

April 12, 1938.

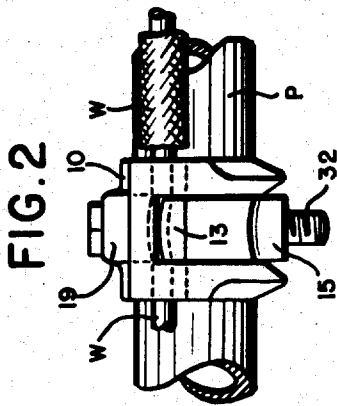
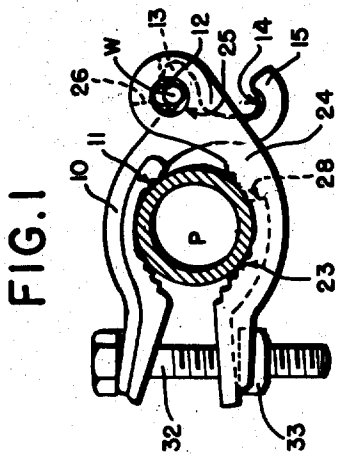
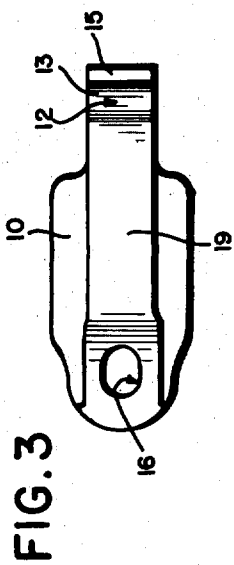
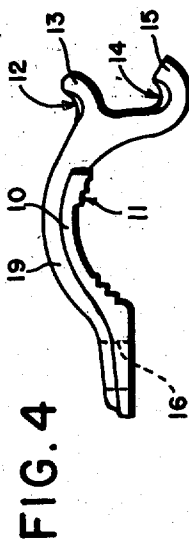
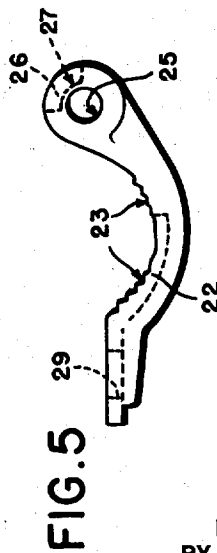
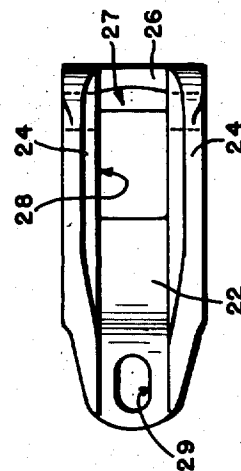
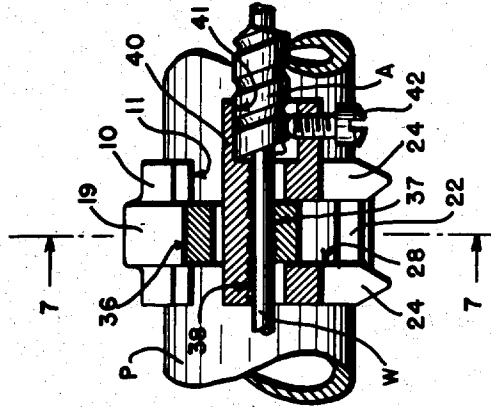
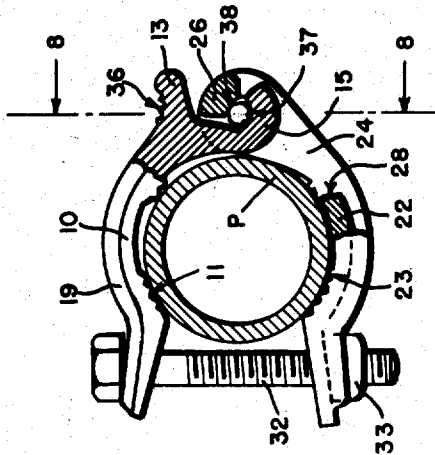
L. H. CHURCH

2,114,014

GROUNDING FITTING

Filed Nov. 21, 1936

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 9

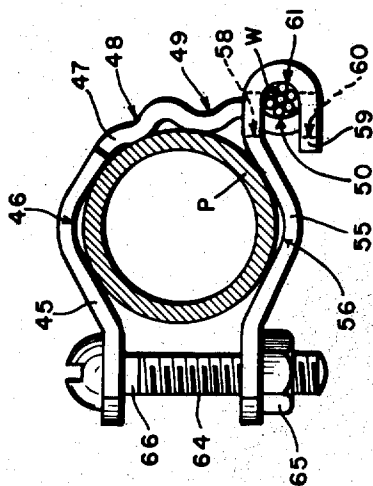


FIG. 11

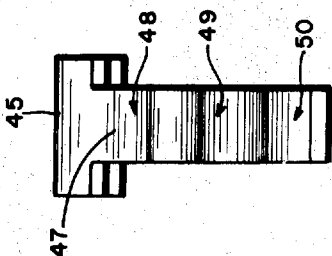


FIG. 10

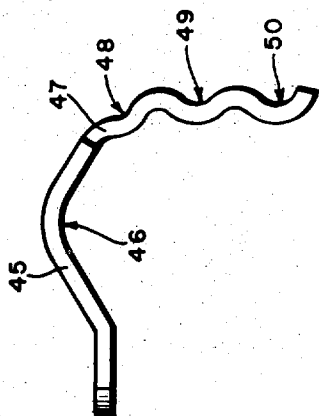


FIG. 14

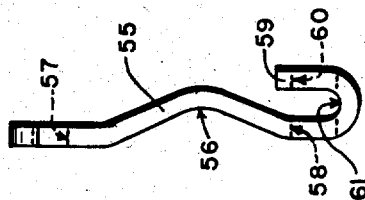


FIG. 13

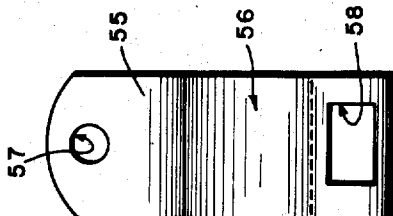
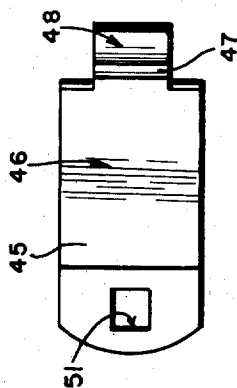


FIG. 12



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2,114,014

GROUNDING FITTING

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Application November 21, 1936, Serial No. 112,001

16 Claims. (Cl. 173-273)

The invention relates to a grounding fitting having two clamping members, which fitting is adapted to be clamped upon a grounded conductor and is adapted to grip the wire to be grounded because the grounding wire serves as a hinge pin or a connecting member between the two clamping members. The invention relates particularly to two new and novel forms of hinge bearings for the type of grounding fitting described above, one of which hinge bearings does not subject the ground wire to a shearing action when the two members of the grounding fitting are forced together in order to clamp the two members to the grounded conductor, and the other of which increases the area of the grounding wire which is subjected to shearing and hence in this way strengthens the connection at the hinge bearings. These forms of hinge bearings are also adaptable for a grounding fitting in which one of the clamping members has a plurality of hinge bearings thereby enabling the grounding fitting to be adjusted for a plurality of sizes of grounded conductors.

It is an object of the invention to construct a new and novel form of grounding fitting having two clamping members and which fitting utilizes the wire to be grounded as the hinge pin or connecting member between the two clamping members. The grounding wire which serves as the hinge pin is not subjected to a shearing action when the clamping members are forced together to clamp a grounded conductor and grip the grounding wire at the same time.

Another object of the invention is to construct a new and novel grounding fitting having the objects set forth above and which further is so constructed that the grounding fitting is adapted to clamp a plurality of different sizes of grounded conductors.

Another object of the invention is to construct the hinge bearings for the grounding wire in each clamping member forming the grounding fitting in such a manner as to distort the wire when it is gripped therein and thereby make it more difficult to pull the grounding wire out of the hinge bearing.

A further object is to construct the hinge bearings in such a manner that an increased area of the grounding wire, serving as a hinge pin, is subjected to shearing action when the grounded conductor is clamped in the fitting, thereby increasing the strength of the hinge connection and eliminating the danger of the grounding wire being sheared off when it is gripped in the hinge bearing.

A still further object of the invention is to construct one or both clamping members of the grounding fitting from strip or bar stock which is bent into desired form and which also utilizes the wire to be grounded as the hinge pin or connecting member between the two clamping members. Again, the grounding fitting has one of the clamping members provided with means bent thereinto which adapts the grounding fitting to receive one of a plurality of sizes of grounded conductors.

Other objects of the invention will be more apparent from the following description taken in connection with the accompanying drawings showing preferred embodiments of the invention, in which:

Figures 1 through 6 illustrate one form of the grounding fitting and show particularly an improved form of hinge bearing for receiving and gripping the grounding wire.

Figure 1 is a side view of the assembled grounding fitting with a small diameter grounded pipe or conductor clamped therein and gripping the grounding wire between the hinge bearings.

Figure 2 is an end view of the assembled grounding fitting illustrated in Figure 1 and shows particularly the longitudinally arcuate form of the hinge bearing.

Figure 3 is a plan view of one of the two clamping members forming the grounding fitting, which member carries a plurality of hinge bearings which permit the grounding fitting to receive and clamp one of a plurality of sizes of grounded conductors.

Figure 4 is a side view of the clamping member illustrated in Figure 3 and shows the two hinge bearings carried thereby.

Figure 5 is a side view of the other clamping member forming the grounding fitting.

Figure 6 is a plan view of the clamping member illustrated in Figure 5 showing an opening therein formed between two flanges and a cross-bar or member joining the ends of the flanges to form its hinge bearing.

Figures 7 and 8 illustrate a second form of hinge bearing which receives the wire to be grounded. In all other respects, the grounding fitting is the same as that illustrated in Figures 1 through 6.

Figure 7 is a side view, partially in section as taken on line 7-7 of Figure 8, of the assembled grounding fitting and the fitting is clamping a grounded pipe of larger diameter than that shown in Figure 1. A grounding wire is also shown gripped between the hinge bearings.

Figure 8 is a longitudinal section through the hinge bearings taken on line 8—8 of Figure 7. The hinge bearing upon one of the clamping members is also designed to secure and ground the armor of an armored type of grounding wire.

Figures 9 through 14 illustrate another form of grounding fitting in which the clamping members are formed from bar or strip stock bent into the desired form. This grounding fitting is also constructed to receive a plurality of sizes of grounded pipes or conductors.

Figure 9 is an assembled view of the grounding fitting showing clamping members formed from bent bar stock. The grounding fitting is clamped to a grounded conductor which is a one inch pipe and the fitting is gripping a stranded grounding wire.

Figure 10 is a side view of one of the clamping members of the grounding fitting, which member carries a plurality of hinge bearings.

Figure 11 is an end view of the clamping member of Figure 10 showing particularly the plurality of hinge bearings bent into the bar stock.

Figure 12 is a plan view of the clamping member illustrated in Figures 10 and 11 showing the clamping seat for the grounded conductor and the square hole in one end thereof, which hole receives an operating means or bolt.

Figure 13 is a plan view of the other clamping member of the grounding fitting and shows the hole through which the hinge bearings of the clamping member illustrated in Figures 10 and 11 are inserted.

Figure 14 is a side view of the clamping member illustrated in Figure 13 showing the manner in which the hinge bearing for this member is formed by bending the end thereof into a U shape.

It is desirable in a grounding fitting of the type in which the wire to be grounded serves as a hinge pin or connecting means between the two clamping members of the grounding fitting that the wire be not subjected to a shearing action which would tend to cut the grounding wire either partly or completely in pieces and thereby destroy the ground connection with the grounded conductor and permit the grounding fitting to become loose thereupon. The destruction or cutting off of the grounding wire can also be prevented by increasing the area of the wire which is subjected to shearing action, such as subjecting some portion of the length or longitudinal wire area of the wire to be grounded to a shearing action, as distinguished from a direct diametral shearing action through one or more diametral areas of the grounding wire. In addition, it is desirable that such grounding fittings be provided with a plurality of hinge bearings so that a plurality of different sizes of grounded conductors may be clamped by the grounding fitting thereby increasing the service or adaptability of such a fitting. These results have been obtained in the construction of grounding fitting to be particularly described herein.

The grounding fitting illustrated in Figures 1 through 6 includes a clamping member 10 which has a clamping seat 11 for receiving the grounded conductor. Any form of clamping seat is contemplated and that illustrated is generally arcuate in form. The clamping seat preferably carries serrations so that the grounded conductor is more firmly clamped thereby and better electrical contact may be established between the clamping members and the conductor. The clamping member 10 has a hinge bearing 12 formed by a projection or hook 13. A second

hinge bearing 14 may be and preferably is provided upon a second projection or hook 15 which is spaced from the projection 13 and hinge bearing 12. This second spaced hinge bearing adapts the grounding fitting for a plurality of sizes of grounded conductors or particularly two sizes of conductors. The hinge bearings and the clamping seats are substantially parallel to each other. The clamping member 10 carries a bolt or screw hole 16 at the end thereof opposite from the hinge bearings 12 and 14.

It will be noted that the hinge bearings 12 and 14 are open bearings, as distinguished from circular, and preferably face in a direction substantially 180 degrees from the direction in which the clamping seat 11 faces. The hinge bearings may face at any angle with respect to the direction in which the clamping seat faces provided it is substantially 90 degrees or greater. The hinge bearings 12 and 14 are also bulged at the center or arcuate longitudinally as illustrated particularly in Figure 2. The purpose of this longitudinal arc or curve in the hinge bearings will be explained hereinafter. The hinge bearings may be grooved to better retain the grounding wire in position.

The projections 13 and 15 merge with a rib 19 which extends over the back of the clamping seat 11 and extends to the other end of the clamping member. This rib gives rigidity and strength to the clamping member, both over the clamping seat 11 and at the bolt hole 16.

A second clamping member 22 has a clamping seat 23 which preferably carries serrations to better grip the grounded conductor and to establish better electrical connection therewith. Any form of clamping seat may be used and the arcuate form illustrated merely enables the seat to better conform with circular pipe. One end of the clamping member 22 has a pair of spaced flanges 24 through which a wire receiving hole 25 extends, the hole in each flange being in axial alignment. A cross member or bar 26 connects the ends of the flanges 24 and is integral therewith. This cross member is adjacent to the hole 25 in each flange and provides an opposed hinge bearing 27. The spaced flanges 24 and the cross member 26 provide an opening 28 in the clamping member. The other end of the clamping member 22 has a bolt or screw hole 29. The flanges extend over the back of the clamping member and give strength and rigidity thereto. The spaced flanges preferably extend to the end of the clamping member and are located on either side of the bolt hole 28 where they serve as holding means for preventing the turning of the nut or head of the bolt when it is being tightened to clamp the grounded conductor between the clamping seats 11 and 23 and to grip the grounding wire between the hinge bearings.

The hinge bearing 27 faces in a direction which is greater than 90 degrees and approximates 180 degrees from the direction in which the clamping seat 23 faces. It will be observed, therefore, that the direction in which each hinge bearing faces with respect to the clamping seat upon the same clamping member is approximately the same and the reason for this, of course, is so that the hinge bearing 12 or 14 may be opposed to the hinge bearing 27 upon the clamping member 22. This angularity is necessary with a clamp which adopts a physical lever of the first or second class. In a grounding fitting utilizing a physical lever of the third class, however, the hinge bearings will face approximately in the same direction as the clamp-

ing seat upon the same clamping member within a range of approximately 90 degrees either way. The hinge bearings must be opposed to each other, however, whichever way they face with respect to the clamping seat upon the same clamping member.

The hinge bearing 27 is bulged in the center or is preferably arcuate longitudinally, the same as the hinge bearings 12 and 14 upon the clamping member 10. The longitudinal arcuate form is in the same direction on all of the hinge bearings when in assembled position, which means that the arcuate or bulged hinge bearings 12 and 14 are convex or curved outwardly whereas the hinge bearing 27 is concave or curved inwardly. The purpose of these longitudinally bulged or arcuate hinge bearings will be described more fully hereinafter.

An operating means is provided to draw the clamping members together in order to perform three functions, first, to clamp the pipe or grounded conductor *p* between the clamping seats 11 and 23; second, to grip the grounding wire *W* between the hinge bearings 12 or 14 and 27; and, third, to distort or bend the grounding wire between the opposed hinge bearings. The operating means is preferably a bolt 32 having threads which receive the nut 33. The bolt 32 passes through the bolt holes 16 and 29 in the ends of the clamping members. Tightening of the bolt or nut clamps the pipe *P* and grips and distorts the grounding wire *W*.

The grounding fitting is assembled by extending the projection 15 or the hinge bearing through the opening 28 if a large diameter of grounded conductor is to be clamped therein, and also by extending the projection 13 through the opening 28 if a smaller diameter conduit *p*, as illustrated in Figure 1, is to be clamped between the clamping seats 11 and 23. The projection 13 is then positioned so that its hinge bearing 12 is in alignment with the holes 25 and in alignment with and opposed to the hinge bearing 27, whereupon the grounding wire *W* is inserted therebetween. The clamping members 10 and 22 are then positioned upon the grounded conductor *p* which is received between the clamping seats 11 and 23. The operating bolt 32 is then inserted through the bolt holes 16 and 29 and the nut 33 is threaded thereupon. Tightening of the bolt will draw the clamping seats 11 and 23 together and clamp the grounded conductor *p* therebetween. At the same time the hinge bearings 12 and 27 will be forced together to grip and distort the grounding wire *W* therebetween.

It will be observed that the grounding wire *W* is directly clamped between the hinge bearing 12 on the clamping member 10 and the hinge bearing 27 on the clamping member 22 so that the grounding wire is subjected to compression between these two members, or between the two opposed hinge bearings, and there is no possibility of a shearing action being exerted upon the grounding wire, regardless of to what extent the operating bolt 32 is tightened. The grounding wire *W* under the clamping action between the arcuate shaped hinge bearings 12 and 27 is pressed or bent into an arcuate form. It is clear, therefore, that a longitudinal pull on the grounding wire *W* not only must be strong enough to overcome the frictional contact of the hinge bearings 12 and 27 therewith, but must also be strong enough to overcome the deformation of the entire end of the grounding wire *W* in conforming to the arcuate form of the hinge bear-

ings as it is pulled from between the hinge bearings. The grounding wire is, therefore, more securely clamped between the hinge bearing by the arcuate or bulged form of the bearing. The deformation of the grounding wire *W* by the hinge bearings also aids in effecting a better electrical connection between the wire and the hinge bearings.

The grounding fitting illustrated in Figures 7 and 8 is identical with the grounding fitting illustrated in Figures 1 through 6 and described above, excepting for the hinge bearings. It is for this reason that the parts of the two grounding fittings bear the same numerals, and the different form of the hinge bearings only will be described in connection with Figures 7 and 8. The spaced hinge bearings 36 and 37 carried by the clamping member 10, instead of being arcuate or bulged like the hinge bearings 12 or 14, are provided with axially extending serrations. The hinge bearing 38 carried by the clamping member 22 carries circumferential serrations which are better illustrated in Figure 8. The serrations upon both hinge bearings bite into or distort the grounding wire *W* and more firmly grip the wire between the hinge bearings, as well as more effectively establish electrical contact between the grounding wire *W* and the two clamping members of the grounding fitting. The longitudinally extending serrations carried by the hinge bearings 36 and 37 scrape the surface of the wire when the operating means or bolt 32 is tightened and the circumferential serrations carried by the hinge bearing 38 cut into the surface of the wire. The action of the serrations more securely grips the wire and also more effectively establishes electrical contact between the grounding wire and the hinge bearings.

The clamping member 22 in the form illustrated in Figures 7 and 8 also carries an extension 40 which is in alignment with the hinge bearing 38. A bore 41 is provided in this extension in order to receive the armor *A* of the armored grounding wire *W*. A clamping screw 43 is threaded through one side of the extension 40 and extends into the bore 41 so that the armor *A* may be clamped in the bore by the screw and will thereby also establish good electrical contact between the armor and the clamping member 22.

Figures 7 and 8 illustrate a large diameter pipe *P* clamped between the clamping members 10 and 22 and consequently the ground wire *W* engaged is received between the hinge bearing 38 and the hinge bearing 37 which is carried by the lowermost projection 15.

Figures 9 through 14 illustrate a grounding fitting having the same function as the grounding fitting described in Figures 1 through 8. This grounding fitting, however, is formed from bar stock which is bent into the necessary form or shape so that it will clamp one grounded conductor of a plurality of different sizes and at the same time grip a grounding wire which serves as a hinge pivot or pin between the two clamping members of the grounding fitting. The grounding fitting includes a clamping member 45 bent into an arcuate or general V shape to form a clamping seat 46. The clamping member 45 carries a downwardly projecting extension 47 which is preferably narrower than the width of the bar at the clamping seat. The extension 47 is bent into a plurality of waves with arcuate depressions or parallel and spaced grooves therebetween in order to form the hinge bearings 48, 49 and 50. The other end of the clamping mem-

ber 45 carries a bolt hole 51 which preferably is square so that it will receive a corresponding square part upon an operating bolt or nut and hold the same against turning.

6 A second clamping member 55 is also formed from bar stock and bent to form a clamping seat 56. One end of the clamping member 55 carries a bolt hole 57. The other end of the clamping member is bent to form a hinge bearing and in the form illustrated this end of the clamping member is bent into a U-shape in which the opening between the legs of the U faces in the general direction of the clamping seat. An opening 58 is provided in that part of the U-shaped part which is adjacent to the clamping seat 56. As mentioned, the end of the clamping member is bent to form the U 59, and preferably the free end of the U extends substantially backward towards the clamping member 55. Because of the length of the free end, it is also provided with an opening 60 so that one of the hinge bearings 48, 49 or 50 may be inserted through both openings and brought into opposed relation with the hinge bearing 61. The U-shaped part 59 may be formed by bending the end of the clamping member 55 either inwardly or outwardly and the latter is preferred because the hinge bearing is, as illustrated in Figure 14, given greater rigidity thereby.

30 The hinge bearings upon each clamping member are opposed to each other and face in a direction approximately at an angle of 90 degrees with respect to the direction in which the clamping seat faces upon the same clamping member. The grounding wire will, therefore, be subjected to shearing stress which, however, is distributed not only over two circular or diametral areas determined by the sides of the hinge bearings, but also over a longitudinal or axial area of the grounding wire W. Although hinge bearings are preferred which do not subject the grounding wire to a shearing stress, there is shown in Figures 9 through 14 a grounding fitting having a hinge bearing which subjects the grounding wire to a shearing stress, but over an increased area of the grounding wire so that danger of shearing off of the wire is eliminated. A grounding fitting made by bending bar stock may be constructed so that the grounding wire is not subjected to shearing, but only to compression by bending the hinge bearings so that they face in a direction somewhat greater than 90 degrees with reference to the direction in which the clamping seat faces upon the same clamping member. In other words, the angle at which the hinge bearings face with respect to the direction in which the clamping seat faces determines whether or not the grounding wire will be subjected to shearing or compression between the hinge bearings. In each case, however, the hinge bearings are opposed to each other.

Operating means is provided to draw the clamping members 45 and 55 together to grip a grounded conductor p therein. This operating means is again preferably a threaded bolt 64 upon which is received the nut 65. This bolt preferably has a square or flat portion 66 which is received in the square hole 51 of the clamping member 45 in order to hold the bolt against rotation when the nut 65 is tightened. It is to be understood that any form of operating means is contemplated to draw the clamping members together to clamp the grounded conductor and grip the grounding wire.

75 The grounding fitting illustrated in Figures 9

through 14 is assembled by projecting the extension 47 through the holes 58 and 60 in the U-shaped end of the clamping member 55 until the proper hinge bearing 48, 49 or 50 is in alignment with the hinge bearing 61 formed by the U. The hinge bearing which is aligned with the hinge bearing 61 depends upon the size of the grounded conductor to be clamped between the clamping seats 46 and 56. A one inch pipe is illustrated as being inserted within the grounding fitting. 10 The operating bolt 64 is then projected through the hole 51 in the clamping member 45 and the hole 57 in the clamping member 55 and the nut 65 threaded thereupon to clamp the grounded conductor p between the clamping seats 46 and 15 56 and to grip the grounding wire W within the hinge bearings 50 and 61. It will be observed that the left-hand face of the opening 60 and particularly the left-hand face of the opening 58, as illustrated in Figure 9, prevents the extension 47 from bending away from the hinge bearing 61 and prevents the waves in the extension 47 forming the hinge bearings from being distorted out of shape. The rear edges of these openings, therefore, support the extension 47 25 against any distortion which might tend to release the ground wire and prevent it from being firmly gripped in the hinge bearings.

Various modifications will occur to those skilled in the art in the configuration, composition and disposition of the component elements going to make up the invention as a whole, as well as in the selective combination or application of the respective elements, and no limitation is intended by the phraseology of the foregoing 35 description or illustrations in the accompanying drawings.

What is claimed is:

1. A grounding fitting for a grounding wire comprising a pair of clamping members, a hinge bearing upon each clamping member which hinge bearings are adapted to receive a wire to be grounded and which wire serves as a hinge pin between the clamping members, clamping seats upon the clamping members between which a 45 metallic conductor is adapted to be clamped, the hinge bearings providing opposed faces so that the grounding wire received therebetween is engaged on directly opposite surfaces thereof, the hinge bearings also facing at an angle of approximately 90 degrees with respect to the direction in which the respective clamping seat faces so that pressure upon the grounding wire exerts a shearing stress throughout the length of the wire between the hinge bearings as well as across 55 the wire, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire within the hinge bearings in which the grounding wire is received. 60

2. A grounding fitting for a grounding wire comprising a pair of clamping members, a hinge bearing upon each clamping member which hinge bearings are opposed to each other so that a grounding wire received therebetween is engaged 65 on directly opposite surfaces thereof, the wire serving as a hinge pin between the clamping members, the hinge bearings having a form along the axis thereof to bend the grounding wire when it is gripped between the hinge bearings, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the 75

grounding wire against the hinge bearings in which the grounding wire is received and bend the grounding wire between the hinge bearings.

3. A grounding fitting for a grounding wire comprising a pair of clamping members, a hinge bearing upon each clamping member which hinge bearings are opposed to each other so that a grounding wire received therebetween is engaged on directly opposite surfaces thereof, the wire serving as a hinge pin between the clamping members, the hinge bearings having an arcuate form longitudinally thereof in order to bend the grounding wire when it is clamped between the hinge bearings, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received and bend the ground wire into an arc.

4. A grounding fitting for a grounding wire comprising a pair of clamping members, a hinge bearing upon each clamping member which hinge bearings are opposed to each other so that a grounding wire received therebetween is engaged on directly opposite surfaces thereof, the wire serving as a hinge pin between the clamping members, one of the hinge bearings having serrations extending axially of the bearing and the other hinge bearing having serrations extending circumferentially of the bearing in order to scrape and bite respectively into the grounding wire by the relative rotary movement between a hinge bearing and the wire when it is clamped between the hinge bearings, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received and distort the ground wire.

5. A grounding fitting for a grounding wire comprising a pair of clamping members, spaced flanges upon one clamping member, a cross-bar between the flanges, a hinge bearing upon the cross-bar, a hinge bearing upon the other clamping member, the hinge bearings being opposed to each other so that a grounding wire received therebetween is engaged on directly opposite surfaces thereof, each hinge bearing having a groove facing towards each other which grooves are adapted to receive the wire to be grounded, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, the clamping seats and hinge bearings being substantially parallel to each other, and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire within the grooves of the hinge bearings between which the grounding wire is received.

6. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a pair of spaced flanges projecting from the clamping member, a cross member between the flanges and having a hinge bearing which faces in a direction greater than 90 degrees from the direction in which the clamping seat faces, the flanges and cross member forming an opening in the clamping member, a second clamping member having a hinge bearing which is opposed to the hinge bearing upon the first member so that a grounding wire received therebetween is

engaged on directly opposite surfaces thereof, the hinge bearing for the second member being assembled opposite the hinge bearing upon the other member by inserting it through the opening between the flanges, the hinge bearings being adapted to receive therebetween a wire to be grounded and subject the same to compression, the clamping seats upon the clamping members being adapted to receive a metallic conductor to be clamped, the clamping seats and hinge bearings being substantially parallel to each other, and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire between the hinge bearings.

7. A grounding fitting for a grounding wire comprising a pair of clamping members, a plurality of hinge bearings upon one of the clamping members, the hinge bearings being parallel and spaced with respect to each other so that one is adapted to receive a wire to be grounded and the others to receive the ground wire for conductors of different sizes, at least one hinge bearing upon the other clamping member to also receive the grounding wire which wire serves as a hinge pin between the clamping members, the hinge bearings providing opposed faces engaging the grounding wire therebetween, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received.

8. A grounding fitting for a grounding wire comprising a pair of clamping members, a plurality of hinge bearings upon one of the clamping members, the hinge bearings being parallel and spaced with respect to each other so that one is adapted to receive a wire to be grounded and the others to receive the ground wire for conductors of a different size, at least one hinge bearing upon the other clamping member to also receive the grounding wire which wire serves as a hinge pin between the clamping members, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, the hinge bearings providing opposed faces engaging the grounding wire therebetween, the hinge bearings also facing at an angle greater than 90 degrees with respect to the direction in which the clamping seat faces so that the grounding wire is subjected to compressive gripping therebetween, and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received.

9. A grounding fitting for a grounding wire comprising a pair of clamping members, a plurality of hinge bearings upon one of the clamping members, the hinge bearings being parallel and spaced with respect to each other so that one is adapted to receive a wire to be grounded and the others to receive the grounding wire for conductors of a different size, an opening in the other clamping member forming a cross-bar which provides a hinge bearing to also receive the grounding wire which wire serves as a hinge pin between the clamping members, clamping seats upon the clamping members between which a metallic conductor is adapted to be clamped, the hinge bearings providing opposed faces when one or more of the plurality of hinge bearings are inserted

through the opening upon the other clamping member, the opposed hinge bearings engaging the grounding wire therebetween, the hinge bearings also facing at an angle at least 90 degrees with respect to the direction in which the clamping seat faces, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received.

10. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a pair of spaced flanges projecting from the clamping member, a cross member between the flanges and having a hinge bearing which faces in a direction at least 90 degrees from the direction in which the clamping seat faces, the flanges and cross member forming an opening in the clamping member, a second clamping member having a hinge bearing which is opposed to the hinge bearing upon the first member so that a grounding wire received therebetween is engaged on directly opposite surfaces thereof, the hinge bearing for the second member being brought directly opposite the other hinge bearing by inserting it through the opening between the flanges, the hinge bearings being substantially parallel to the clamping seats and adapted to receive therebetween a wire to be grounded, the hinge bearings being so formed that the grounding wire is distorted when gripped therein, the clamping seats upon the clamping members being adapted to receive a metallic conductor to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire between the hinge bearings.

11. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a pair of spaced flanges projecting from the clamping member, a cross member between the flanges and having a hinge bearing which faces in a direction at least 90 degrees from the direction in which the clamping seat faces, the flanges and cross member forming an opening in the clamping member, a second clamping member having a plurality of parallel and spaced hinge bearings, one of said hinge bearings being opposed to the hinge bearing upon the first member so that a grounding wire received therebetween is engaged on directly opposite surfaces thereof, the hinge bearing for the second member being brought directly opposite the other hinge bearing by inserting the same through the opening between the flanges, the hinge bearing selected depending upon the size of the grounded conductor, the hinge bearings being adapted to receive therebetween a wire to be grounded, the clamping seats upon the clamping members being adapted to receive a metallic conductor to be clamped, and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire between the hinge bearings.

12. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a pair of spaced flanges projecting from the clamping member, a cross member between the flanges and having a hinge bearing which faces in a direction substantially in excess of 90 degrees from the direction in which the clamping seat faces in order to subject the grounding wire to compressive gripping therein, the flanges and cross member forming an opening in the clamping member, a second clamping member having

a plurality of parallel and hooked hinge bearings spaced from each other, one of said hinge bearings being opposed to the hinge bearing upon the first member by inserting the same through the opening between the flanges and the hinge bearing selected depending upon the size of the grounded conductor, the hinge bearings being adapted to receive therebetween a wire to be grounded, the clamping seats upon the clamping members being adapted to receive a metallic conductor to be clamped, and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire between the hinge bearings.

13. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a pair of spaced flanges projecting from the clamping member, a cross member between the flanges and having a hinge bearing which faces in a direction in excess of 90 degrees from the direction in which the clamping seat faces in order to subject the grounding wire to compressive gripping therein, the hinge bearing being arcuate in form longitudinally, the flanges and cross member forming an opening in the clamping member, a second clamping member having a plurality of spaced hinge bearings, one of said hinge bearings being opposed to the hinge bearing upon the first member by inserting the same through the opening between the flanges and the hinge bearing selected depending upon the size of the grounded conductor, the hinge bearings being arcuate in form longitudinally and corresponding to the form of the hinge bearing upon the first clamping member and being adapted to receive a wire to be grounded and bend the same when gripped between the hinge bearings upon the clamping members, the clamping seats upon the clamping members being adapted to receive a metallic conductor to be clamped, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire between the hinge bearings.

14. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat to receive a grounded conductor, a hinge bearing upon the clamping member which hinge bearing is adapted to receive a wire to be grounded, and a hole through the clamping member adjacent to the hinge bearing; a second clamping member having a clamping seat, at least one hinge bearing upon the second clamping member which is arcuate in form and will pass through the opening in the first clamping member and will be opposed to the hinge bearing thereon to also receive the grounding wire which wire serves as a hinge pin between the clamping members; and operating means to force the clamping members together to clamp the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is received.

15. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a hinge bearing upon the clamping member provided by a U-shaped part at the end thereof of the U-shaped part with the sides thereof extending horizontally which hinge bearing is adapted to receive a wire to be grounded, and a hole through the sides of the U-shaped part; a second clamping member having a clamping seat, at least one hinge bearing of arcuate form upon the second clamping member which

will pass through the opening in the first clamping member and will be opposed to the hinge bearing upon the first clamping member to receive the grounding wire therebetween which wire
 5 serves as a hinge pin between the clamping members; and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the
 10 grounding wire is received.

16. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a hinge bearing upon the clamping member provided by a U-shaped end on the
 15 clamping member with the sides of the U-shaped end extending horizontally which hinge bearing is adapted to receive a wire to be grounded, and

a hole through the sides of the U-shaped ends; a second clamping member having a clamping seat, a plurality of hinge bearings carried by the second clamping member which are formed by a series of parallel and spaced grooves which
 5 will pass through the opening in the first clamping member and one of which may be opposed to the hinge bearing carried by the first clamping member to receive the grounding wire therebetween which wire serves as a hinge pin between
 10 the clamping members, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is
 15 received.

LEWIS H. CHURCH.

CERTIFICATE OF CORRECTION.

Patent No. 2,114,014.

April 12, 1938.

LEWIS H. CHURCH.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 6, second column, line 69, claim 15, strike out the words "of the U-shaped part" and insert the same after "sides", same line; and line 70, strike out the word "thereof"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 14th day of June, A. D. 1938.

(Seal)

Henry Van Arsdale,
 Acting Commissioner of Patents.

will pass through the opening in the first clamping member and will be opposed to the hinge bearing upon the first clamping member to receive the grounding wire therebetween which wire
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16. A grounding fitting for a grounding wire comprising a clamping member having a clamping seat, a hinge bearing upon the clamping member provided by a U-shaped end on the
 15 clamping member with the sides of the U-shaped end extending horizontally which hinge bearing is adapted to receive a wire to be grounded, and

a hole through the sides of the U-shaped ends; a second clamping member having a clamping seat, a plurality of hinge bearings carried by the second clamping member which are formed by a series of parallel and spaced grooves which
 5 will pass through the opening in the first clamping member and one of which may be opposed to the hinge bearing carried by the first clamping member to receive the grounding wire therebetween which wire serves as a hinge pin between
 10 the clamping members, and operating means to force the clamping members together to grip the metallic conductor between the clamping seats and grip the grounding wire against the hinge bearings in which the grounding wire is
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