

C. C. BLAKE.

INSULATED SUPPORT FOR ELECTRIC CONDUCTORS.

(Application filed May 18, 1900.)

(No Model.)

Fig. 3.

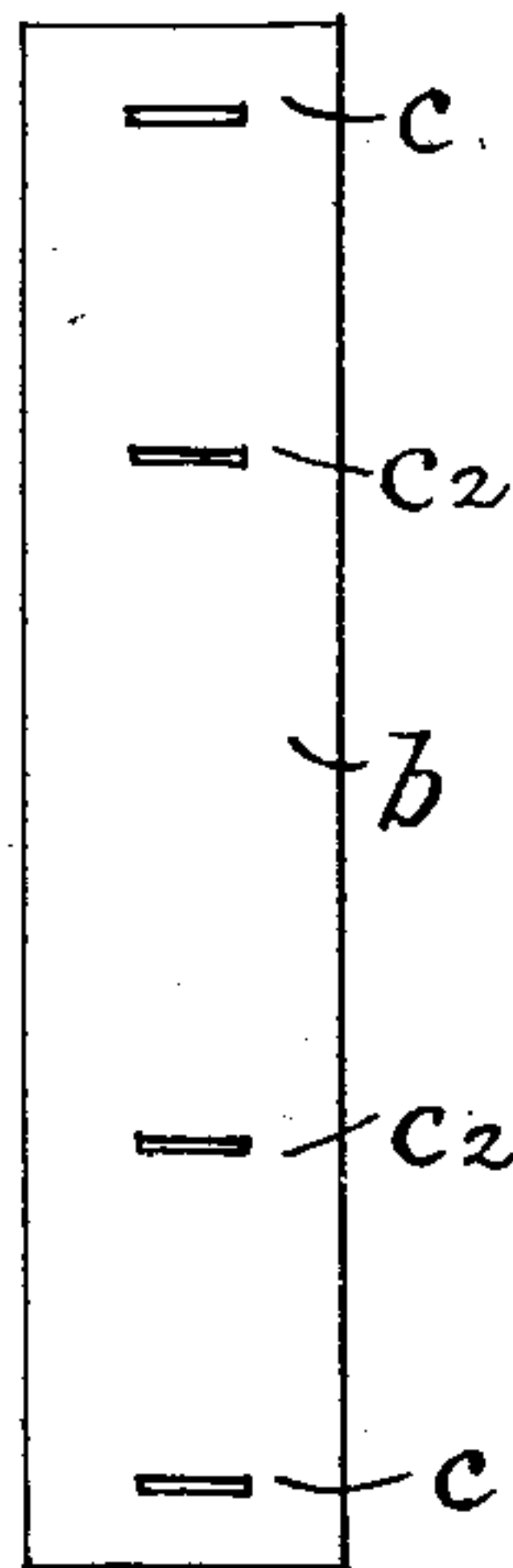


Fig. 1.

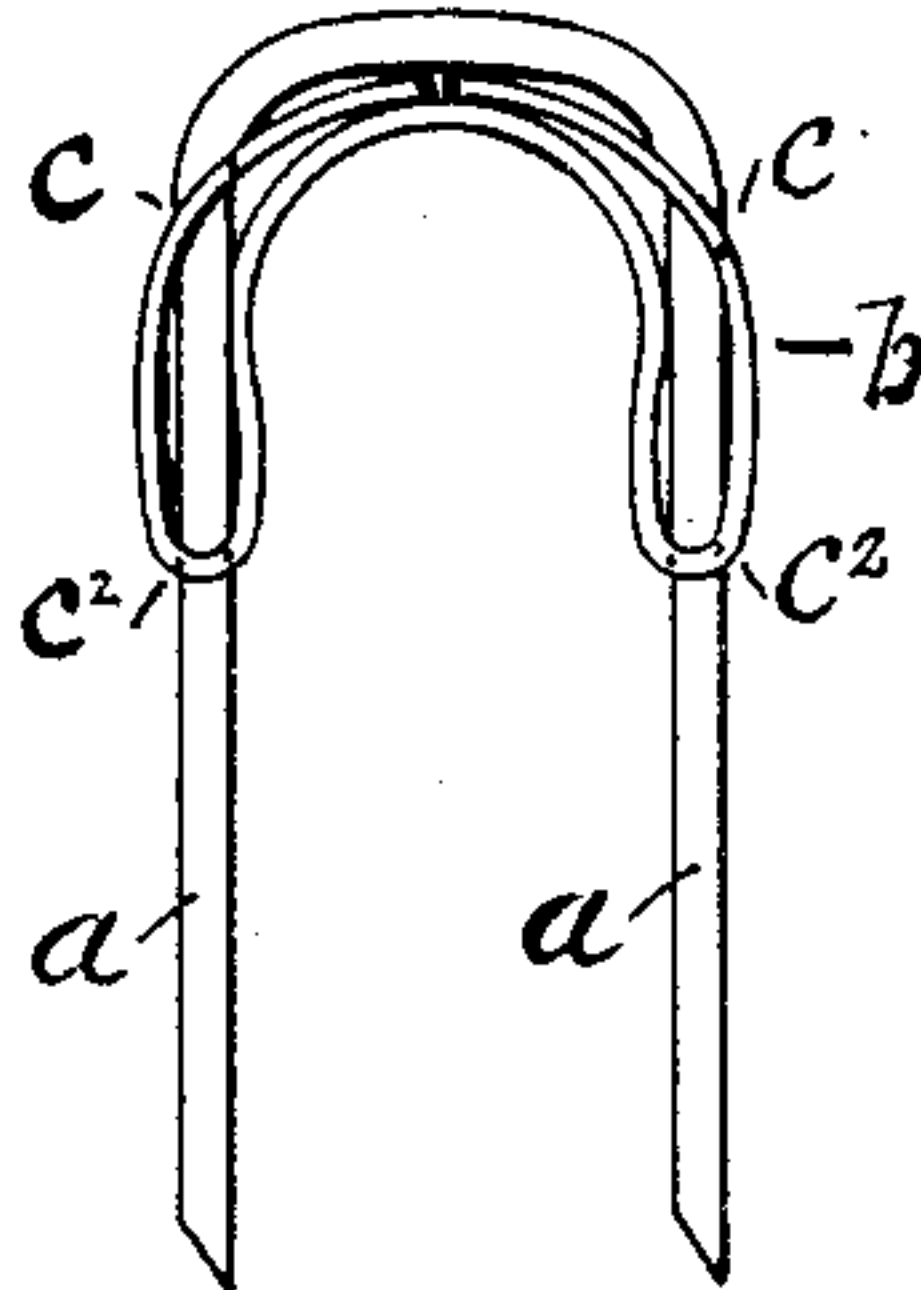


Fig. 2.

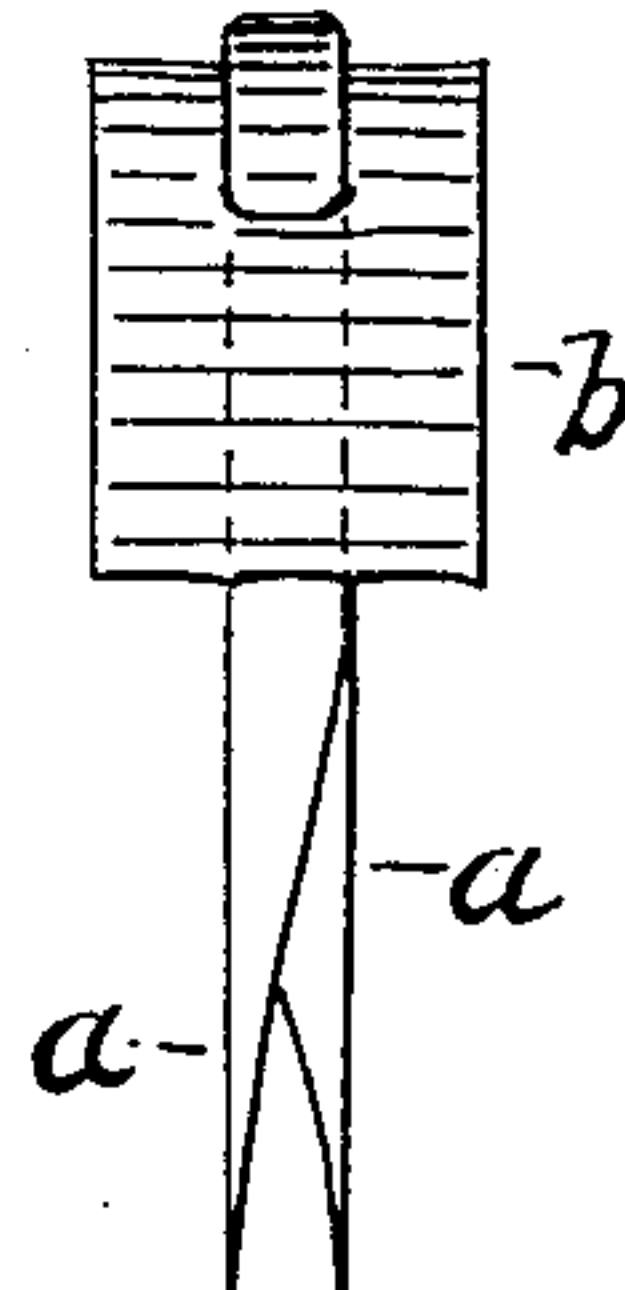


Fig. 4.

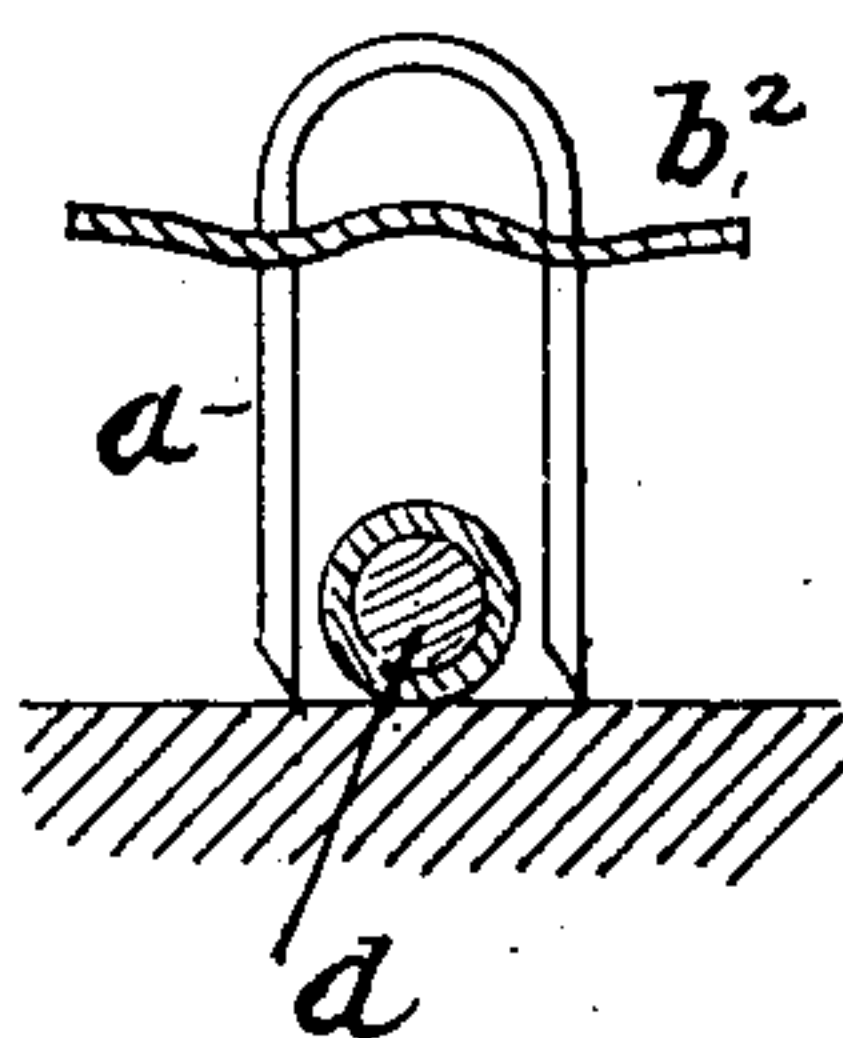


Fig. 5.

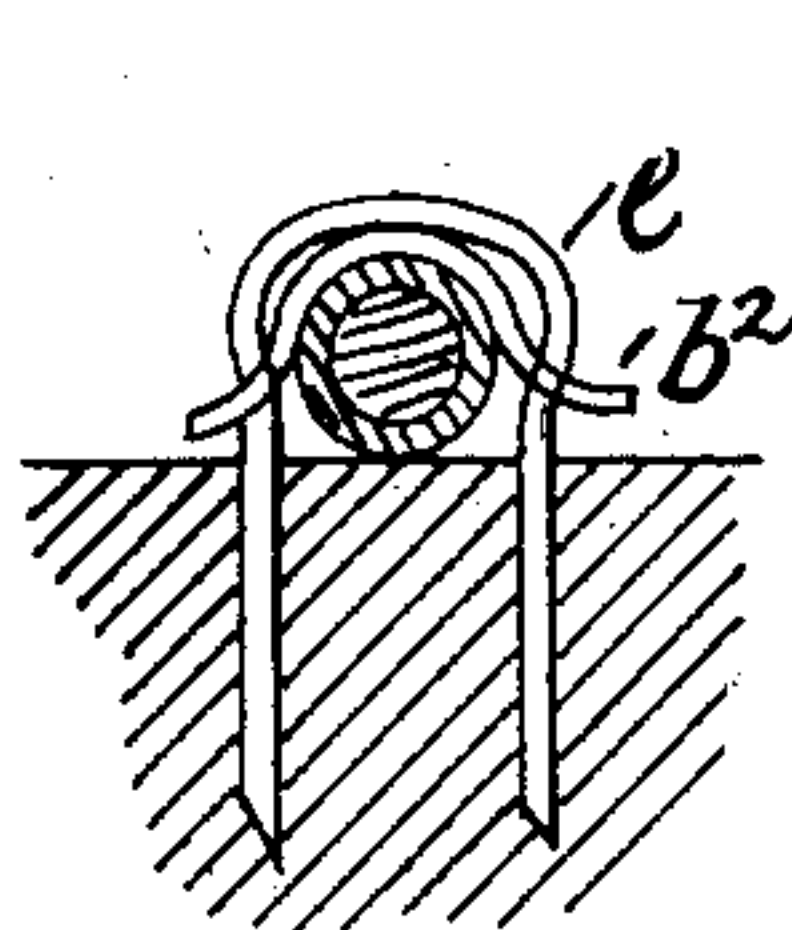


Fig. 8.

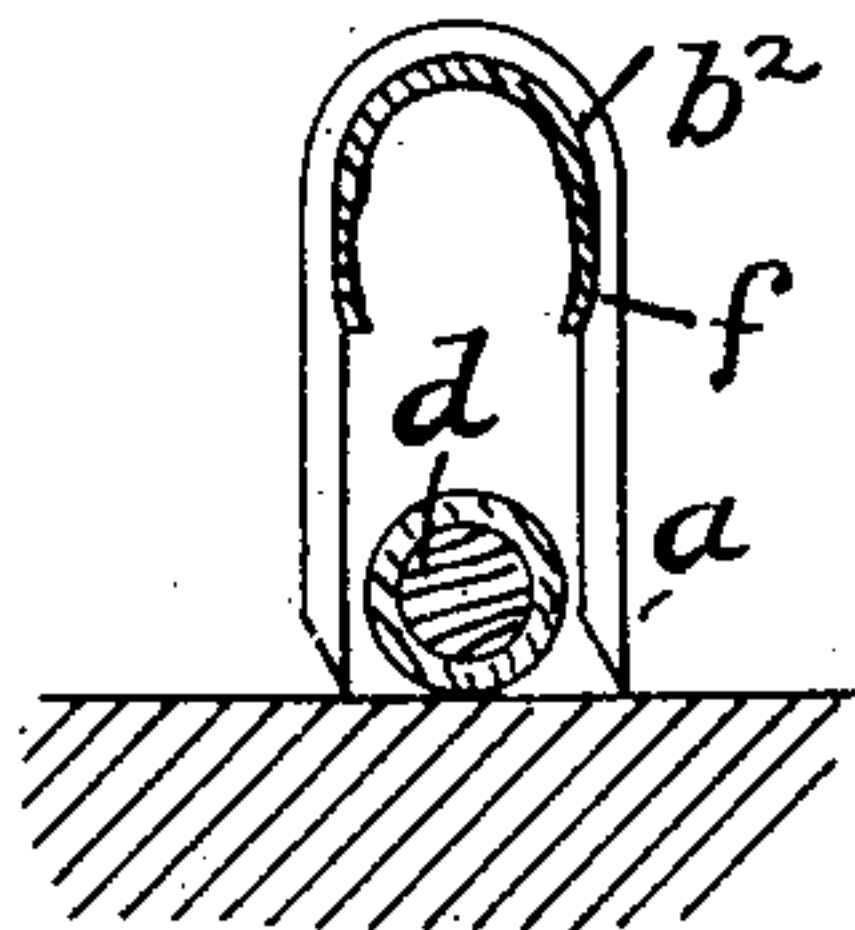


Fig. 9.

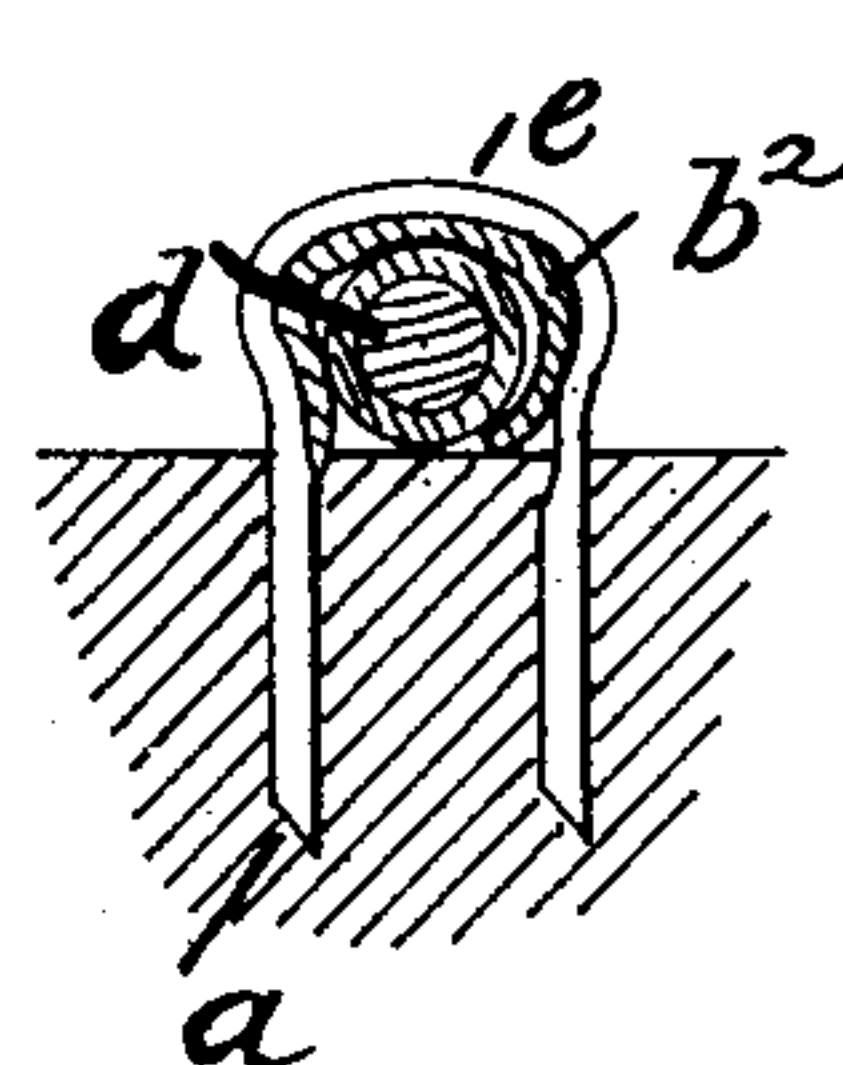
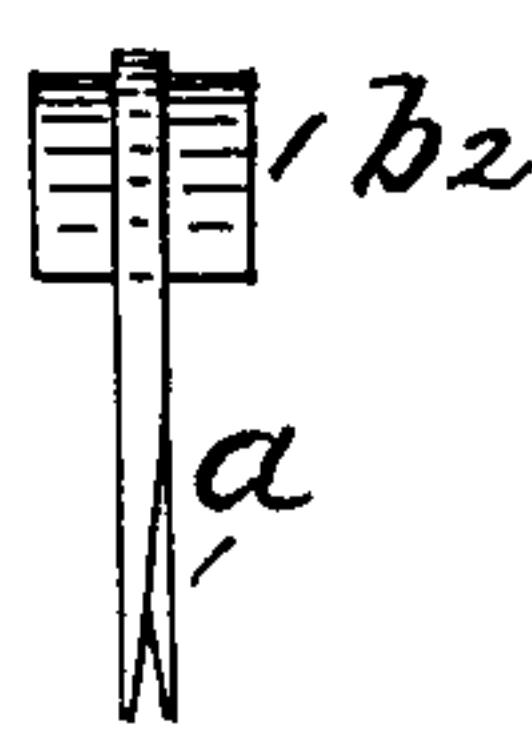


Fig. 6.



Fig. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES CHANDLER BLAKE, OF PORTSMOUTH, NEW HAMPSHIRE.

INSULATED SUPPORT FOR ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 662,587, dated November 27, 1900.

Application filed May 18, 1900. Serial No. 17,136. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CHANDLER BLAKE, residing at Portsmouth, in the State of New Hampshire, have invented certain
5 Improvements in Insulated Supports for Electric Conductors, of which the following is a specification.

The present invention relates to insulating means for supporting electric conductors on
10 a wall or other surface; and it consists of a double-pointed metal staple provided with an insulating-lining for its inner upper surface and sides, secured to the prongs of the staple by frictional pressure.

15 Formerly conductors were held to supports by bare double tacks or staples; but it was found that when driven in too far the insulation of the conductor was often cut, so that a short circuit was made when two or more
20 conductors were under one staple or a ground was introduced when one conductor was under the same. Consequently it became the practice to wind tape around the conductor where the staple was to be driven to further
25 protect the same, or the upper part of the staple was protected by a winding of tape, or a piece of tape was introduced between the conductor and the head of the staple. There
30 have been in use various kinds of devices for the further protection of the conductor. For instance, there has been furnished the trade a button of some insulating material of a
35 general cylindrical form with tapered, conical, or squared ends, one side of which is cut away or made flat, with a cavity extending in from the flat side the entire length of the button to receive the wire. A channel or
40 groove is made in the cylindrical exterior portion of the button midway its length, which is adapted to receive the staple, and when the device is to be secured over a conductor a special tool is used which fits the
45 curved top of the staple and blows are applied to its end. The insulating-button is secured to the inner end of the staple by frictional pressure. In other words, it was forced there-
50 into. Other means for supporting conductors on surfaces are in use, such as a stout metal staple provided with shoulders at the springing of the inner curve of the head, combined with a short piece of thin insulating material just long enough so that its ends

will be braced between the opposite shoulders, while its body is pressed against the said inner curve. To assist the insulating-
55 piece to be retained in position, it is cemented to the staple, or a coat of japan is applied to the staple and the said piece, which forms a thin uniting-covering. All of the devices
60 that I have mentioned are defective, as the insulating-button of one will not stay in place, and the insulating-pieces of another become detached when shaken up with others in the
65 containing-package furnished the trade; but more especially do they prove defective, even while the insulating buttons and pieces remain in position, when the staple is driven
70 into the support, as in all the devices I have mentioned or am aware of the staples are made with half-round heads, and when driven
75 into moderately hard wood the heads are flattened and distorted, so much so that the buttons and pieces do not remain in place and frequently are forced out altogether before the head of the staple reaches the conductor. The present invention aims to avoid
these troubles and failures and consists in the following means.

Of the drawings Figures 1, 2, and 3 illustrate the invention, being respectively a side
80 and end view of the device assembled and of the insulation-strip developed or spread out, while by Figs. 4, 5, 6, 7, 8, and 9 I have endeavored to illustrate the features in devices
85 of this character which I aim to avoid. Figs. 1, 2, and 3 are three times natural size, and the remaining figures are twice natural size. Figs. 4 and 5 are side views of staples *a* with half-round heads. *b* is an insulated conductor, and
90 *b'* a piece of insulation through which the prongs of the staple are pressed, this being an ordinary means used. The latter figure shows how the round head becomes distorted
95 when the staple is driven into hard wood, and the prongs of the staple do not afford adequate support to the conductor. Figs. 6 and 7 represent a side and edge view of a device
100 consisting of a round-headed staple and an insulating-button adapted to surround a wire, the button having a groove in its top for the reception of the staple-head. The button is supported by friction, it being forced into place. When driven in by a special tool fitting the curved head, there is no crippling of

the head; but when the hammer is applied to the head the same will be distorted, as shown by Fig. 5. Figs. 8 and 9 show a stout staple, with shoulders f at the springing of the circle 5 of the head, and b^2 is a piece of insulation just long enough so that its ends are supported by the shoulders, while its surface is pressed to the inner part of the head. Fig. 9 shows the effect of driving the staple with 10 a hammer into hard wood. The head becomes distorted, as also does the insulation b^2 , and the latter frequently flies out altogether.

In carrying out my invention I provide a staple with a substantially flat head, the 15 curves at the upper corners being very short and abrupt, and it may be any of the suitable staples provided to the trade. The insulation is made of comparatively long narrow and thin strips of any suitable insulating material, such as the ordinary tan-colored fiber. 20 At proper distances from each end two slits c and c^2 are cut through the same. The ends are then brought to the center to form a loop and touch each other, and the prongs of the 25 staple are forced through the slits c into the space between the two end loops and then out through the slits c^2 , and the middle of the insulation presses against the inner surface of the staple-head as a cushion, as shown in the 30 figures. This is done when the strip b is moist and flexible, and when it becomes dry and resilient the slits c and c^2 close tightly upon the surfaces of the prongs, and the strip is only removed by the application of consider- 35 able force.

I have only roughly indicated how the strip is strung upon the staple, as practically the operation is performed by a machine.

It will be seen that by this construction very 40 efficient protection is furnished to even a bare conductor, as when applied to one of the proper diameter the end loops of insulation extend over not only the sides to the faces of

the support into which the staple is driven, but over the top also, with a double thick- 45 ness, while the outer or end flat surface of the staple is left bare to receive the blows of a hammer, which do not distort the staple nor dislodge the insulation.

I claim as my invention—

1. An insulating device for supporting con- 50 ductors, consisting of a staple with a flat head; with an insulating-strip covering the inner and outer surfaces of the upper part of the prongs with one thickness and the inner sur- 55 face of the head with two thicknesses, the same being held to the surfaces of the staple by frictional pressure.

2. An insulating device for supporting con- 60 ductors, consisting of a staple with a flat head; with an insulating-strip covering the inner and outer surfaces of the upper part of the prongs with one thickness and the inner sur- face of the head with two thicknesses all of 65 which project from each side of the said staple, the same being held to the surfaces of the staple by frictional pressure.

3. Means for supporting electric conductors consisting of a double-pointed tack or staple 70 having a substantially flat head, with an insulating-cushion composed of a comparatively long narrow and thin strip bent into a loop, and having four perforations or slits, each of the prongs of the staple projecting through 75 two of said slits, the center and the two ends of the strip meeting under the head of the staple, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 15th day of 80 May, 1900.

CHAS. CHANDLER BLAKE.

Witnesses:

GEO. WILLIS PIERCE,
JOSEPH A. GATELY.