Feb. 8, 1938. M. F. PIERCE 2,107,835

GROUND ROD CONNECTER

Filed July 31, 1935

Fig. 1.

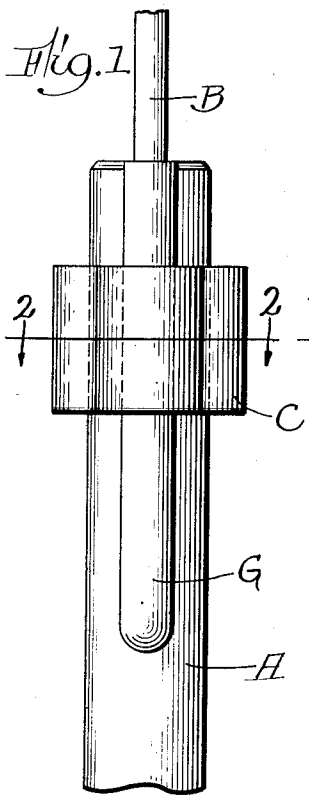


Fig. 3.

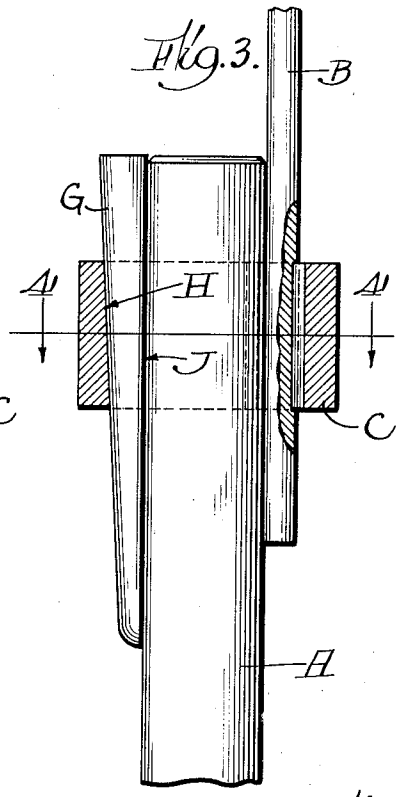


Fig. 4.

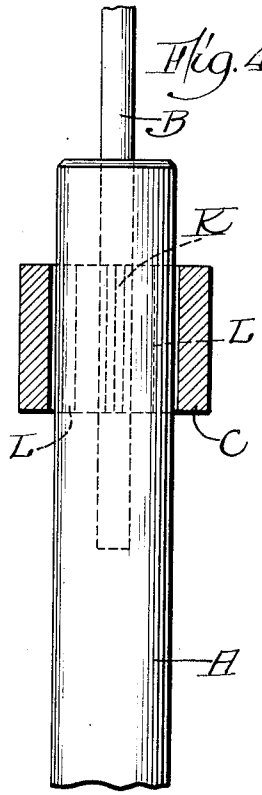


Fig. 2.

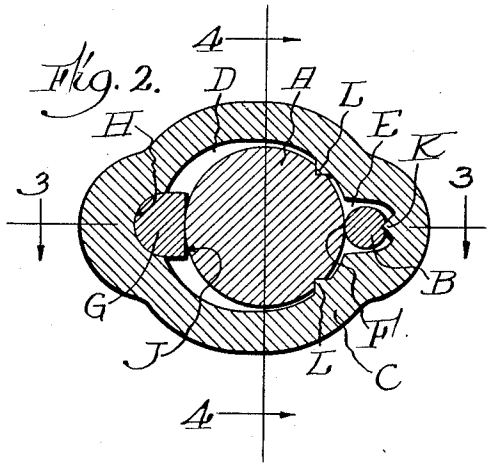


Fig. 5.

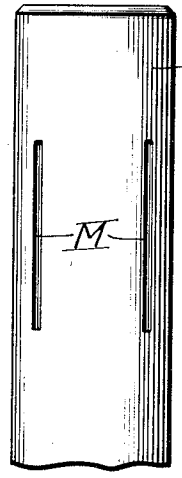
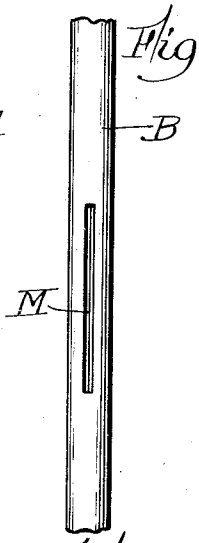


Fig. 6.



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2,107,835

GROUND ROD CONNECTER

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Application July 31, 1935, Serial No. 34,056

2 Claims. (Cl. 173—31)

My invention relates to ground rod connecters of the type used for the purpose of electrically connecting a conductor to a ground rod.

One of the objects of my invention is to provide a device of this character in which the electrical contact between the conductors is accomplished by actually bringing about the embedding of the metal of the connecter in the conductors to be connected under the force of considerable pressure so that the connection will be of low resistance, will remain uniform, and will not be subject to corrosion.

Another object is to provide an inexpensive connecter requiring no special tools for its installation and capable of ready removal and repeated use.

Other objects of the invention will appear from the following description and claims by reference to the accompanying drawing which illustrates one embodiment of the invention.

Referring to the drawing,

Fig. 1 is a view in elevation of a ground wire and ground rod in assembled relation, and connected by means of my device;

Fig. 2 is a transverse section on the line **2—2** of Fig. 1;

Fig. 3 is a vertical section substantially on the line **3—3** of Fig. 2;

Fig. 4 is another vertical section at right angles on the line **4—4** of Fig. 2;

Fig. 5 is a detail of the upper end of a ground rod illustrating the manner in which the connecter metal is embedded in to the metal of the ground rod; and

Fig. 6 is a similar view of the ground wire illustrating the same contact.

In the drawing, A represents the end portion of a typical ground rod generally driven or sunk into the ground for electrical purposes; and B represents the end portion of a wire or conductor adapted to be electrically connected to the ground rod.

While these conductors are of relatively different diameters and are circular in cross-section, it is understood, of course, that they may be of any diameter and cross-section in shape, and that the shape of the connecter may be conformed thereto.

The connecter embodied in my invention and illustrated in the drawing involves a band or collar C, preferably in the form of a closed loop, adapted to embrace or surround the conductors to be connected. The collar member is preferably made of hard brass or other suitable non-corrosive material. It has two openings or apertures D and E respectively, which extend through the collar and into which the conductors to be joined are inserted. In the present structure, the apertures D and E are of different diameters to correspond to the different diameters of the conductors, and one opens into the other so that the conductors are actually in contact with each other at F.

The apertures D and E are preferably larger than the conductors, principally for the purpose of freely inserting or removing the conductors. The walls of these openings or apertures are parallel with the conductors, although this is not necessary but is preferably from a manufacturing standpoint.

The conductors are forced into contact with each other by the connecter and a tapered pin or a wedging device G which extends through another aperture H in the collar and which forms a seat for the tapered wedging member G. The wall of the seat is accordingly tapered or arranged at an angle corresponding to the taper of the wedge member, as shown more clearly in Figs. 2 and 3. The tapered side of the wedging member is transversely curved to conform to the seat H, but the opposite side J is preferably flat so as to bear against the ground rod as shown.

After the conductors are inserted in the collar in position to be connected, the wedging member is inserted in its seat and driven therein by means of a hammer or other suitable tool. The wedging action of the wedging member causes the conductors to be drawn into contact with a relatively great force. While electrical contact is necessarily made between the collar and conductor by virtue of the intimate engagement which the wedging member has with the collar and ground rod, I do not rely upon this engagement for perfecting electrical connection. Surface contacts of this character have in the past not proven satisfactory, being subject to corrosion and lack of constancy. In addition, I provide knife edge contacts wherein the metal of the collar becomes actually embedded in the metal of the conductors. This is accomplished by a number of ribs or projections on the walls of the apertures so arranged that when the wedging force is applied to the collar, these ribs will actually pierce the metal of the conductors and become embedded therein. In the present structure the wall of the aperture E has an instanding rib K extending the length of the aperture and preferably positioned in diametrical alignment with both conductors. In like manner the wall of the aperture D is provided with similar ribs L positioned on either side

of the diameters of the conductors. These ribs are integral with the collar and are preferably triangular shaped in section so that sharp knife edges are formed. The force provided by the wedging member causes the knife-edged ribs to actually pierce and deform the metal of the conductors to the extent of forming grooves M therein, as shown in Figs. 5 and 6. The projections thus actually become embedded in the metal of the conductors and the electrical contact formed thereby becomes so intimate and effective that it has proven immune to the entrance of corroding factors and has remained constant and uniform through long periods of time.

The connecter may be readily removed at any time by driving out the wedging member, and may be repeatedly used because of the fact that none of the parts become damaged or distorted.

While the structure shown is conformed to conductors of different diameters, it is obvious that the diameters of the conductors, the shape of the collar, and its recesses or apertures, and the number of ribs, may be varied without departing from the spirit of the invention, and I contemplate such changes as may fairly fall within the scope of the appended claims.

I claim:

1. In a ground rod connecter of the class described, the combination of a ground rod and a conductor to be connected therewith adapted to be positioned in contact with and at one side of the ground rod, a closed band surrounding the ground rod and conductor and having intersecting apertures therethrough for said ground rod and conductor, said apertures having knife-edged ribs instanding from their walls, said band having a recess forming a tapered seat at the side of the ground rod opposite said conductor, and a removable tapered wedge member seated in said tapered seat and adapted to be driven between said seat and said ground rod to force said ribs to pierce the metal of the ground rod and conductor and become embedded therein.

2. As an article of manufacture, a ground connecter comprising a single piece of metal formed as a closed loop and having a central aperture therethrough and a different sized intersecting recess at one side thereof to accommodate the electrical conductors to be connected, and longitudinal integral knife edge ribs on the walls of said aperture and recess in position to engage the conductors, the wall of said aperture also having a tapered recess on the opposite side of said central aperture to accommodate a wedging member between said tapered portion and the conductors.

MILO FRED PIERCE.