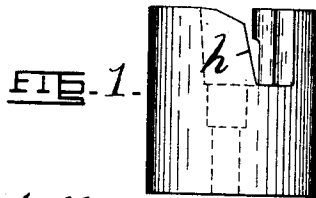
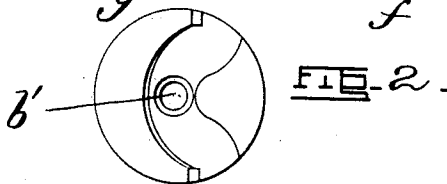
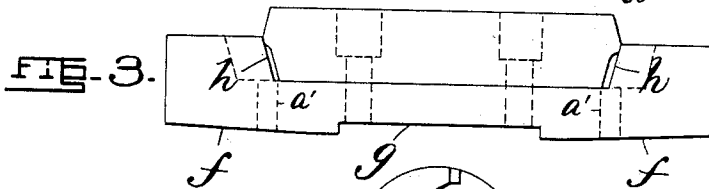
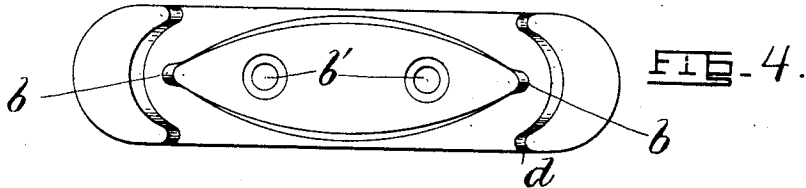
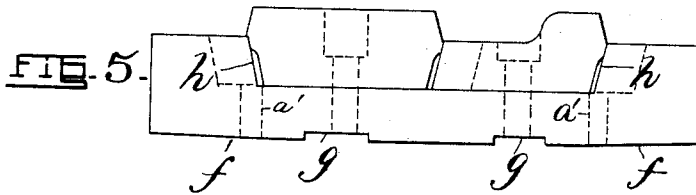
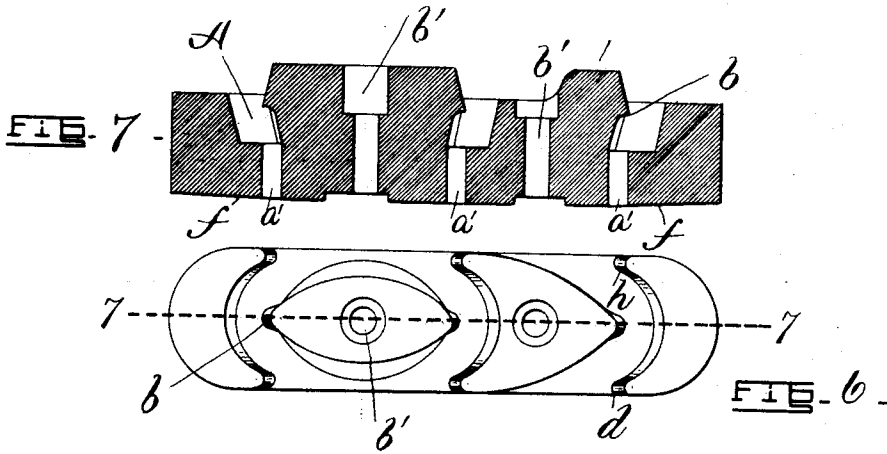


(No Model.)

C. N. HAMMOND.
INSULATOR.

No. 511,612.

Patented Dec. 26, 1893.



Witnesses—

Arthur F. Randall,
Robert Wallace.

Inventor—

Charles N. Hammond,
by Macleod Calver & Randall,
his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES N. HAMMOND, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
HAMMOND CLEAT AND INSULATOR COMPANY, OF SAME PLACE.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 511,612, dated December 26, 1893.

Application filed April 12, 1893. Serial No. 470,019. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. HAMMOND, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Insulators, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide an improved insulator for electric wires.

My invention relates more particularly to insulators for indoor construction such as are employed in supporting and insulating the wires which are carried through buildings and the like. It is desirable that insulators employed for this purpose should be of high insulative quality, should be strong and durable, and of tasteful appearance and they should be so constructed that the wires may be readily placed therein or removed therefrom. These objects I attain by means of the insulator hereinafter more fully described and the novel features of which are pointed out in the claims which are appended hereto.

I have shown my improved device in the accompanying drawings, and will refer to said drawings in the following description.

In the drawings, Figures 1 and 2 are respectively a side view and plan of my insulator adapted to receive one wire. Figs. 3 and 4 are similar views of a two wire insulator, and Figs. 5 and 6 are similar views of a three wire insulator, all embodying my invention. Fig. 7 is a section on line 7—7 Fig. 6.

The insulator may be made of any suitable insulating material. I prefer, however, to make it from porcelain which is first molded to shape and then baked or fired in the well-known manner.

The exterior shape or contour of the insulator is not essential. I prefer, however, the general shape shown in the drawings which, as will be obvious, will vary somewhat as the size of the insulator varies, and its capacity to carry one, two or more wires. The opening to receive the wire is shown at A, said opening being curved and formed by two slightly tapering or inclined walls, so that the top of the opening which first receives the wire, when it is put in place, is somewhat wider than the bottom thereof. This facilitates the insertion

of the wire. The retaining point *b* which forms one side of the opening A is provided with an over-hang so that when the wire is pushed into the opening A to the bottom of the same it may be straightened partially, lying in part under the over-hang *b* and is thus prevented from being accidentally displaced. The wire can only be withdrawn from the insulator by bending it somewhat and then lifting it out of the opening A.

In order to provide for the making of the over-hang at the point *b* the body of the insulator underneath said point is provided with an aperture *a'* see Fig. 7, through which a post or upright of the mold may pass, to serve as a support upon which the material of the over-hang may be molded when the insulator is being formed. By this arrangement the body of the insulator is not weakened to any material extent by the opening for the projection from the mold, as is the case when the over-hang is on the opposite wall of the opening A at the point marked *c*. In the latter case, the openings for the posts or uprights of the mold upon which the over-hang rests while it is being formed are at the outside of the insulator and on either side thereof and these openings I have found materially weaken the insulator and in case it is slightly warped in baking have a tendency to cause it to break transversely when it is being screwed firmly into position on the wall. By the employment of a central over-hang equal efficiency is obtained, sharp corners are avoided which tend to wear the wire covering and the strength of the body of the insulator is not impaired. It will be noted that the curved wall of one side of the opening A is of less height than the wall on the opposite side and this facilitates the insertion of the wire.

The insulator is secured in place by one or more screws which pass vertically through it and for the reception of which holes *b'* are provided as shown.

In the manufacture of these insulators from material such as porcelain for example, which requires to be baked or fired the process of firing tends to cause the material to warp so that it frequently happens that the back or bottom of the insulator is not perfectly level or flat but is bowed up somewhat in the

middle. In such case when the insulator is placed against the wall it will bear on the wall only at the ends and the screwing home of the securing screws will crack the insulator cross-wise. It is desirable that the back or bottom of the insulator should not bear on the wall at the ends to any greater degree than throughout the central portions, and unless it is absolutely flat, a condition which is difficult to obtain, it should bear rather more at the points where the screws pass through it so that there will be no danger of bringing the pressure of the screws on the insulator in such a way as to cause it to break. To provide for this I bevel the bottom of the insulator at the ends slightly as shown at *f* and the central portion of the insulator between the end parts *f* may be slightly cut away, if desired, as shown at *g*. The insulator is strong enough throughout this central portion to permit of its being somewhat cut away as shown and the cutting away saves a slight amount of stock. It will be noted that the ends of the walls on one side of the openings *a* are slightly inclined as shown at *h* in the same way as is the wall itself throughout its whole extent but the incline is somewhat greater at the ends. This is an advantage in the insertion of the wire and tends to prevent its covering being frayed or damaged by inserting it in or withdrawing it from the insulator.

What I claim is—

1. An insulator for electric wires having

one or more openings to receive the wire, said openings being curved and having a single over-hang on one side thereof, substantially as and for the purposes set forth. 35

2. An insulator for electric wires having one or more openings to receive the wire, said openings being curved and having a single over-hang on one side thereof, the walls of said openings being beveled, substantially as and for the purposes set forth. 40

3. An insulator for electric wires having one or more openings to receive the wire, said openings having an over-hang on one side thereof located over the central portion or body of the insulator whereby the aperture for that portion of the mold which supports the over-hang in molding is in the central portion of the body of the insulator, substantially as and for the purposes set forth. 45

4. An insulator for electric wires having one or more openings to receive the wire and having the bottom thereof beveled at either end whereby the central portions of the insulator will come to a bearing on its support when the insulator is secured in position before the end portions thereof, substantially as and for the purposes set forth. 50 55 60

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

CHARLES N. HAMMOND.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.