

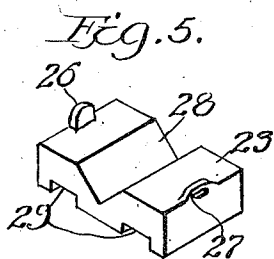
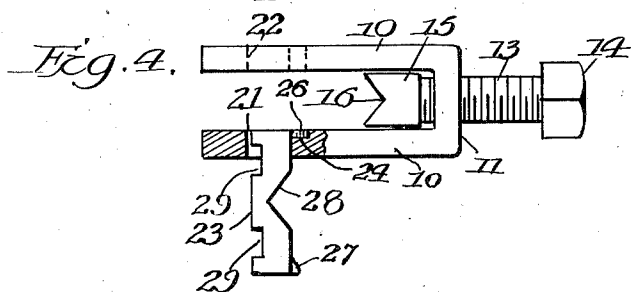
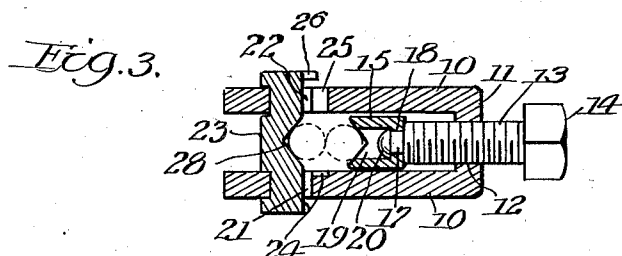
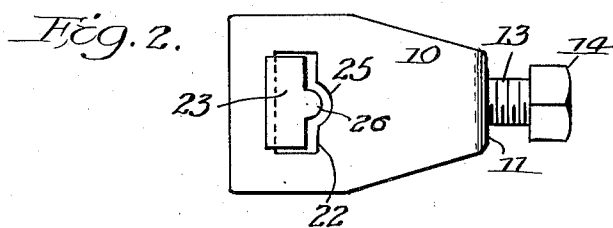
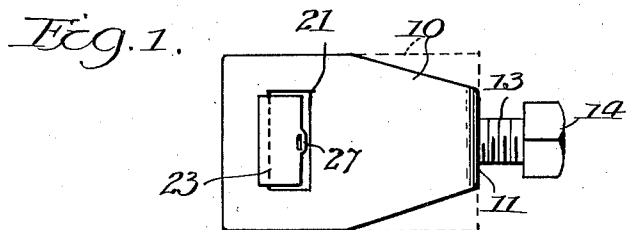
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E. E. JOHNSON

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ELECTRIC WIRE OR CABLE CLAMP

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Inventor
Ewald E. Johnson
by *E. Lundy* atty.

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ELECTRIC WIRE OR CABLE CLAMP

Ewald E. Johnson, St. Charles, Ill., assignor to
Reliable Electric Company, Chicago, Ill., a cor-
poration of Illinois

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5 Claims. (Cl. 173-263)

My invention relates to clamps for connecting a branch wire or cable to a main-line wire or cable.

One of the objects of my invention is to provide a clamp, such as contemplated herein, that is strong and durable in construction so that it will effectively perform the functions for which it is designed and is at the same time inherently capable of withstanding abuse in service. Another object of my invention is to provide a clamp for wires or cables that is simple in construction and operation so that it may be readily manipulated by an operator while working in a position which requires the use of one of his arms to support him in position, such as upon a cross arm or pole of an electric power line. Still further objects are to provide a clamp of this character that is novel in construction and which is economical to manufacture so that it may be economically produced in large quantities and sold for a reasonable retail price. Other objects and advantages will, of course, be obvious to persons skilled in the art, after the construction and operation of my invention is understood, and for the purpose of exemplifying a typical or preferred form in which the structure may be made, I have shown details thereof in the accompanying drawing that form a part of this specification.

In the drawing:

Figure 1 is a view of one side of the clamp.

Figure 2 is a view of the other side of the clamp.

Figure 3 is a longitudinal section taken on a plane perpendicular to the surface of Figure 2, and showing the parts in position to clamp a pair of wires together.

Figure 4 is an edge view, partly broken away, showing the clamp in position ready to be used.

Figure 5 is a detail in perspective of the abutment shoe detached from the other structure.

The drawing is to be understood as more or less schematic for the purpose of illustrating a typical or preferred form in which my invention may be made, and in said drawing like reference characters are used to identify like parts wherever such parts appear in the different views.

In many of the clamp structures, heretofore or now available upon the market, a split or longitudinally slitted bolt or screw is employed, which is of course, inherently weak, and the parts of these clamps which co-act with the bolt head, (the latter forming one of the members of the clamp), are screwed on the shank of the bolt, carrying with them a follower or opposing clamp member that is in some way united or operatively connected to the nut to prevent separation from

said nut. Means are provided, in some of these available clamps, to prevent loss of the parts. Structures of this character are, obviously, complicated and require special apparatus for manufacturing them. In some instances the prior devices are provided with means for permitting a hinging of the movable clamp member at the end of the bolt while retaining the parts from partial assembly. On account of the complicated construction of these before-mentioned articles, the workmen using the clamp find them difficult and cumbersome to handle, and most of them are so complicated that they require the both hands of the operator to mount them on the wires or cables. In my present device I have very materially simplified the construction of the wire or cable clamps so that they may be handled with greater facility by the operator.

The structure disclosed herein comprises a body member in the form of a U-shaped yoke, as shown in Figures 3 and 4, which comprises a pair of parallel arms 10-10 connected together at one end of the body by a transverse web 11. This body is made of approved conductive metal and may be a U-shaped casting as shown or it may be a metal strip of uniform width bent intermediate the ends to provide the U-shaped body. The transverse web is provided with a threaded aperture 12 to receive the screw 13, disposed with its head 14 outermost to provide a ready means for grasping and turning the screw either by hand or by the use of a wrench or pliers. When the bolt is screwed inwardly its shank enters a space between the arms 10 of the body.

The faces of the arms 10 of the yoke which are facing each other provide means for guiding the saddle 15 or movable member of the clamp. This saddle is a substantially rectangular block, preferably of approved conductive metal, and having V-shaped channel 16 formed longitudinally upon its work face. The transverse dimensions of the block are such that it will readily move back and forth between the arms 10 of the yoke when the screw 13 is rotated. The inner end of the bolt 13 has a swivel connection with the saddle or movable clamp member 15, such connection being formed by reducing the end of the bolt as shown at 17 and inserting it through a transverse opening 18 in the saddle. The remote portion of the opening is preferably enlarged as at 19 and, after the reduced portion 17 has been inserted so as to project its end into the enlargement 19, said projected end is headed as shown at 20, thus permitting rotation of the bolt with respect to the saddle.

The free ends of the arms 10 of the yoke are provided with substantially rectangular shaped alining openings 21 and 22 respectively to cooperate with the abutment member or shoe 23 of the clamp. The openings 21 and 22 have a special formation at one of their longitudinal edges to permit the shoe 23 to be moved through the opening 22 but not through the opening 21, as is seen in Figure 4 and to retain the shoe against removal from the yoke body. The opening 21 is rectangular in form on the outside of the yoke arm and the inner surface of said arm next the edge of the opening is provided with a semi-circular depression 24. The opening 22 has its edge, which alines with the depression 24, provided with a curved recess 25.

The shoe or abutment member 23 is preferably in the form of a rectangular metal block and has a lug or lip 26 of curved-shape projecting laterally from one edge, which lug 26 is of such shape that the adjacent end of the shoe may be moved through the opening 22, with the lug passing through the curved recess 25. After the shoe has been moved through opening 22 the lug 26 will seat in the depression 24 in the edge of the opposite opening 21, and thus prevent removal of the shoe, as shown in Figure 4. In this position the space between the arms 10 of the body or yoke is entirely open and clear, so that the wires or cables may be readily inserted and disposed therein.

It will be noted that the shoe 23, in normal clamping position, protrudes at each of its ends beyond the outer faces of the respective arms of the yoke. In the process of manufacture, after the shoe has been placed in this position, the edge of the block opposite the lug 26 is upset by a suitable tool to provide a retaining lip 27, which prevents the adjacent end of the shoe passing through the opening 21.

A V-shaped channel 28 extends across the shoe opposing the V-shaped channel 16 of the movable saddle member 15 of the clamp. When the bolt 13 is rotated in the proper direction the wires or cables will be clamped in a vise-like grip in the respective V-shaped channels 16 and 28 and the block or shoe 23 will be pressed against the edges of the openings 21 and 22 that are nearest the free ends of the yoke arms 10.

The surface of the block or shoe 23 opposite its V-shaped channel 28 is provided with parallel guide-grooves 29 of slightly greater width than the thickness of the metal forming the yoke arms 10, so that when the structure is in clamping position these grooves 29 seat at the adjacent edges of the openings 21 and 22. It will be noted that the thickness of the block is only slightly less than the width of the major portion of the openings 21 and 22 (see Fig. 4). The block forming the shoe 23 may be readily manipulated by the use of one hand of the operator to move it to proper positions for inserting the wires or cables and for clamping the latter together.

The structure shown is quite sturdy and when pressure is exerted during the tightening of the clamping elements there is practically no tendency of the parts to stretch or expand in the manner frequently incident in certain type of clamps available on the market. Also it will be noted there are no parts to get out of order and the component elements of the clamp are simple in construction and easy to make.

What I claim is:—

1. A wire clamp comprising a U-shaped body the arms of which are provided with rectangular openings, an edge of one of said openings provided with an irregularity, an abutment shoe of rectangular cross-section disposed in said openings and extending across the space between said arms, a lateral lug on said shoe corresponding substantially to the shape of the aforesaid edge irregularity to permit movement of the shoe past the same, said lug providing means preventing continued movement through the other opening, and a movable clamp element opposing said shoe.

2. A wire clamp comprising a U-shaped body the arms of which are provided with rectangular openings, an edge of one of said openings provided with an irregularity, an abutment shoe of rectangular cross-section disposed in said openings and extending across the space between said arms, lateral lugs at the ends of said shoe one of which lugs corresponds substantially in shape to the aforesaid edge irregularity to permit movement of the shoe past the same, the said lugs providing means to retain the shoe constantly in other opening, and a movable clamp element opposing said shoe.

3. A connector for electrical conductors comprising a U-shaped body having alined apertures in the legs thereof, a cross-bar slidable transversely of the body in said apertures and having end portions extending towards the free ends of said legs, one of said end portions being slidable through its aperture and into the other aperture, means co-operating with said end portion to prevent its passing through said other aperture, and means adjustably mounted in the base of said body to press conductors between said legs against said cross bar.

4. A connector of the character described, comprising a U-shaped body having aligned apertures in the legs thereof adapted to receive a cross bar, a cross bar, means adjustably mounted in the base of said body to press conductors between said legs against said bar, said cross bar being movable from a position where it extends through both said apertures to a position where it extends through only one aperture and the space between said legs is open to receive conductors, and cooperating means on said cross bar and one of said legs to prevent removal of the bar from said last named aperture.

5. A connector for electrical conductors comprising a U-shaped body having aligned apertures in the legs thereof, a cross bar movable transversely of said body to extend from one of said apertures into the other, said cross bar having end portions adapted to press inwardly on said legs to prevent the legs from spreading apart, said cross bar being movable to move one of said end portions from the aperture in the corresponding leg and into the aperture in the other leg whereby to provide for insertion of an unbroken conductor between the legs, said last named leg and said cross bar having cooperating members thereon preventing the cross bar from moving out of the aperture in said last named leg, and means adjustably mounted in the base of said body to press conductors between said legs against said cross bar.

EWALD E. JOHNSON.