Sept. 16, 1924. 1,508,456

W. G. LENZ

GROUND CLAMP

Filed Jan. 4, 1924

Fig. 1.

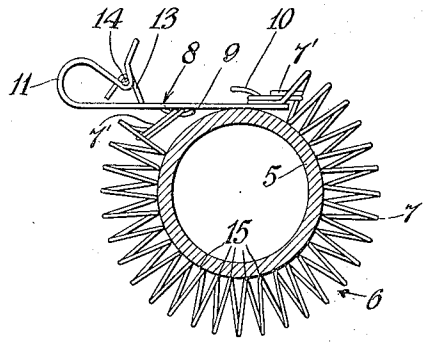
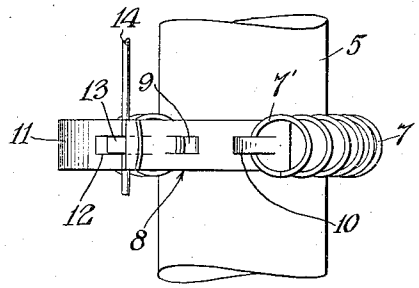


Fig. 2.



Inventor

William G. Lenz

By his Attorneys

Williams & Rutland

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UNITED STATES PATENT OFFICE.

WILLIAM G. LENZ, OF BROOKLYN, NEW YORK, ASSIGNOR TO PERFECTION MFG. CO., OF BROOKLYN, NEW YORK, A COPARTNERSHIP.

GROUND CLAMP.

Application filed January 4, 1924. Serial No. 684,335.

To all whom it may concern:

Be it known that I, WILLIAM G. LENZ, a citizen of the United States, and a resident of the borough of Brooklyn, city of New York, county of Queens, and State of New York, have invented certain new and useful Improvements in Ground Clamps, of which the following is a specification.

This invention relates to ground clamps such as are particularly adapted to be used as a means for grounding radio receiving instruments although not restricted to this particular adaptation.

An important object of my invention is to provide a device of the character mentioned which may be readily attached to a grounded element such as a water-pipe or the like and is so constructed as to conform to any irregularities of the grounded element and so yield upon expansion and contraction of the same as to enable the device to function efficiently under all conditions.

A further object of the invention is to provide a device of the character mentioned which may be maintained in intimate engagement with the grounded element at a multiplicity of points whereby an effective electrical connection is insured throughout relatively large contact areas between the grounded element and grounding device under all conditions.

Further objects and certain advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings in which—

Figure 1 is a transverse sectional view of a grounded element such as a water-pipe to which the device embodying my invention is shown as attached.

Figure 2 is a fragmentary view in elevation of a grounded element to which the device embodying my invention is shown in elevation as attached thereto.

In the drawings wherein for the purpose of illustration is shown what I at present consider the preferred form of my invention the numeral 5 indicates a water-pipe or other electrical conductor adapted to be electrically connected with the earth and to which is adapted to be applied the device embodying my invention and indicated as a whole by the numeral 6. This device comprises a spiral spring 7 having its opposite ends formed with eyelets 7′ one of which is permanently secured to a clip 8 by means of a tongue 9 struck from the same, whereas the other eyelet is adapted to be detachably connected to the clip 8 by means of a similar tongue 10. The clip 8 is preferably constructed from brass having more or less resiliency and is provided, at one end thereof, with a spring arm 11 which is cut away as shown most clearly in Figure 2 to provide an opening 12 into which is adapted to project a V-shaped finger 13 struck from the body of the clip 8. The spring arm 11 and finger 13 cooperate as will be readily appreciated as a means for retaining an electric conductor 14 confined therebetween, which conductor is adapted to be connected to the ground terminal of a radio receiving or other electrical instrument not shown. In attaching the device embodying my invention to the grounded element such as a water-pipe, the spring 7 is stretched more or less and placed under tension whereupon the detachable eyelet 7′ is hooked over the finger 10. By reason of the fact that the spring 7 is maintained under tension when the eyelet 7′ is connected to the finger, 10, the device as a whole is firmly clamped in position upon the grounded element and the several contact points 15 of the spring 7 are urged into and held in intimate engagment with the grounded element 5 thus insuring an efficient electrical connection between the grounded element and the device. This intimate contact between the spring 7 and grounded element 5 is maintained under all conditions incident to expansion and contraction of the grounded element 5 due to the fact that the spring 7 when attached is adapted to correspondingly yield upon expansion of the grounded element or pipe 5 whereas on the other hand if the pipe contracts the spring 7 due to its being under tension likewise contracts thus maintaining an efficient electrical connection. Furthermore, by reason of the fact that the spring 7 is more or less flexible the device embodying my invention may be applied with equal effectiveness to grounded elements having cross sectional shapes other than that of the pipe 5 disclosed herein for the reason that the spring 7 will readily lend itself or shape itself to conform to the shape of the grounded element. The surface of the grounded

element in addition to being of an irregular shape may be pitted or otherwise defaced without detracting from the efficiency of the electrical connection for the reason that the spring 7 will so shape itself as to effect an intimate contact between a multiplicity of contact points 15 thereof and the surface of the grounded element to which the device is attached. In the event it is desired to attach the device to relatively small grounded elements the spring 7 instead of being attached at its end to the finger 10 may be hooked over this finger at one of the contact points 15 in which case the effective length of the spring 7 may be changed without altering or modifying the device in order to effect application of the same to a suitable grounded element having a relatively short diameter or small cross sectional area.

While I have shown and described what I at present consider the preferred form of my invention it is to be understood that various changes in the size, shape and proportion of elements may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A ground clamp adapted to be attached to a grounded element comprising a spring adapted to encircle and contact with said grounded element, and a conductor clip adapted to be attached to opposite ends of said spring and held in engagement with said grounded element under the influence of said spring.

2. A ground clamp adapted to be attached to a grounded element comprising a spring adapted to encircle and contact with said grounded element, a conductor clip adapted to be attached to opposite ends of said spring and held in engagement with said grounded element under the influence of said spring, and means associated with said clip for attaching a conductor thereto.

3. A ground clamp adapted to be attached to a grounded element comprising a spiral spring adapted to encircle said grounded element and contact therewith, a conductor clip, means at one end of said spring for permanently attaching said clip to said spring, and means at the opposite end of said spring for detachably connecting said clip to said spring.

4. A ground clamp adapted to be attached to a grounded element comprising a spiral spring adapted to encircle said grounded element and contact therewith, a conductor clip, means at one end of said spring for permanently attaching said clip to said spring, means at the opposite end of said spring for detachably connecting said clip to said spring, and means for connecting a conductor to said clip.

In testimony whereof, I have affixed my signature to this specification.

WILLIAM G. LENZ.