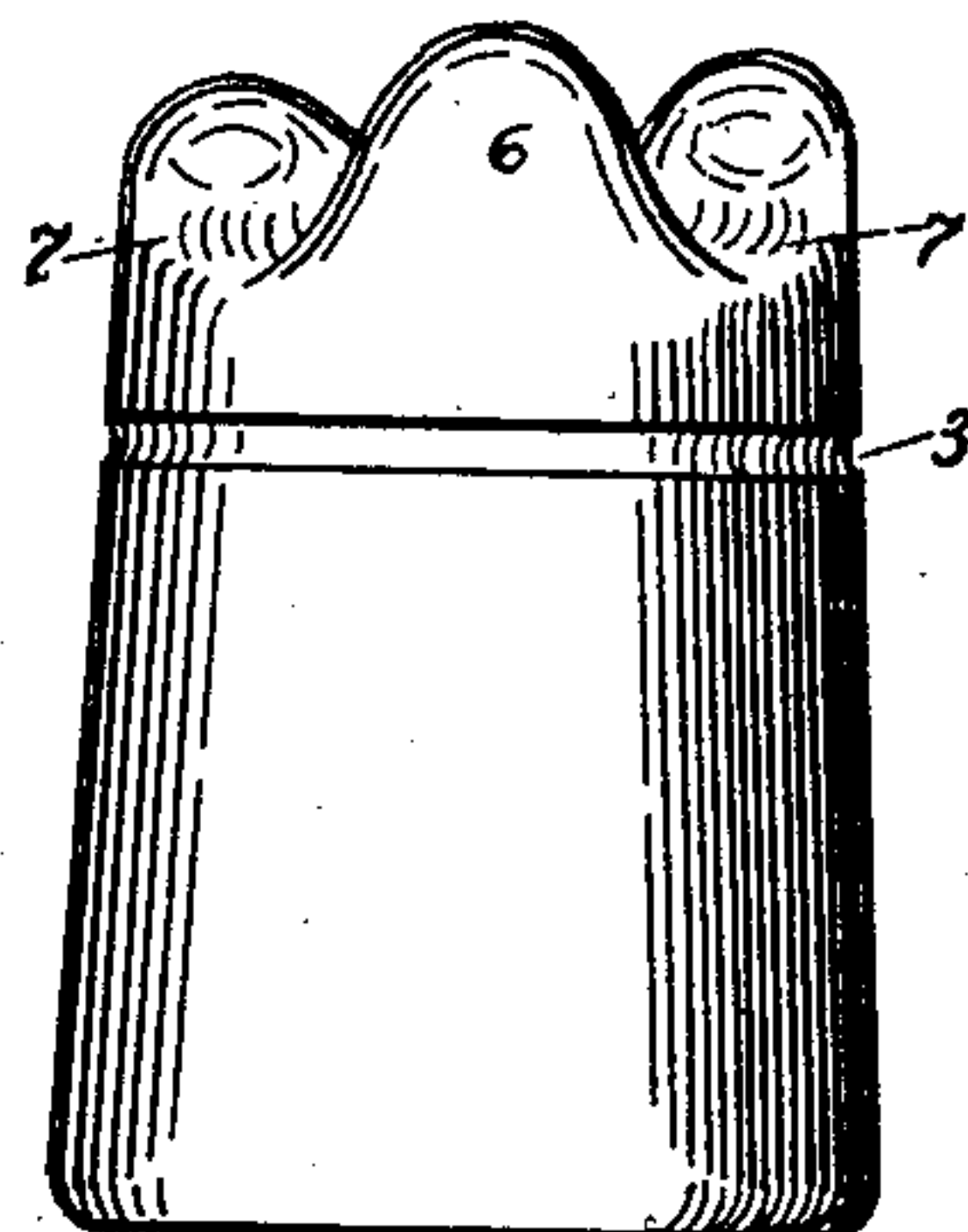


Fig. 2.

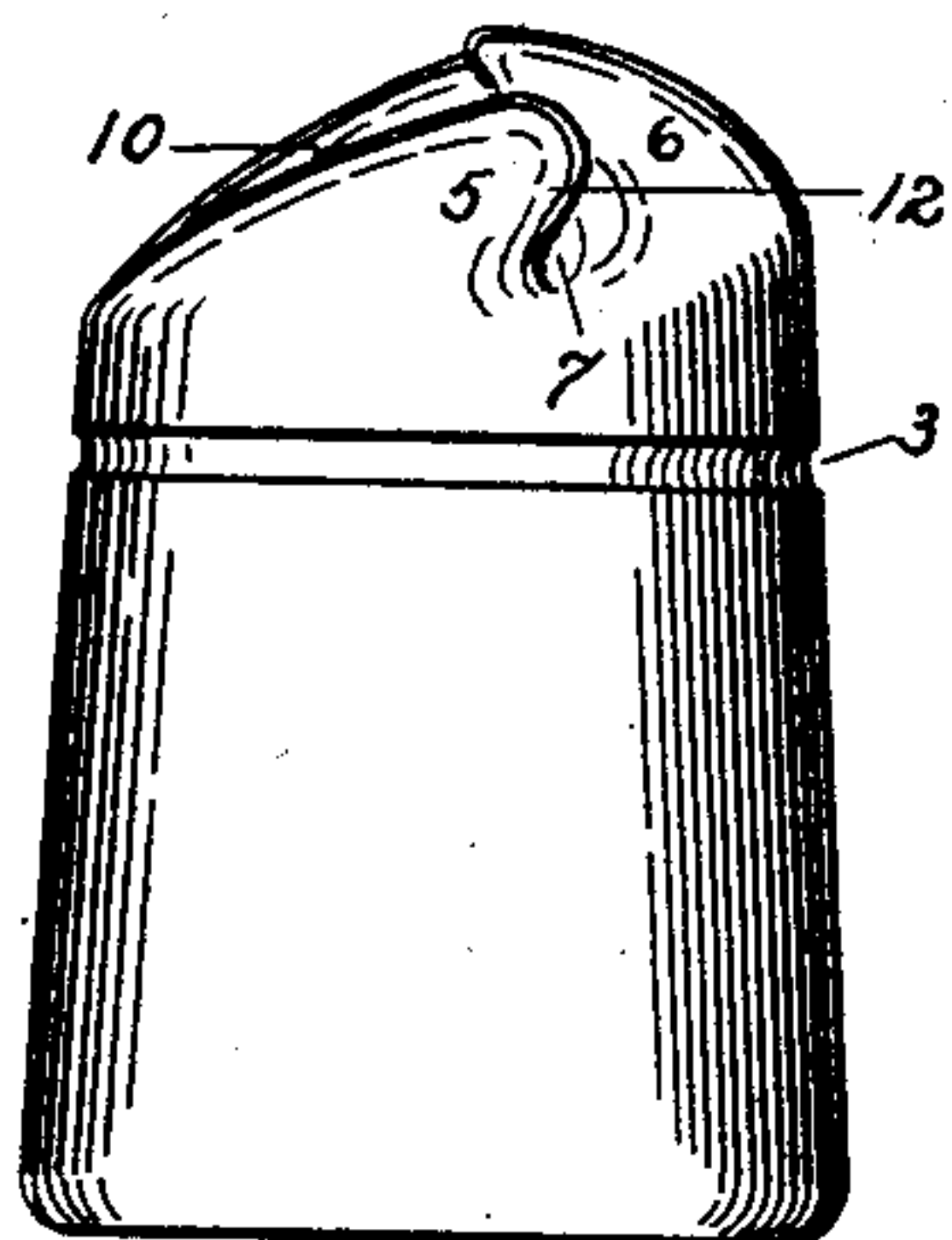


Fig. 3.

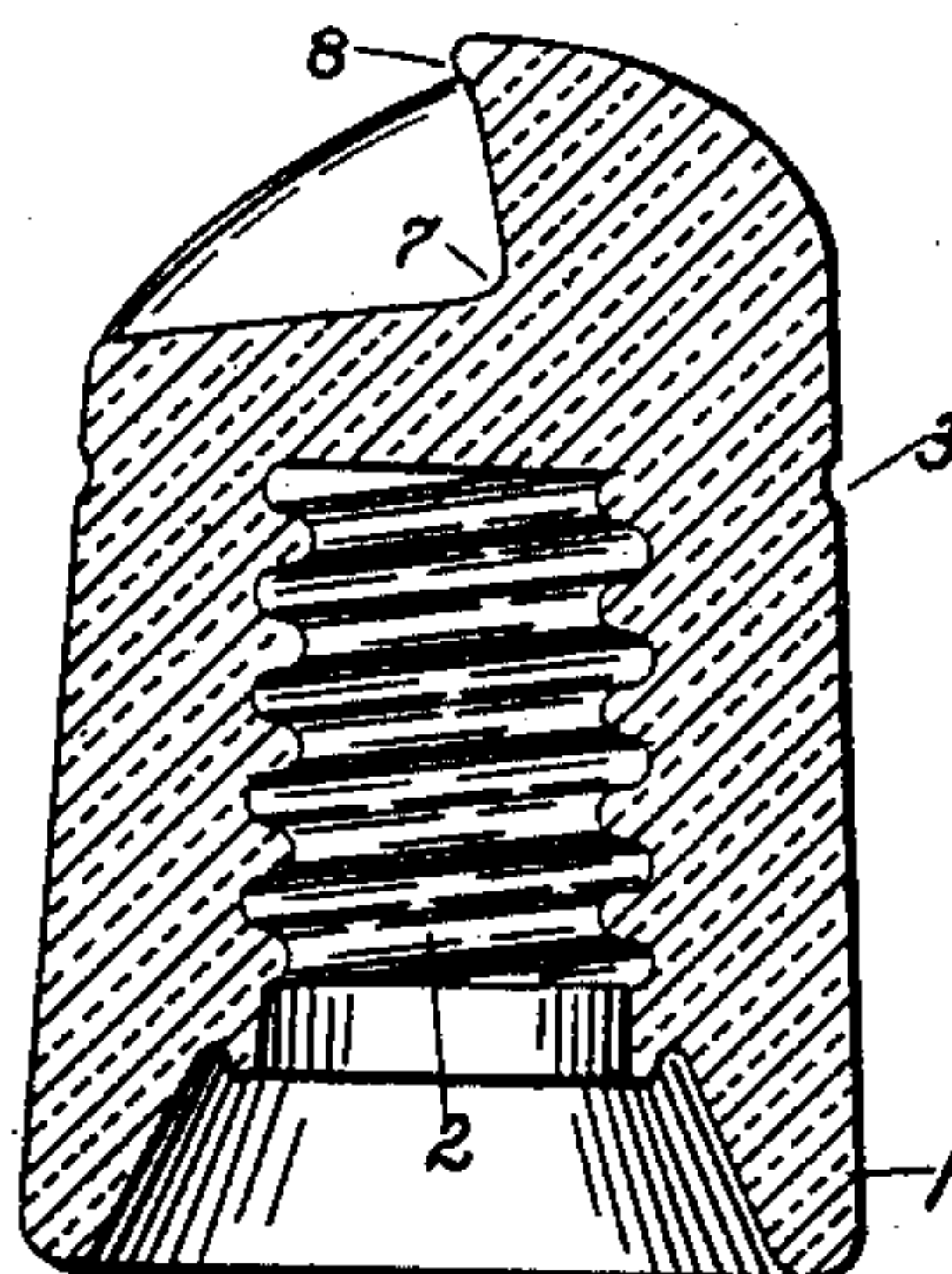


Fig. 4.

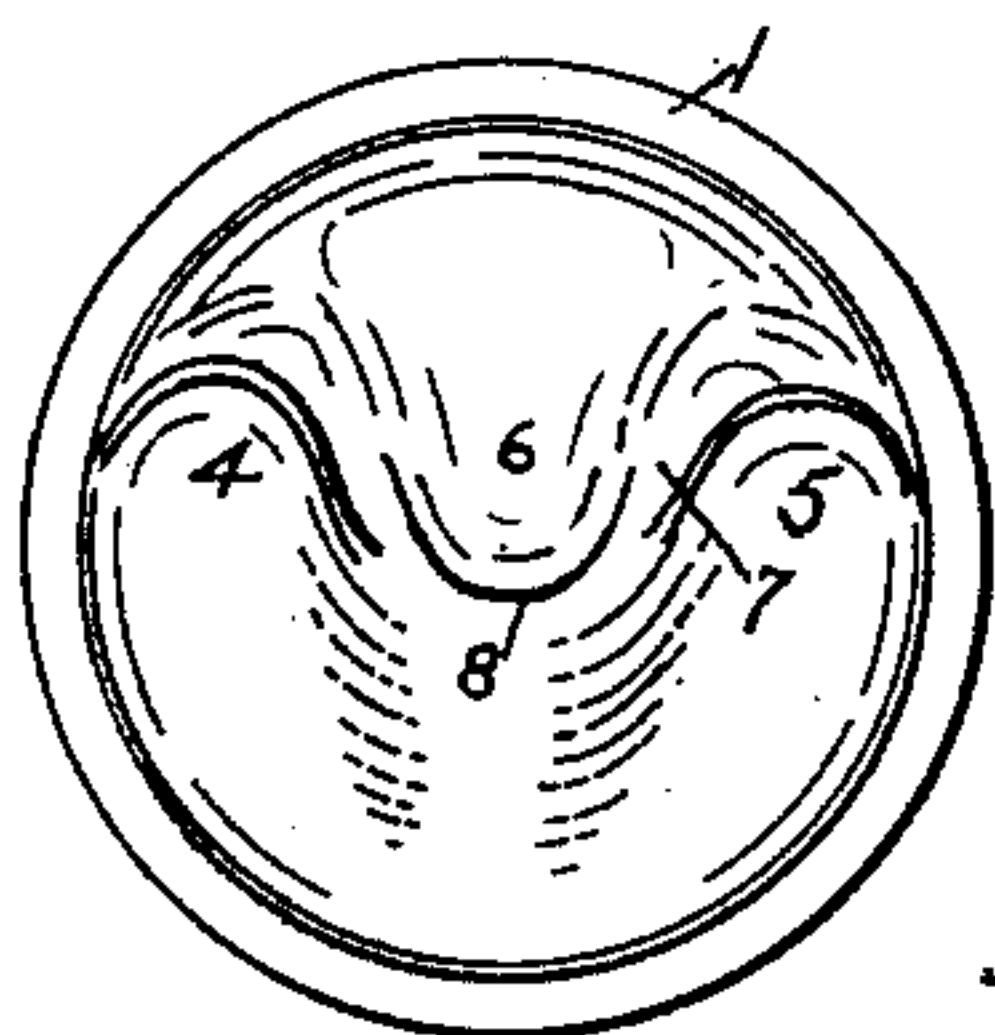


Fig. 5.

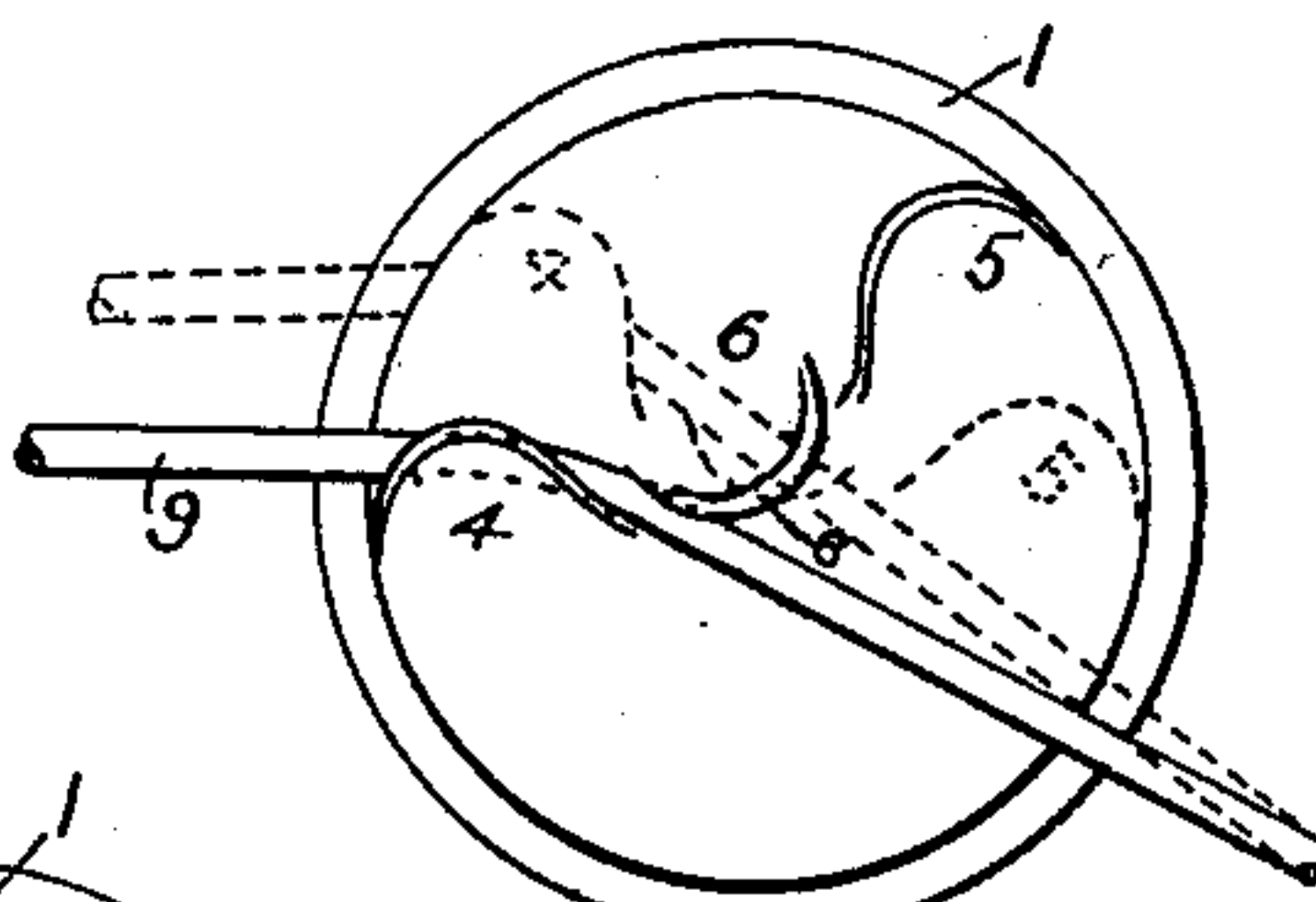


Fig. 6.

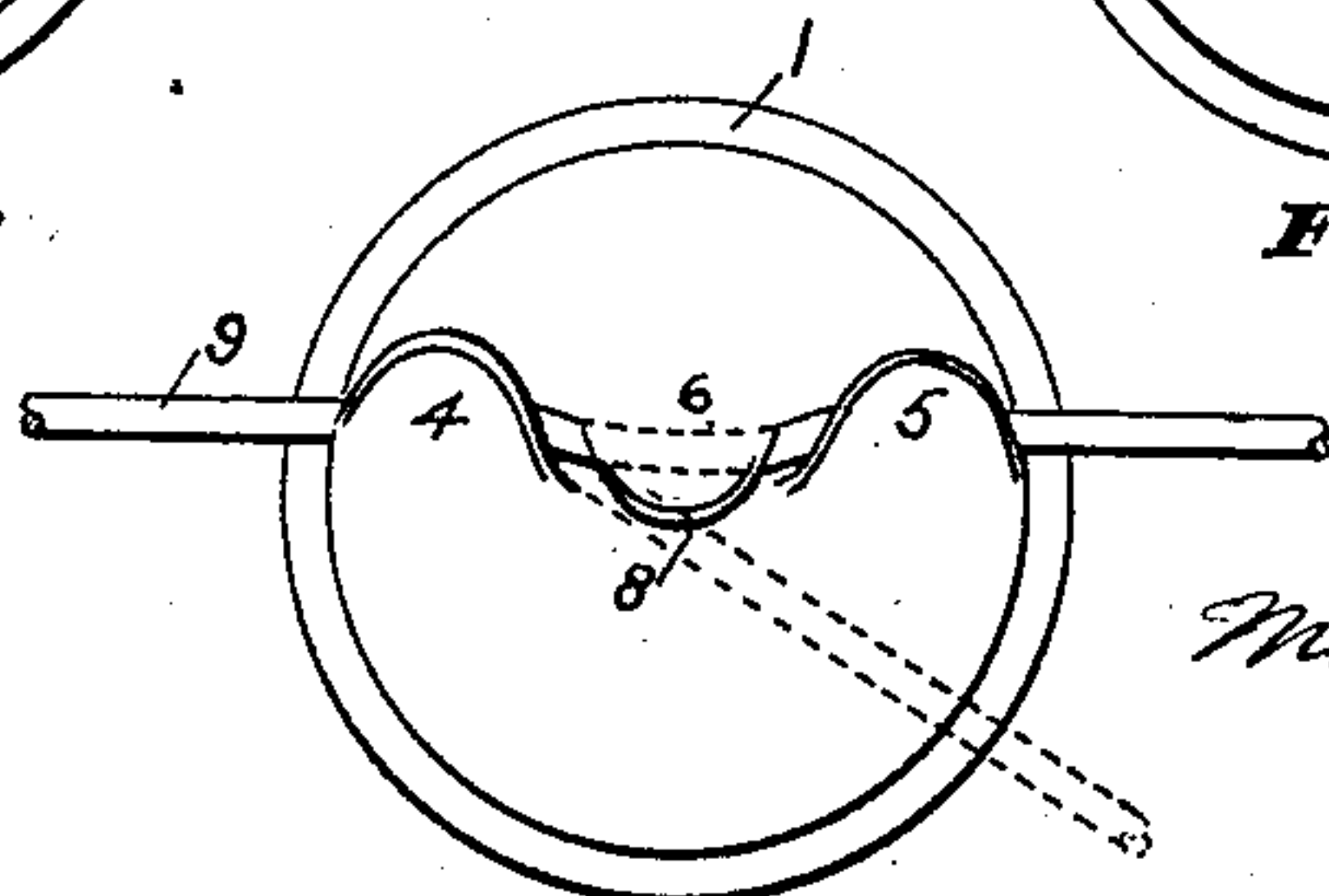


Fig. 7.

WITNESSES:

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MORTON HARLOE, OF HAWLEY, PENNSYLVANIA.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 715,375, dated December 9, 1902.

Application filed May 9, 1902. Serial No. 106,618. (No model.)

To all whom it may concern:

Be it known that I, MORTON HARLOE, a citizen of the United States, residing at Hawley, in the county of Wayne and State of Pennsylvania, have invented certain new and useful Improvements in Insulators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to insulators such as are used for electrical wires of any voltage, more especially such wires as are used for telephone and telegraph lines; and the objects of the invention are to provide an insulator of the kind to which the wires may be attached without tying, to provide an insulator of the kind of greater strength and neatness than those heretofore constructed, to render a more easy attachment of the wire to the insulator, and to improve the form and efficiency of such insulators in general.

To these ends the invention consists of the construction, arrangement, and combination of elements as herein specified, and illustrated in the drawings, in which—

Figure 1 is a side elevation of one of my insulators complete. Fig. 2 is a similar elevation taken from the opposite side of that shown in Fig. 1. Fig. 3 is an elevation taken at right angles to that of the views shown in Figs. 1 and 2. Fig. 4 is a cross-section taken on the line *x x* of Fig. 1. Fig. 5 is a top plan view of an insulator made according to my invention. Fig. 6 is a diagram partly illustrating the method of attaching the wire to the insulator. Fig. 7 is a similar diagram illustrating another stage in the attachment of the wire to the insulator.

Similar characters of reference denote like and corresponding parts throughout the several views.

For the construction of my insulators glass, porcelain, or any other insulating substance, which may be formed in a plastic state, may be used.

My invention contemplates the construction of the insulator from a single piece of glass or any other such material. The lower part of the insulator is constructed with the usual petticoat 1, an internal screw-threaded portion 2, by means of which the insulator is adapted to be secured to the ordinary wooden pegs, such as are now in use for similar pur-

poses. It is also furnished with the usual neck or groove 3, on which tying-wire may be used, or for the purpose of connecting the electrical wire to a branch line.

The principal features of the present invention are contained in the construction of that part of the insulator above the groove 3.

I am aware that insulators have been heretofore used having projections to which the wires to be insulated are wound or bent, so as to be held thereby; but the forms heretofore used have been unsatisfactory, either because the lugs or projections were too weak or because they have been improperly located, or because the grooves or passages between them in which the wire is to lie have been roughly or uningeniously formed.

In my device I construct the top or crown of the insulator into three main parts, (designated as 4, 5, and 6,) the lugs 4 and 5 sloping or hanging over in one direction and the lug 6, midway between them, sloping in the opposite direction. The lugs 4 and 5 also slope to a greater distance beyond the center of the top than the lug 6, so that the wire when strung to the insulator lies considerably to one side of the center or middle thereof. By this arrangement a swinging or twisting motion will result on the insulator should the wire from either side be torn, so that tautness on the other side will have a tendency to turn or twist the insulator and increase the kink or bend in the wire. The exposed surfaces of the lugs are each a continuance of the walls of the exterior surface of the insulator through curves in the surface thereof without any edge, angle, or break or any other sharp obtrusion whereby the wire might be cut or the insulating-coat thereof abraded. The seat or location in which the wire to be insulated lies is designated at 7, and when the wire is placed therein a slight bend or crook is formed by each of the three lugs against which it lies; but the lugs 4, 5, and 6 are arranged at a sufficient distance and in such relation with one another as to securely hold the wire without bending any sharp crook therein.

It will be understood that where the wire is to be drawn very taut a crook therein will have a tendency to weaken the wire at that point and be liable to cause breakage.

Therefore I have arranged the projecting lugs in my insulator with special reference to the preventing of unnecessary bending or crooking in the wire, and the particular construction which I have resorted to lies in the difference of height between the lugs 4 and 5, taken together with the small overprojecting lip 8 in the lug 6. The lug 4 slopes upward to a height corresponding almost to that of the lug 6, while the lug 5, lying on the opposite side of the lug 6, slopes to a height lower than that of the lug 4 to an amount equivalent to the thickness of the wire to be inserted therein, whereby the wire may be inserted when in a taut condition with greater ease and with less danger of breaking the same than would be the case if the lugs 4 and 5 aforesaid were of equivalent constructions.

To insert a wire into one of my insulators, the insulator is first brought into a position with the wire, allowing the same to lie within the lugs 4 and 6 and extending through the hollow also between the lugs 4 and 5. Now after this is done to complete the insertion of the wire the insulator must be turned with reference thereto so that the wire will slide over the slope 10 of the lug 5 until it passes completely over the top of said lug, upon which it falls, or may be easily pressed down under the projecting portion 12 thereof. To aid in this process, the lip 8 on the lug 6 serves to hold the wire in position while it is being stringed over the surface 10 of the lug 5. The insulator of course must not be screwed too tight on the peg when this operation is to be performed, but should be turned with the left hand, while the wire is first pulled with the right hand, as shown in full lines in Fig. 6. The insulator should then be turned until the wire is thrown in the position indicated by dotted lines in Fig. 6, whereupon the wire is held under the lip 8. This being accomplished, the wire is pressed forward and upward over the slope 10 of the lug 5 from the position shown in dotted lines in Fig. 7, whereupon it drops down under the overhanging portion 12 of the lug, as shown in dotted lines in Fig. 7, and the insertion is complete.

By the particular construction of the grasping-lugs 4 and 5 as is herein illustrated and described I attain a much stronger, durable, and more easily operated device of the kind than any heretofore constructed, and I therefore believe it is a substantial advance in the art to which it relates.

What I therefore claim, and desire to secure by Letters Patent, is—

1. In an insulator of the kind described, a body petticoated and adapted to be secured to a peg, the crown thereof, comprised in three projecting lugs, two of the said lugs sloping and overhanging in one direction, and another of the said lugs sloping and overhanging in an opposite direction between the two before mentioned, one of the first-mentioned lugs being lower than the other, substantially as specified.

2. In an insulator of the kind described, the combination with the body thereof, of three dissimilar lugs, two of them of unequal heights sloping in one direction, and an intermediate one sloping in the opposite direction, the intermediate lug provided with an overprojecting lip at a height nearly equal to the thickness of the wire to be insulated above the top surface of the lower one of the other, substantially as specified.

3. In an insulator of the kind described, a trio of lugs having opposed overhanging projections obtruding from the crown thereof, and a course about them through which the wire to be held may be strung, the said course being in general to one side of the center of the crown of the insulator, and two of the said lugs arranged to clasp the wire and hold it into position at a higher level than the top of the other lug, whereby the wire may be more easily inserted under the overhanging projection of the third lug, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

MORTON HARLOE.

Witnesses:

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P. P. SMITH.