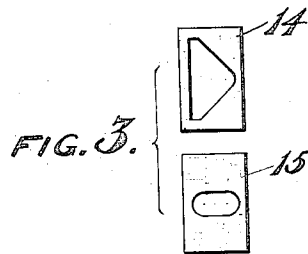
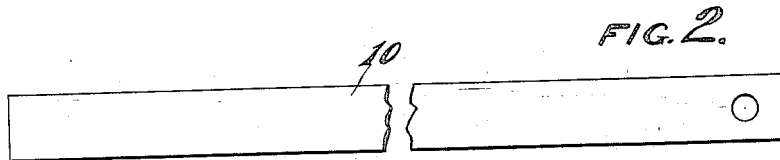
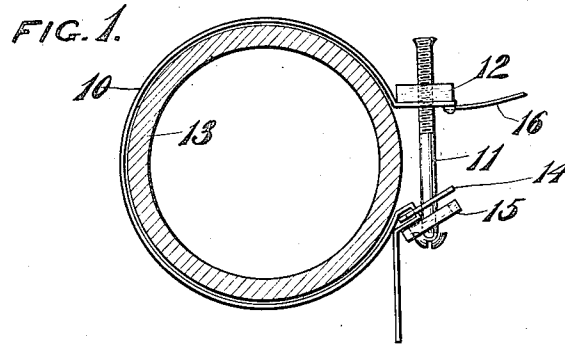


F. E. McKENNA.
GROUND WIRE CONNECTOR.
APPLICATION FILED NOV. 23, 1908.

949,743.

Patented Feb. 15, 1910.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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GROUND-WIRE CONNECTOR.

949,743.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed November 23, 1908. Serial No. 464,083.

To all whom it may concern:

Be it known that I, FRANCIS E. McKENNA, residing in Wauwatosa, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Ground-Wire Connectors, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

10 This invention has for its object to provide a convenient means for establishing a ground connection for telephone or other wiring systems by clamping upon water or gas pipes which because of their extensive contact with the earth afford the most satisfactory and most accessible means with which connection can be made for this purpose.

Another object of this invention is to simplify such a ground wire connector to render it inexpensive while at the same time most durable and efficient in use.

With the above and other objects in view, the invention consists in the ground wire connector herein claimed and all equivalents thereof.

Referring to the accompanying drawing in which like characters of reference indicate the same parts in the different views: Figure 1 is a view of a ground wire connector constructed in accordance with this invention applied to a pipe; Fig. 2 is a detail view of the flexible strip member thereof; and, Fig. 3 is a detail view of the two clamping plates thereof.

In these drawings 10 indicates a thin flexible metal strip which has an opening at one end to receive a bolt 11, the strip bending at an angle at the edge of the nut 12 thereof as shown in Fig. 1 and surrounding the metal pipe 13 or other means for affording the ground connection. The free end of the strip 10 is passed through a triangular shaped slot in a clamping plate 14 and then between said clamping plate and another clamping plate 15, both of which are upon the bolt 11 and the latter engaged by the head of the bolt. In this position of the parts the tightening of the bolt by turning it in its nut causes the clamping plates 14 and 15 to grip the free end of the strip between them while the nut is drawn up to tighten the band upon the pipe. The clamping plates 14 and 15 are permitted to assume the angular position with relation to the

bolt 11 as shown in Fig. 1 upon the bolt being tightened, by the rounded head of the bolt entering the transverse slot in the outside clamping plate 15. By reason of this slanting position of the clamping plates 14 and 15 they are permitted to cooperate with the pipe in forming a double clamp for preventing the slippage of the flexible strip, one biting action upon the strip being produced between the edge of plate 14 and the pipe and another biting effect being produced upon the strip between the faces of the two plates 14 and 15. With this double biting effect on opposite sides of the sharp bend of the strip, the plate 14 being made thinner than the plate 15 to make the bend as sharp as possible, there is no likelihood of the strip slipping and it is compelled to tighten upon the pipe to secure a firm and efficient contact therewith when the bolt is turned. The end of the bolt may be slightly upset to prevent the parts being lost therefrom while being carried from place to place.

The ground wire connector of this invention is quickly and easily applied, it being only necessary to pass the flexible strip around the pipe or other object affording the ground connection and then drawing it through the slot of plate 14 as tightly as may be done by hand, making the sharp bend therein where it passes through the slot of plate 14, and then the bolt is turned so that the clamping plates are drawn together to clamp the end of the flexible strip between them and between the plate 14 and the pipe and also causing the nut to approach the head of the bolt and bring with it the other end of the metal strip until said metal strip is stretched tight upon the pipe. The ground wire 16 is then secured to the metal strip in any desirable manner as by soldering. The parts may be left in their clamping position without fear of their working loose or becoming accidentally disengaged and the strong clamping effect upon the metal band assures a firm metallic contact with the pipe without appreciable electrical resistance.

What I claim as my invention is:

1. A ground wire connector, comprising a bolt, a flexible metal strip with one end connected to the bolt, and a pair of plates on the bolt, one of the plates being provided with a slot through which the free end of

the strip may pass and be clamped between the faces of the two plates when the bolt is tightened to stretch the strip.

- 5 2. A ground wire connector, comprising a bolt, a nut threaded thereon, a flexible metal strip having an opening in one end receiving the bolt, said end of the metal strip being engaged by the nut, and a pair of plates on the bolt, one of the plates being provided
10 with a slot, the free end of the strip being adapted to be carried around a pipe or the like and drawn through the slot of said plate and to pass out between the two plates, whereby the turning of the bolt will cause
15 the said end of the strip to be clamped between the two plates and between the slotted plate and the pipe while the strip is tightened upon the pipe by the approach of the nut toward the head of the bolt.
- 20 3. A ground wire connector, comprising a bolt, a nut threaded thereon, a flexible metal strip having an opening in one end to receive the bolt, said end of the metal strip bearing against the nut, a metal plate hav-
25 ing a transverse opening through which the

bolt passes with its head partially entering said opening, and a second plate provided with a triangular shaped slot through which the bolt also passes, the end of the metal strip being adapted to be passed around an
30 object with which connection is to be made and through the slot of the second plate and out between the two plates whereby the turning of the bolt in its nut will cause the strip to be clamped between the two plates
35 and between the slotted plate and said object.

4. A ground wire connector comprising a bolt, a flexible metal strip with one end connected to the bolt, and a pair of members on
40 the bolt between which the other end of the strip may pass and be clamped between said members when the bolt is tightened to stretch the strip.

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

FRANCIS E. McKENNA.

Witnesses:

R. S. C. CALDWELL,

ANNA F. SCHMIDTBAUER.