F. I. JOHNSON.

PIPE CLAMP.

APPLICATION FILED JULY 3, 1920.

1,418,650. Patented June 6, 1922.

Fig. 1

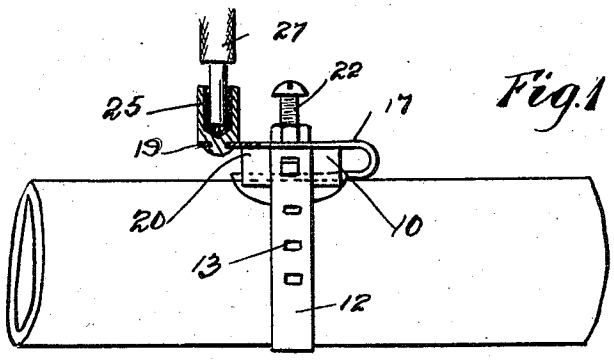


Fig. 2

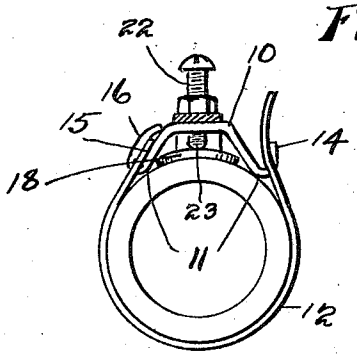


Fig. 3

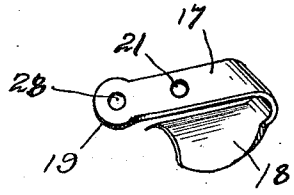


Fig. 4

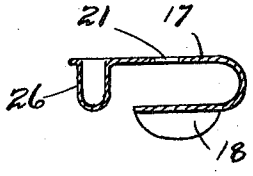
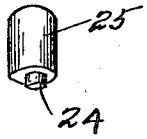


Fig. 5



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PIPE CLAMP.

1,418,650. Specification of Letters Patent. Patented June 6, 1922.

Application filed July 3, 1920. Serial No. 393,799.

To all whom it may concern:

Be it known that I, FREDERICK I. JOHNSON, a citizen of the United States, residing at Warren, Rhode Island, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Pipe Clamps, of which the following is a specification.

This invention relates to clamps used for grounding or binding electric wire conduits more particularly used in electric lighting and telephone systems; and the object of this invention is to provide such a grounding clamp with a cup-shaped or socket, terminal wire-receiving member which is connected to the body of a clamp.

A further object of the invention is to provide a flexible or adjustable contact shoe or member of contacting material and to secure this shoe to the body of a clamp to yieldably engage the conduit or pipe to be grounded and to provide one end of this contact shoe with the cup or socket member.

The nature and advantages of the invention will be better understood when the following detail description is taken in connection with the accompanying drawings, the invention residing in the combination and arrangement of parts as claimed.

In the drawings forming part of this specification, like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is a side elevation illustrating my improved construction wherein the socket member is connected to the free end of a contact shoe.

Figure 2 is an end view of a conduit illustrating my improved construction of shoe in contact with the conduit.

Figure 3 is a perspective view showing the contact shoe in detail.

Figure 4 is a modification illustrating the socket or cup as formed integral in the end of the contact shoe.

Figure 5 is a perspective view showing a separate socket member in detail.

It is found in practice, owing to the high price of conductor metals, such as copper, brass and the like, to be of particular advantage to reduce the amount of this quality of metal to be used in a ground clamp of my particular construction without impairing its effectiveness.

To this end I have provided a ground clamp which comprises essentially a saddle member 10 which may be formed of any suitable material, but with my improved type of clamp I preferably form the same of the less expensive materials, such as steel, iron stamping, malleable iron or the like, which is formed in substantially a V-shape, its lower edges 11 being adapted to rest upon the surface of a pipe or conduit, which construction is fully described in my prior Patent No. 1,250,467, patented December 18, 1917.

This saddle membed is readily connected to a pipe or conduit by means of a flexible band 12, one end 15 of which is permanently secured to the saddle by a bendable tongue 16, while the opposite end is provided with a series of holes 13 which are adapted to engage the hook member 14 on the opposite side of the saddle.

In the practical use of clamps of this character the Board of Underwriters requires that when a clamp is connected to a pipe it shall contact with at least three-fourths of the circumference thereof; to comply with which requirement, especially in using this clamp for enlarging the effective electrical contacting area of the clamp, the contact shoe is preferably formed in a U-shape as illustrated in Figures 3 and 4, the contact end 18 of the shoe being enlarged to rest upon the pipe or conduit, while the other portion of the shoe is arranged to extend along the upper surface of the saddle 10 with its end 19 extending beyond the end 20 of the saddle. A hole 21 is formed through this horizontal arm to receive the binding screw 22 which is threaded through the saddle 10, and its end 23 is adapted to engage the upper surface of the contact portion 18 of the shoe, to both insure a direct contact with the conduit and also to bind and hold the clamp firmly in position thereon.

The free end 19 of this shoe may be provided with a hole 28 into which the extension 24 in the bottom of the cup-shaped socket member 25 may be riveted.

I do not wish to be restricted to forming the cup or socket separate and independent of this shoe as the stock of the shoe may be drawn up into socket form, as illustrated at 26 in Figure 4.

By my improved construction it will be noted that the saddle member 10 may be formed of the minimum amount of stock

and of cheaper materials of less conductivity, while the shoe or contact member which is of much lighter stock may be formed complete of brass or copper and to the free end of this shoe may be connected a socket or cup member 25 into which the end of the wire or conductor 27 may be connected.

When it is desired to secure this wire conductor to my improved form of terminal, it is only necessary to drop a piece of solder into the cup, then melt the same by the application of a torch to the sides of the cup, when upon inserting the end of the conductor wire into this cup the molten metal rises up around the wire and upon cooling forms one solid mass making a perfect connection both mechanically and electrically of the wire conductor to the saddle member.

By constructing my improved pipe clamp in the manner herein described it complies with all the rules and regulations of the Board of Underwriters, and provides a most practical and efficient clamp for making electrical connection between the conductor wire and a pipe.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A clamp for ground wires comprising a saddle member, a contact shoe member having one end adapted to engage the grounding pipe and having a portion positioned to extend across and beyond the body of said saddle, clamping means for securing said saddle and shoe in position to the grounding pipe, and means at the free end of said shoe member to which the conductor wire may be soldered.

2. A clamp for ground wires comprising a saddle member, a contact shoe member having one end adapted to engage the grounding pipe and having a portion positioned to extend across and beyond the body of said saddle, clamping means for securing said saddle and shoe to the grounding pipe, and a socket member on the extending end of said shoe adapted to receive and have the end of an electrical conductor soldered therein.

3. A clamp for ground wires comprising a saddle member, a contact shoe having one end adapted to engage the grounding pipe and having a portion positioned to extend across and beyond that of the body of said saddle and normally supported by the saddle above the device to which the clamp is secured, an inwardly-extending socket portion integrally formed in said extending end having a closed bottom and adapted to receive and have the end of an electric conductor soldered therein, and clamping means for securing both the saddle and shoe in position on the ground pipe.

In testimony whereof I affix my signature.

FREDERICK I. JOHNSON.