J. H. KLIEGL.

CABLE CLAMP.

APPLICATION FILED MAR. 15, 1911.

1,041,300. Patented Oct. 15, 1912.

Fig. 1

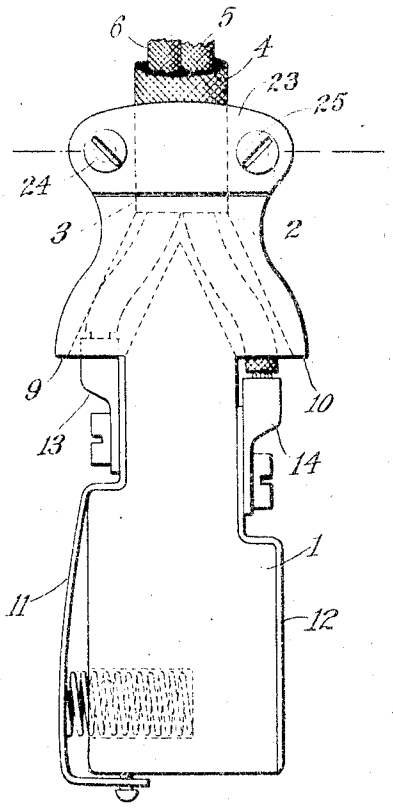


Fig. 2

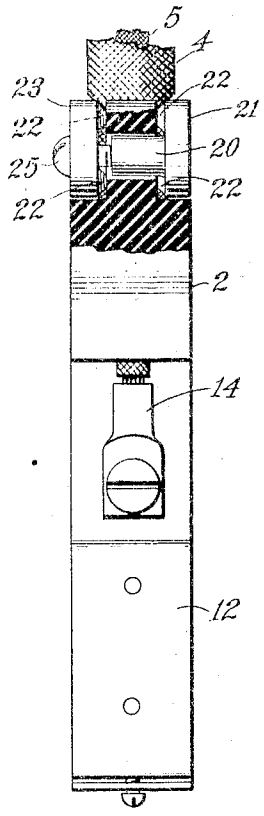


Fig. 3

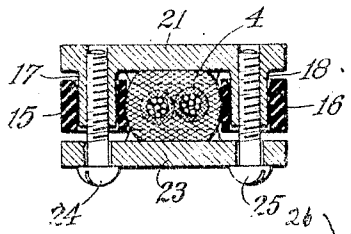


Fig. 4

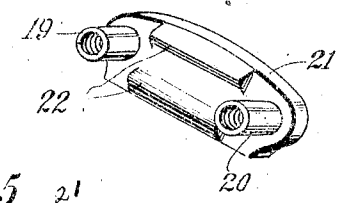
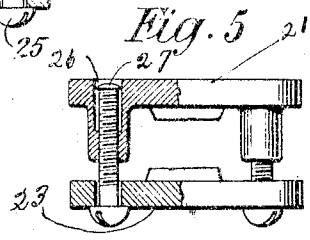


Fig. 5



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CABLE-CLAMP.

1,041,300. Specification of Letters Patent. Patented Oct. 15, 1912.

Application filed March 15, 1911. Serial No. 614,563.

To all whom it may concern:

Be it known that I, JOHN H. KLIEGL, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Cable-Clamps, of which the following is a full, clear, and exact description.

My invention relates to a cable-clamp for plug switches and cut-out plugs, and is essentially an improvement upon and especially designed for the form of plug switch described in my prior patent, No. 963,733, dated July 5, 1910. The clamp is not limited however to such a construction as it is capable of use with other analogous devices such as junction boxes, connector casings, etc.

One object of my invention is to provide a clamp for a plug in which the insulation at the ends of the conductors shall be effectively protected, so as to prevent raveling, undue wear, or other injury thereto.

Another object of my invention is to provide an improved clamp so that the connections of the conductors and contacts shall be relieved substantially of all strain, such for example as might otherwise be exerted on such connections when the cables are grasped and pulled to withdraw the plug from the device into which it has been inserted or where, as in stage connectors, it is promiscuously thrown about in setting up and handling the scenery.

A still further object is to provide a clamp for a cable whereby all strain upon the plug itself in clamping the cable therein is avoided which permits the use of plugs that are fragile in character and incapable of withstanding any degree of strain.

Another, and very important feature or object of my invention is to provide a clamp for devices of this kind which will allow the use of cables of different sizes to be used in the same plug, junction box, etc.

Other objects of my invention are to provide a clamp of this character which shall be simple and compact, and capable of being easily and quickly attached to the cables.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side view of my improved device shown in connection with a plug switch. Fig. 2 is an edge view of Fig. 1 with parts of the plug broken away to show the relation of parts in assembled form. Fig. 3 is a section on line A—A of Fig. 1. Fig. 4 is a detail. Fig. 5 shows a modified form of clamp.

Referring to the drawing in detail 1 designates the body of a plug in connection with which I have chosen to represent my device, said plug being made of the usual insulating material. The body 1 has a head 2 preferably integral therewith and of the same material, the body and the head being substantially of rectangular cross-section. In the top or head 2 is an aperture or socket 3 large enough to receive the end of the conductor to which the plug is attached, in the present instance a cable 4, containing two conductors, 5 and 6. The insulation at the end of the cable is inclosed, as will more fully appear later, in the top of the plug and so protected from raveling or other injury.

Extending downwardly and laterally from the socket 3 are passages 7, 8 opening preferably at the shoulders 9 and 10 at the base of the top or head portion. The conductors 5 and 6 are received by these passages and when inserted through these passages they are connected to the contacts 11 and 12 through the instrumentality of the socketed terminal members 13 and 14 as shown. Preferably the passages are made large enough to permit the terminal members to be passed therethrough from the socket 3, so that the terminal members may be attached to their conductors first, and the latter then inserted into the plugs through said passages.

For the purpose of binding the cable firmly in the socket 3 to eliminate all strain upon the conductors 5 and 6 below the socket as well as the terminal members and contacts the upper portion of the head is cut away on both sides a sufficient depth to expose the cable in the socket, the socket, as understood, being large enough to receive the maximum size of the cable to be used with the particular form of plug. By cutting away both sides of the top, as shown, there results a head having two upward protruding members or projections 15 and 16. These protruding members are perforated as shown at 17 and 18 adapted to receive internally screw-threaded extensions or members 19 and 20 on clamp 21. This

clamp is provided with suitable clamping ribs 22 which bite into the cable when the clamping is being perfected. A corresponding clamp 23 is located on the opposite side provided with male members 24 and 25 adapted to engage the internal screw-threads or members 19 and 20. It is obvious that the cable could be clamped without the use of the internally screw-threaded members but their use not only makes the clamp a more efficient one theoretically but also from a practical and commercial point of view. By their use it will be noted that whether a large or small cable be used the male members 24 and 25 never project beyond the clamping member 21 and with the same male members a larger cable can be clamped, the said members then engaging with the threads of the extensions. In addition to the above advantages it will be observed that the extensions facilitate the assembling of the clamping members 21 and 23.

The ribs 22 on the respective clamps may be of any desired size or shape. To obtain the best results however the length of said ribs should be slightly less than the distance between the protruding members 15 and 16 so as to effectively clamp a small cable, for instance, a cable whose diameter is equal to or is less than the thickness of the protruding members or projections 15 and 16. See Fig. 3 for this construction.

It will be observed from the foregoing that many advantages are obtained by this invention which, so far as I am aware, have never been touched upon before. All clamps for a similar purpose which have been evolved heretofore are incapable of clamping more than one size of cable. With this device, in its preferred form, three sizes can be clamped. For instance cables whose sizes range from No. 6 to No. 14 can be clamped to the plug, it being understood, as before stated, that the socket 3 is made for the maximum size of cable to be used. If a larger number of cable is to be used, it will be known by all electricians, that it is then necessary to use a larger plug, and, *e converso*, if a smaller cable is to be used than those above mentioned a smaller plug should also be used. However the device shown and described is capable of clamping the smallest known cable for then it is only necessary to so enlarge the ribs on the clamps that when the latter are assembled the distance between the respective ribs will be less than the diameter of the cable. Again when it is desired to use a larger cable (if the socket 3 will permit it) it will only be necessary to lengthen the screws 24 and 25.

It will also be apparent from the foregoing that the cable can be clamped as tight as desired between the clamping members 21 and 23 without putting any strain upon the insulating material. At most there will be nothing more than a longitudinal pull upon the projections 15 and 16. For this reason a less tenacious and a less expensive insulating substance can be used without any danger of splitting or rupturing the same.

The device herein specifically described, as before stated, is capable of being used in other relations and is not limited in its field of usefulness to a switch plug. Moreover the specific device herein described is merely the preferred embodiment of my invention, and may be embodied in various other specific forms without departure from its proper scope as defined in the following claims.

In Fig. 5 a slight modification of clamp 21 is shown. Sockets 26 (only one shown) are provided therein for the purpose of receiving the riveted heads 27 (only one shown) so as to prevent the removal of parts and consequent loss of the same.

What I claim is:

1. In a cable clamp a member provided with a socket therein adapted to receive a cable, means projecting outwardly therefrom, clamping members for the cable mounted on the opposite sides of the projecting means and means on the clamping members coöperating with said projecting means for clamping the cable within said member.

2. A cable clamp for plug switches and the like, in combination, a portion of said plug having a socket therein said socket having open sides and protruding edges, binding plates extending across the open sides, and means coöperating with the protruding edges and acting upon the clamps to bind the cable.

3. In a cable clamp, in combination, a body having in its end a socket adapted to receive an insulated cable, said socket having open sides, releasable binding plates extending across the open sides, protruding members located between the clamps having perforations therein, and means passing through said perforations and adapted to bind the clamping members upon the cable.

4. In a cable clamp, a member provided with a socket therein adapted to receive a cable, edges protruding outwardly from said socket, clamping members mounted on the opposite sides of the protruding edges, and means coöperating with said edges for clamping the cable.

5. In a cable clamp, in combination, a member provided with a socket therein adapted to receive a cable, protruding edges having perforations therein, clamping members mounted on the opposite sides of the protruding edges, and means on said clamping members extending through said perforations for clamping said cable.

6. In a cable clamp, in combination, a

member provided with a socket therein adapted to receive a cable, said socket provided with open sides and projecting edges having perforations therein, a ribbed clamping member mounted in one of the side openings and having internally screw-threaded extensions entering the perforations in the projecting edges, a ribbed clamping member mounted in the other side opening, and having male members extending therethrough and engaging the screw-threads of the extensions whereby the cable is clamped in the socket.

7. In a cable clamp, in combination, a member provided with a socket therein adapted to receive a cable, said socket provided with open sides and projecting edges having perforations therein, a ribbed clamping member mounted in one of the side openings and having extensions entering the perforations, perforations extending through said extensions and the flange, a part of said perforation being screw-threaded and a part enlarged beyond the screw-threads, and a ribbed clamping member mounted in the other side opening, and having screw-threaded male members extending through the same and engaging the screw-threads of the second mentioned perforations said male members having riveted heads thereon adapted to enter the enlarged part of the said second mentioned perforations.

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

JOHN H. KLIEGL.

Witnesses:
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WM. BOHLEBER.