May 15, 1928. 1,670,009

P. A. SAWYER

CONTACT CLAMP

Filed April 9, 1925

Fig. 2.

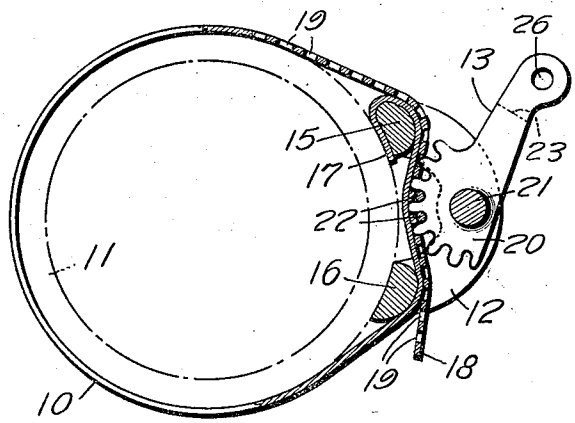


Fig. 1.

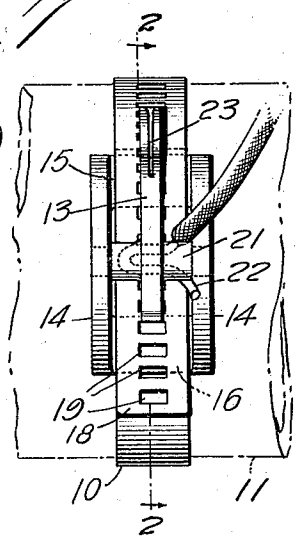


Fig. 3.

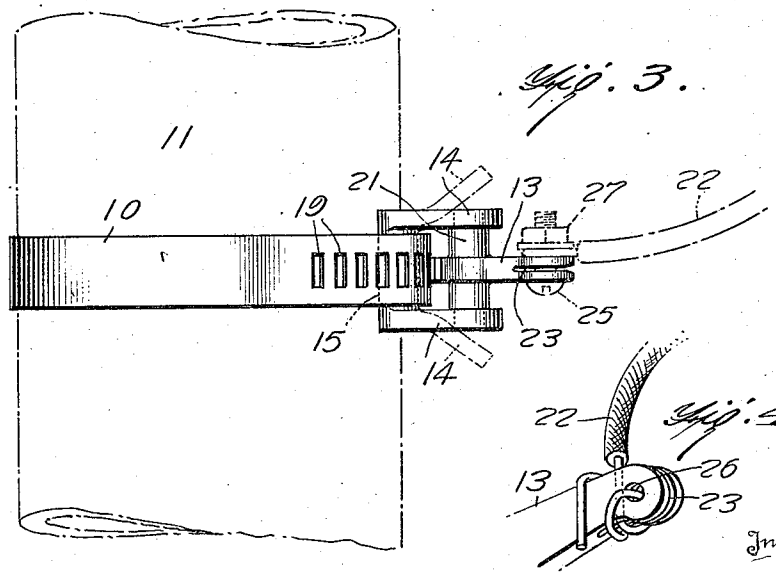


Fig. 4.

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UNITED STATES PATENT OFFICE.

PHILIP A. SAWYER, OF HASBROUCK HEIGHTS, NEW JERSEY.

CONTACT CLAMP.

Application filed April 9, 1925. Serial No. 21,861.

My invention relates to clamps, especially adaptable for use in connection with lead-in or ground wires as applied to telephone or wireless telephone connections, one of the objects being to provide a very simple and highly effectual device of this character that may be readily applied in position and easily removed when desired with assurance that, due to its novel construction, it will form a perfect and binding contact, this being accomplished without the aid of screws common to devices of this nature. The scope of my invention extends to whatever construction may be defined by or included within the terms or language of the appended claims.

In the drawing:

Figure 1 is a side elevation of my invention illustrated in position upon a pipe (the pipe shown in dotted lines);

Figure 2 is a central longitudinal section taken on the line 2—2 of Figure 1;

Figure 3 is a top plan view thereof and

Figure 4 is a detail perspective view of the operating lever of my improved device illustrating another form of electrical connection therewith.

My invention, in the form or embodiment shown in the drawing and briefly described, comprises a relatively thin metallic band or strip, 10, which is adapted to surround a pipe or similar conduit, 11, a saddle member, 12, and an operating lever, 13.

The saddle, 12, is preferably constructed of a pair of substantially semi-circular plates, 14, which are joined or connected together by means of a pair of upper and lower cross members, 15 and 16. The inner surfaces of the cross members, 15 and 16, are preferably slightly hollowed or curved so that they may readily conform to the curvature of the pipe when seated. As is clearly illustrated in Figure 2 of the accompanying drawing, the cross member, 16, is firmly seated against the pipe or conduit, 11, whereas the cross member, 15, rests against and firmly locks the backwardly bent or extreme end, 17, of the relatively thin metallic strip, 10, which, in turn, firmly bears against the pipe or conduit, 11.

The opposite or free end, 18, of the metallic strip, 10, is provided with a plurality of equi-distantly spaced elongated openings, 19, which are adapted to be engaged by the teeth of a segment, 20. Again referring to Figure 2, it will be noted that only a portion of the teeth of the segment, 20, are concentric with the trunnions, 21, the upper teeth being set further away from the center in the substantial form of a cam.

Formed integrally with the segment, 20, is the operating lever, 13, which not only serves the purpose of a means for actuating the segment for locking or unclamping the relatively thin strip with respect to the conduit, but it may also provide a means for securing the wire, 22, for example, as is illustrated in Figures 3 and 4. A relatively narrow slot, 23, which is slightly enlarged at its extreme end is formed in the free end of the operating lever 13, for a purpose to be hereinafter described.

The metallic strip, 10, passing over both of the cross members, 15 and 16, surrounding the greater portion of the conduit, 11, and being again forced against the members, 15 and 16, by reason of the teeth of the segment, 20, it will be readily seen, offers an excellent and perfect electrical connection between the pipe or conduit, 11, and the segment, 20. The extreme ends of the teeth of the segment, 20, by reason of the fact that they pass through the openings, 19, of the strip, 10, and frictionally bear against the relatively stationary portion of the strip, 10, it will be clearly seen present a wiping or scraping contact. An additional novel feature of this construction is that these teeth being arranged in a cam-like construction increasingly bear against the lower or relatively stationary portion of the strip 10.

I have illustrated several different manners of electrical connection between the wire, 22, and the segment, 20; in Figures 1 and 2 the extreme end of the wire, 22, is shown looped through a pair of the spaces between the teeth of the segment, 20, it being clearly seen the effectiveness with which this wire would be wedged between the teeth of the segment, 20, and the adjacent portion of the metallic strip, 10.

The electrical connection illustrated in Figure 3 is effected by means of a screw, 25, which is adapted to pass through the opening, 26, formed near the free end of the operating arm, 13, and is held in its locked position by means of a suitable nut, 27.

Still another form of electrical connection is illustrated in Figure 4 in which instance I slip the wire into the relatively narrow slot, 23, at a point beyond the opening, 26, then pass the extreme end of the wire

through this opening, 26, from which point it may be coiled around the arm as many times as desired, which will firmly lock the wire in position.

By reason of the fact that the trunnions, 21, are provided with slightly reduced ends which are adapted to enter suitable openings in the plates, 14, of the saddle member, 12, to prevent any lateral motion of the segment, 20, it may be desirable to bend the plates, 14, outwardly, as is indicated by dotted lines in Figure 3, and then press them together into their proper position. By inserting a hooked member through the opening, 26, near the extreme end of the operating lever, 13, it will be readily seen, a great deal of additional pressure may be placed against the teeth of the segment, 20. I have found this to be very desirable in connection with large pipes or conduits.

I claim:

1. A clamp for conduits or the like, comprising a saddle member having a pair of side plates and cross members, a metallic strip being backwardly bent around one of said cross members and adapted to pass around the conduit and an eccentric member being pivotally mounted between said side plates of the saddle member and having an arm provided with a relatively narrow slot adapted to receive a wire in the free end thereof.

2. A clamp for conduits or the like, comprising a saddle member having a pair of side plates and cross members, a metallic strip being backwardly bent around and secured to one of said cross members and provided along its free end with a plurality of equi-distantly spaced slots, said strip being adapted to pass around the conduit and an eccentrically formed segment adapted to engage the said slots in the relatively thin strip for actuating said strip in tightening and loosening it about the conduit and having an arm provided with a relatively narrow slot, adapted to receive a wire for electrical connection in the free end thereof.

3. A clamp for conduits or the like, comprising a saddle member having a pair of outwardly extending side plates having aligning openings therein, a pair of transversely extending cross members, having rounded outer surfaces, a relatively thin metallic strip being backwardly bent around one of said cross members and arranged to be impinged between the cross-member and said conduit and provided along its free end with a plurality of equi-distantly spaced slots, said strip adapted to encircle the conduit and an eccentrically formed segment having a pair of oppositely disposed trunnions adapted to engage within said aligning openings in the outwardly disposed plates.

4. A clamp for conduits or the like, comprising a saddle member having a pair of outwardly extending side plates having aligning openings therein, a pair of transversely extending cross members, having rounded outer surfaces, a relatively thin metallic strip being backwardly bent around one of said cross members adapted to bear against the conduit and provided along its free end with a plurality of equi-distantly spaced slots, said strip being adapted to encircle the conduit and an eccentrically formed segment having a pair of oppositely disposed trunnions adapted to engage within said aligning openings in the outwardly disposed plates and having an arm provided with a relatively narrow slot in the free end thereof.

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