

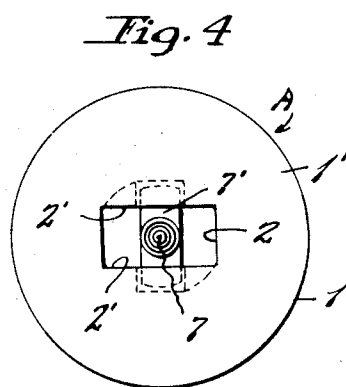
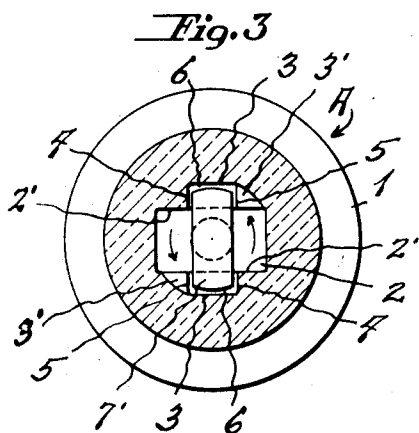
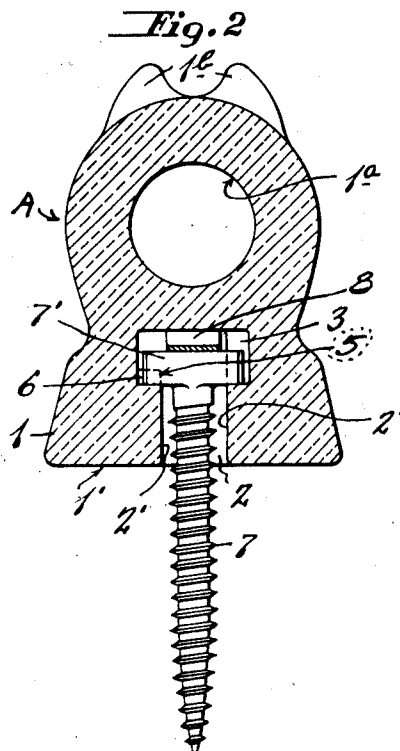
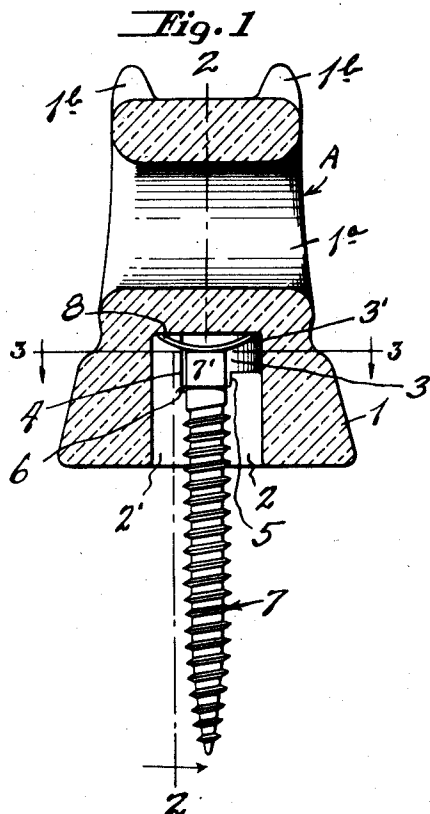
Sept. 15, 1942.

L. A. STOHL

2,295,872

INSULATOR KNOB

Filed Dec. 21, 1939



By

INVENTOR
Ludwig A. Stohl
Roy M. Eilers
ATTORNEY

UNITED STATES PATENT OFFICE

2,295,872

INSULATOR KNOB

Ludwig A. Stohl, Sun Prairie, Wis.

Application December 21, 1939, Serial No. 310,313

2 Claims. (Cl. 174-165)

This invention relates to wire-attaching devices of the type used in attaching electrical conductors to houses, buildings, and other supporting structures and which are commonly designated in the trade as wire holders, wire knobs, house knobs, etc. It is an object of the invention to provide a device of this type which is of greatly simplified construction and arrangement, and which because of its improved construction and arrangement is capable of much more convenient use than the types of knobs heretofore available.

Devices of the type disclosed herein ordinarily comprise a body portion formed of porcelain or other suitable electrical insulating material, with which is associated a wood screw adapted to be screwed into a support so as to secure the body portion to the support for the reception of an electrical conductor. Heretofore the wood screws were permanently associated with the body portions through the use of cement, lead, or a sulphur compound which prevented intentional or accidental detachment of the screw from the body portion.

One feature of the present invention is the provision of an attaching screw which is not permanently connected to the body portion of the device in any manner. The body portion of the device may be easily removed from the attaching screw at all times, even though the device is attached to a supporting structure. The construction of the device is such that when said device is in use with a conductor attached thereto, the body portion of the device will not accidentally become detached from the attaching screw.

The elimination of cement, lead, or a compound as a means for permanently associating the attaching screw to the body portion of the device, effects a saving in the production cost of the device, as well as simplifies the task of assembling the device. An important advantage of the separable arrangement of the body portion and attaching screw of the improved device disclosed herein is that the attaching screw may be introduced alone into a support with the aid of a suitable tool to a point just short of its fully inserted position, after which the body portion may be applied to the screw and the entire device rotated to properly seat it with respect to the support. This arrangement removes from the breakable body portion much of the strain incident to using the body portion as a head for screwing the attaching screw into the support, which frequently resulted in the

body portion being broken. Still another important advantage of this device is the ease with which a body portion which is broken in use may be replaced by a new body portion. This is done by merely backing up the screw in use, applying a new body portion thereto, and reseating the device with respect to the support with which it is associated. Thus the necessity to discard the entire original device, including the attaching screw thereof, when the body portion is broken, is eliminated. Further objects and advantages will appear from the following detailed description.

Fig. 1 is a vertical section of the improved device.

Fig. 2 is a vertical section taken approximately along line 2-2 of Fig. 1.

Fig. 3 is a horizontal section taken approximately along the line 3-3 of Fig. 1.

Fig. 4 is an inverted plan view of the device.

In the drawing, wherein is shown for the purpose of illustration, only one embodiment of the invention, A designates the improved device generally. A body portion 1 which may be formed of porcelain or other suitable electrical insulating material may be provided with an opening 1^a and projections 1^b which serve in a well known manner to aid in the attachment of an electrical conductor to the insulator.

Formed in the body portion 1 is an opening 2 which is open at the face 1' at the base of the body portion; in the device shown this opening is of substantially oblong shape (see Fig. 4). The opening 2 may extend inwardly of the body portion 1 a substantial distance, and as shown in Fig. 1, the opening 2, throughout its length, may correspond in width to the longer dimension of the opening as it appears in Fig. 4. In connection with its opposite, or transverse dimension, the opening 2 may be of constant dimension through most of its length, but at the inner end of the opening opposed recesses 3 are formed which communicate with the opening 2 and extend into the body of the insulator. Each recess has a shoulder 4 on one side thereof and a shorter shoulder 5 on the opposite side. Between the shoulders 4 and 5 each recess 3 is provided with a depression 6 (see Figs. 1 and 3). The portion 3' of each recess above the shoulder 5 may be provided with a curved wall which extends from the wall of the recess above the depression 6 to an end wall of the opening 2.

The attaching screw 7 is shown supported in the opening 2 of the body portion. A wood screw type of attaching screw is shown and is provided

with screw threads throughout most of its length although any other desired type of bolt or screw may be used.

The attaching screw may be provided with an elongated head 7'. When the attaching screw is in its normal position with respect to the body portion of the insulator, the opposite end portions of the elongated head 7' are seated in the depressions 6 of the recesses 3 (see Figs. 2 and 3). In this position the opposite end portions of the head of the attaching screw are disposed between the shoulders 4 and 5 of the recesses. In order to retain the attaching screw in this position, an arcuate leaf spring 8 is employed, said leaf spring contacting the top of the opening 2 and the head 7' of the attaching screw. The leaf spring, therefore, exerts an outward force against the attaching screw so as to normally retain the head portions of the attaching screw in their seated position in the depression 6. Any other type of spring or means effective for the same purpose could, of course, be used.

In assembling the attaching screw with the body portion of the device, the body portion is held so that the opening 2 at the face 1' thereof faces upwardly. The leaf spring is then dropped through the opening so that it rests at the top of the opening 2. The head of the attaching screw is then passed through the opening 2 until it contacts with the leaf spring, whereupon said attaching screw is forced an additional distance into the opening 2 to compress the leaf spring 8. The attaching screw is then rotated approximately a quarter of a revolution about its axis in the direction indicated by the arrows in Fig. 3, which will bring the opposite end portions of the head of the attaching screw in alignment with the depressions 6 of the recesses 3. The attaching screw is then released and the leaf spring will move the opposed end portions of the head of the attaching screw into the depressions 6 where they will be confined between the opposed sides of shoulders 4 and 5. When the attaching screw is so attached to the body portion of the device positive engagement between the parts is provided. This is quite different from the arrangement where cement or lead is used to connect the attaching screw to the body portion of such a device, as in such case the cement or lead usually bears the entire strain of keeping the attaching screw in engagement with respect to the body portion.

In applying this device to a house, building, or other support, the device may be assembled as just described and the attaching screw may then be screwed into the support by employing the body portion of the device as a head for rotating the screw, rotary motion of the body portion being transmitted to the attaching screw through the shoulders 4. However, when a house knob is so applied to a support there is always a danger that the strain imposed on the body portion of the device may result in said body portion being broken. It may often be preferable, therefore, in applying the device to a support to screw the at-

taching screw into the support alone with the aid of a suitable tool, and then just before the screw has reached its innermost position, to apply the body portion. The entire device may then be rotated to properly seat the device with respect to the support. In this way much of the strain to which the body portion is subjected when said body portion is used to screw the attaching screw into a support is eliminated. In case the body portion of a device is broken in use the screw of the device may be backed up slightly to permit removal of the broken body portion and a new body portion may be installed after which the device may be resealed with respect to the support. In so using the improved device not only are the screws of broken devices saved but the labor in screwing in an entire new device is eliminated.

It is important to note that the axis of the attaching screw of the improved device is capable of movement with respect to the body portion of the insulator. The advantage of this arrangement being that even though the attaching screw be accidentally introduced into a support at a slight angle to its proper position, the face 1' at the base of the body portion may be drawn into even contact with the support due to the ability of the body portion to adjust itself angularly with respect to the axis of the attaching screw.

While I have shown only one embodiment of my invention, various changes therein will become apparent to those skilled in the art and it is understood that the scope of the invention is not to be limited by this description but is defined by the appended claims.

I claim:

1. An insulator knob comprising a body portion and a screw for securing the knob to a support, the body portion being provided with a rectangular passageway extending a substantial distance therein to and opening through the base thereof, the passageway adjacent its inner end being extended in the formation of laterally opposed recesses, each recess being defined by a curved wall intersecting a plane wall and by angular walls defining a rectangular depression having a base offset from said plane wall, the curved and plane walls of the respective recesses being in advance of the depressions and angularly of the axis of said passageway, the screw having a rectangular head receivable in said passageway to the inner end thereof and movable upon rotation thereof over said plane walls and guided by said curved walls into said depression, and yielding means associated with said body portion and screw and urging said head into and retaining same in said depressions.

2. An insulator knob according to claim 1 wherein said head is of less depth than said recesses and wherein said yieldable means comprises a bowed leaf spring disposed between said head and the inner end at said passageway.

LUDWIG A. STOHL.