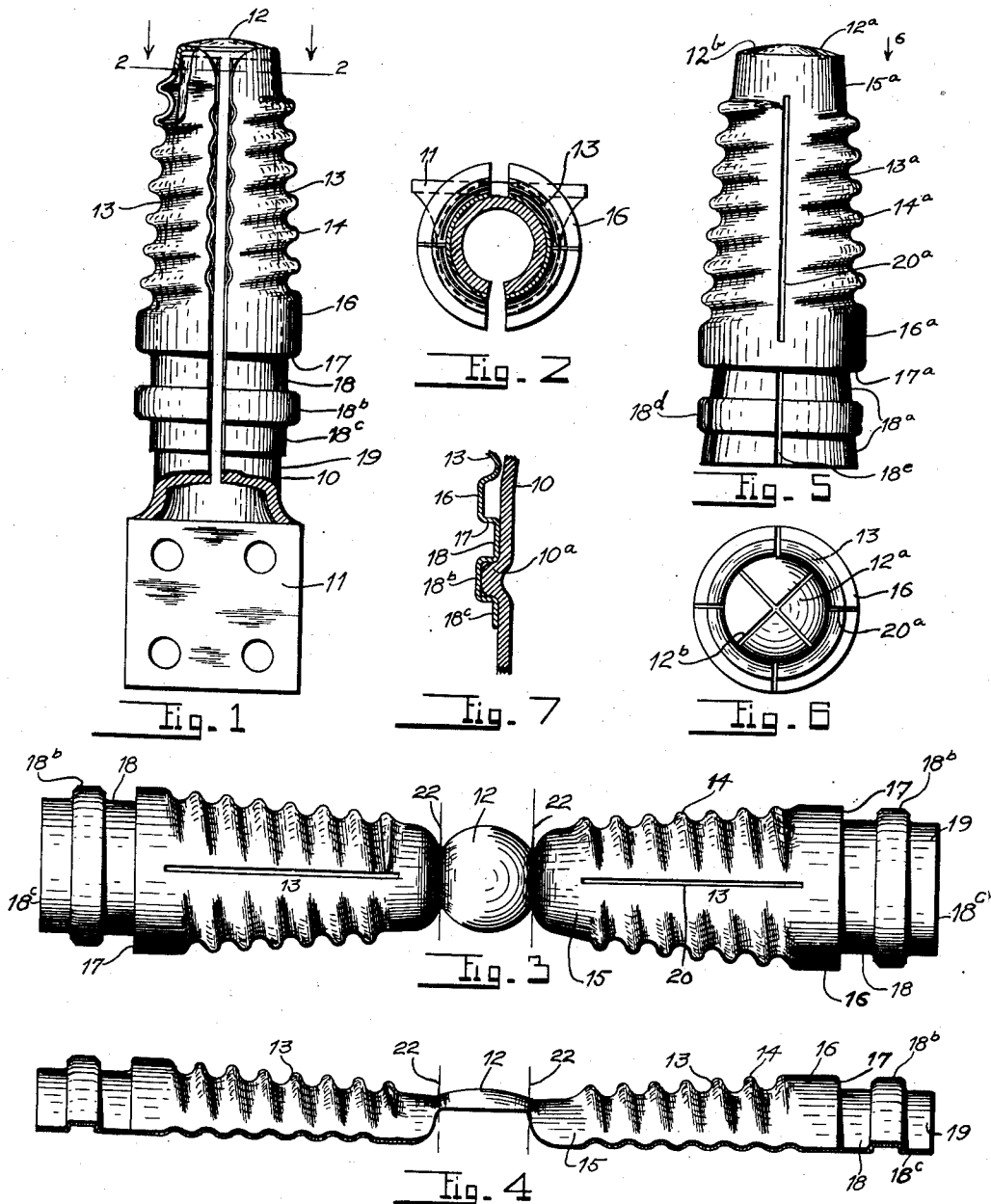


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INSULATOR SUPPORT THIMBLE.
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UNITED STATES PATENT OFFICE.

GEORGE T. SOUTHGATE, OF BROOKLYN, NEW YORK.

INSULATOR-SUPPORT THIMBLE.

1,315,998.

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To all whom it may concern:

Be it known that I, GEORGE T. SOUTHGATE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Insulator-Support Thimbles; and I 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 appertains to make and use the same.

My invention relates to insulator support thimbles. One object of my invention is to produce a metallic thimble capable of being mounted upon a hollow or solid cylindrical pin or upon a pin C-shaped in cross section.

A further object of my invention is to shape the exterior and interior surfaces of said thimble so that the interior surface shall be rigidly supported by said pin when undue stresses are applied to the exterior of said thimble; and so that the exterior surface of said thimble shall at all times fit snugly in the usual screw thread of glass or porcelain insulators.

A further object of my invention is to so shape my improved thimble that very thin metal can be used in its formation. By the use of such metal the elements of the outer surface of said thimble have considerable resiliency, whereby a more perfect fit is obtained between the thimble and the screw threads in said insulators.

A further object of my invention is to provide a large and firm sliding support for the upper end of the thimble upon the body of the pin. By this means I provide that as the body of the thimble is compressed to varying degrees, owing to the irregularity of the screw threads on the interior of said insulators, that the upper end of the thimble is guided by the pin but is free to move up or down. This provision also allows for variations due to thermal expansion and contraction.

A further object of my invention is to provide a resilient top for my improved thimble which will insure a resilient contact of the same with the top of the threaded hole in the insulator, thus avoiding any excessive mechanical stresses should excessive force be applied to the insulator when it is

screwed upon the thimble, and also insuring that the outer surface of the thimble will be forced into firmer contact with the threads in said insulators.

A further object of my invention is to provide such a thimble capable of being formed from a single piece of metal by the factory operations of blanking and forming, and the field operations of mounting the thimble upon a pin and securing it thereto.

A further object of my invention is to provide a thimble that can be readily galvanized after the forming operation is completed whereby the absence of cracks in the zinc coating is insured.

In the drawings—

Figure 1— is an elevation of my improved thimble as applied to a C-shaped pin, the lower portion of said pin being shaped into the form of a bracket for direct attachment to a pole or building.

Fig. 2— is a cross section along the line 2—2 of the parts shown in Fig. 1 looking in the direction of the arrows.

Figs. 3 and 4— are respectively plan and side views of my improved thimble shown in Figs. 1 and 2 before the same is bent into an approximately U-shape.

Fig. 5— is a side view of a variation of my improved thimble.

Fig. 6— is a view of the thimble shown in Fig. 5 looking in the direction of the arrow 6 in said figure.

Fig. 7— is a fragmentary view showing the means by which the thimble is secured to the pin.

In the drawings, 10 is a pin which may be formed of sheet metal, C-shaped in cross section as shown in Figs. 1 and 2 and provided with a bracket 11 formed integrally therewith for the purpose of securing the pin to a pole or building.

The pin 10 may be formed of a tube, or it may be solid, the requisites being that the outer surface thereof shall be approximately cylindrical at its lower portion and the right frustum of a cone at its upper portion. The pin 10 is formed with a bead 10^a for a purpose hereinafter described.

In forming my improved thimble I provide a blank of the proper profile, formed out of thin sheet metal which may have any

desired chemical constitution and physical characteristics to suit the work for which the thimble is to be employed.

After the blank is cut, I then form the blank into the shape shown in Figs. 3 and 4, wherein 12 is a portion shaped approximately to the surface of a sphere and on each side thereof two exactly similar threaded portions 13—13 are provided.

Each of the portions 13—13 is provided with a plurality of screw threads 14, said threads having such relative sizes that when the thimble is mounted upon the pin, as hereinafter described, said threads fit the threads in the interior of the insulator in which it is to be used.

Between each threaded portion 13 and the spherical portion 12, there is provided a portion 15 forming approximately the frustum of a cone for a purpose hereinafter explained.

Each threaded portion 13 has formed on its outer end a cylindrical portion 16 which terminates in a flange 17. A second cylindrical portion 18 extends outwardly from the flange 17. The portion 18 is joined to the bead 18^b and a third cylindrical portion 18^c is joined to the bead 18^b. The threaded portions 13 are provided with slots such as 20 in order to increase the resiliency of the screw threads 14.

After the blank for my improved thimble has been formed as just described, it is to be bent along the lines 22—22, see Figs. 3 and 4, until the inner surface of the cylindrical portions 18—18 and 18^c—18^c are in position to closely embrace the correspondingly shaped portion of the pin 10.

The bending just described can be performed either in the factory or in the field when the thimble is to be applied to the pin 10, but in any case after the thimble is mounted upon the pin 10, the inside surface of the bead 18^b fits closely around the outside surface of the bead 10^a on the pin 10.

The inner surface of the portion 15 of the thimble will bear upon the upper cone shaped portion of the pin 10, and the inside of the threads 14 will be just out of contact with the conical portion of said pin. By reference to Fig. 1 it will also be noted that the top 12 of my improved thimble will be above the top of the pin 10.

If now an insulator is screwed upon the threads 14, the same will be free to compress and the slots 20 will insure that the two sections of each half portion of my improved thimble can be moved independently of each other, hence it is evident that the threads 14 will produce a yielding pressure upon the threads of the insulator, thus insuring that the same can be securely mounted upon the thimble and obviating any danger of the insulator being broken during this operation.

It is evident that when the insulator is screwed upon the threads 14, that the interaction of the beads 10^a and 18^b will prevent longitudinal movement of the thimble on said pin.

Should the insulator be screwed down extremely hard the top 12 of my improved thimble will strike the end of the hole in the insulator and will give slightly. At the same time owing to its spherical top and the connection of said top with the portions 15 of my improved thimble, said portions 15 and the adjacent threads 14 will be forced outwardly and the latter will securely grip the threaded portion of the insulator.

During changes of temperature it is evident that the head 12 can be moved upwardly or downwardly without any undue stress owing to the fact that it is not secured to the pin 10. Should undue stress come upon the spans of wire attached to the insulator mounted upon my improved thimble, the threaded portion 13 will move slightly sidewise until the interior portion of the threads 14 come into firm contact with the pin 10.

In the variation of my improved thimble shown in Figs. 5 and 6, I form said thimble from either a tube or a plate by a pressing, rolling or spinning process. The top 12^a of said thimble is formed by bending the end over. I also provide a plurality of slots such as 12^b in said end. The body portion 13^a is provided with threads 14^a in all respects similar to the threads 14 shown in Fig. 1.

There is also a portion 15^a forming the frustum of a cone and extending between the portion 13^a and the top 12^a. The cylindrical, or frusto-conical portion 16^a is formed on the lower end of the portion 13^a. Said cylindrical or frusto-conical portion terminates in a flange 17^a and a cylindrical, or frusto-conical portion 18^a provided with a bead 18^d is joined with the flange 17^a. Four slots 20^a are provided in the portion 13^a for the purpose of rendering the threads 14^a resilient. A plurality of slots, such as 18^e are provided in the frusto-conical portion 18^a.

The thimble shown in Figs. 5 and 6 is mounted upon a pin similar to 10 in the same manner as the thimble shown in the other figures and its mode of operation is similar to the mode of operation of said thimble, excepting that when the thimble is applied to the pin the slots 18^e permit the frusto-conical portion 18^a to spring outwardly so that the bead 18^d may embrace the bead 10^a of the pin.

What I claim is:—

1. A metallic thimble formed of a single piece of sheet metal, and provided with a threaded portion, an upper tapering portion, a curved top, a lower cylindrical por-

tion and slots in said threaded, tapering and cylindrical portions, in combination with a pin having a tapering end embraced by said tapering portion and a cylindrical body embraced by the cylindrical portion of said thimble.

2. A metallic thimble formed of a single piece of sheet metal, and provided with a threaded portion, an upper tapering portion, a curved top, and with a lower cylindrical portion provided with a bead, in com-

bination with a pin having a bead embraced by the bead on said thimble.

3. The combination with a pin, of a metallic thimble formed of diametrically opposed portions joined together at their tops and separated at their bottoms, said portions being secured at their bottoms to said pin and having a sliding bearing thereon near their tops.

In testimony whereof I affix my signature.
GEO. T. SOUTHGATE.