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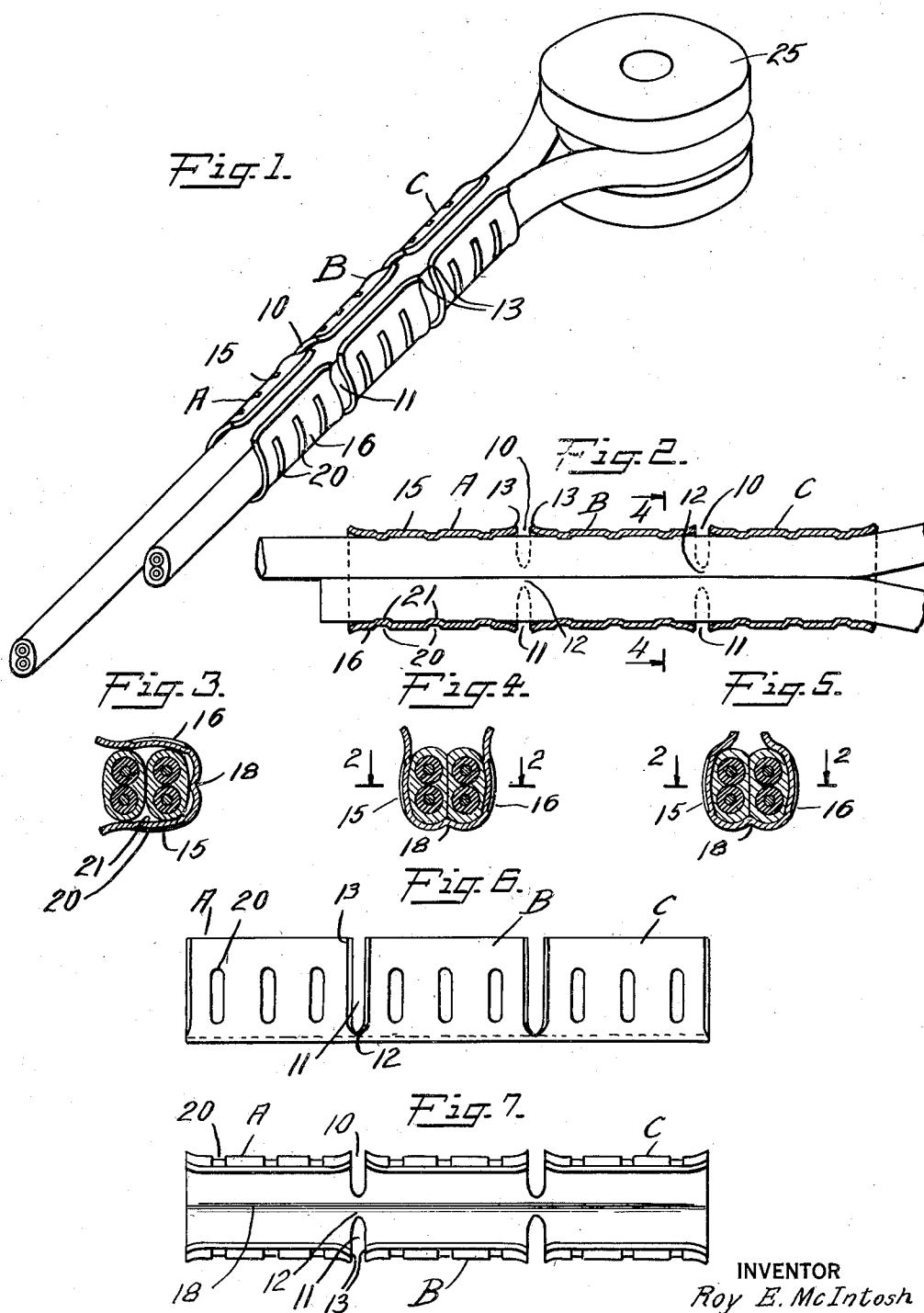
1,654,340

R. E. McINTOSH

CLAMP

Filed Aug. 7, 1926

2 Sheets-Sheet 1



INVENTOR

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BY

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2 Sheets-Sheet 2

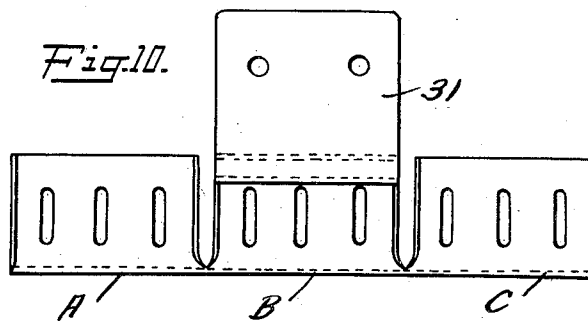
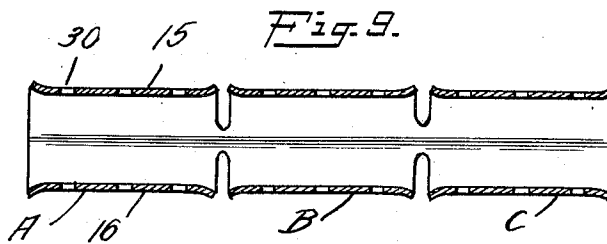
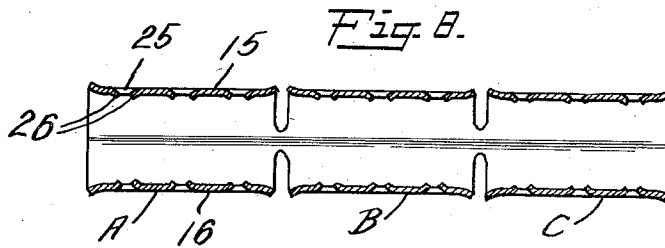


*Fig. 11.*

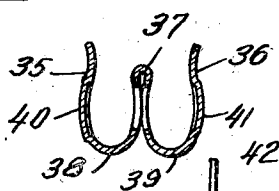


*Fig. 13.*

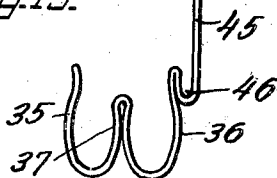
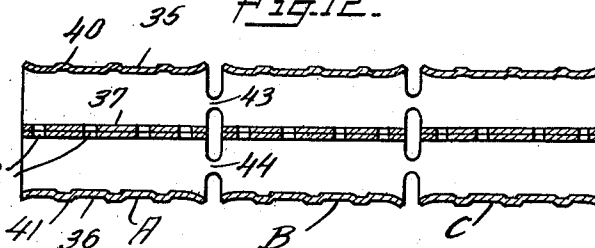


*Fig. 12.*



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## UNITED STATES PATENT OFFICE.

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## CLAMP.

Application filed August 7, 1926. Serial No. 127,841.

This invention relates to clamps and to a method of using the clamp.

More particularly stated, the invention relates to a clamp adapted for use with insulated wire to clamp the two parallel strands of the wire together. The clamp belongs to that type known in the trade as a "dead end" clamp.

As is well known in securing the dead end of a wire, the wire is usually bent around an insulator or fixed support, the free end being brought to a position parallel with the other portion of the wire and the two parallel strands secured together by tie wire. There is often considerable strain on the dead end and this strain must be taken care of by the tie. The tying clamp of the dead end requires considerable care and skill since it is difficult to hold the ends while the tie is being applied and at the same time maintain the desired tension in the span.

One of the objects of the invention is to provide a clamp that is simple and practical in construction, efficient in operation and can be easily and readily secured to the wire strands.

Another object of the invention is to provide a clamp of the character specified so constructed and arranged that it can be closed in sections.

Another object of the invention is to provide a clamp of the character specified so constructed and arranged that the wire will be temporarily held while the clamp is being closed.

Another object of the invention is to provide a clamp formed in sections so constructed that one or more sections can be used as desired.

Another object of the invention is to provide a simple and practical method of securing and clamping parallel strands of wire.

Further objects of the invention will appear from the following specification taken in connection with the drawings, which form a part of this application, and in which

Fig. 1 is a perspective view showing a clamp constructed in accordance with the invention secured in position on the dead end of a wire or cable;

Fig. 2 is a transverse sectional elevation taken substantially on line 2—2 of Fig. 4;

Fig. 3 is a sectional elevation showing the clamp in its initial position on the parallel strands of wire;

Fig. 4 is a view similar to Fig. 3, but showing the clamp rotated 90° on the parallel strands to initially secure the dead end prior to the closing of the clamp, this view being taken substantially on line 4—4 of Fig. 2;

Fig. 5 is a transverse sectional elevation similar to Fig. 4, but showing the clamp closed;

Fig. 6 is a side elevation of the clamp prior to closing;

Fig. 7 is a top plan view of the clamp shown in Fig. 6;

Fig. 8 is a view similar to Fig. 2 but showing punched out or flared openings in the sides of the clamp instead of indentations;

Fig. 9 is a view similar to Fig. 2, but showing perforations in the sides of the clamp;

Fig. 10 is an elevational view showing a clamp with a tab for securing the clamp to a support.

Fig. 11 is a transverse sectional elevation similar to Fig. 4, but showing a slightly different form of the invention;

Fig. 12 is a longitudinal sectional elevation of the structure shown in Fig. 11; and

Fig. 13 is an elevational view of a modification of the construction shown in Fig. 11, Fig. 13 showing a tab for supporting the clamp.

The invention briefly described consists of a clamp U-shaped in section and adapted particularly for use with insulated wire having an oval section. The opening in the clamp is so dimensioned as to receive the parallel strands of wire, the strands being located with their minor axes in alignment with the opening. In other words, the opening in the clamp is slightly greater than the length of the major axis of the wire. When the clamp is placed on the parallel strands of the wire in the manner above described and as illustrated in Fig. 3, the clamp is rotated 90° to the position shown in Fig. 4 and since the distance between the two sides of the clamps is less than twice the minor axis of the wire, the wire will be temporarily held, permitting the operator to use both hands when closing the clamp to the position shown in Fig. 5.

The clamp is preferably formed in sections and one or more sections may be used as desired, the sections being so connected that they can be easily broken apart.

In the form of the invention shown in Figs. 11-13 inclusive, the clamp is W-shaped

in cross section and the two sides of the clamp are forced inwardly against the strands of wire supported in the loops of the W.

5 In all of the forms of the invention, the sides or legs of the clamp are indented or perforated for the purpose of more securely retaining the wires in the clamp when the clamp is closed.

10 Further details of the invention will appear from the following description.

In the particular form of the invention illustrated in Figs. 1-10 of the drawings, there is shown a clamp comprising three sections A, B and C. These sections are formed from a single strip of material having inwardly extending notches 10 and 11 which separate the sections. The sections are connected by a central web 12 and the ends of the sections bordering the notches are preferably flared outwardly as shown at 13. These flaring ends of the sections stiffen the clamp and also avoid abrasion of the wire or cable.

25 The clamp shown in Figs. 1-10 is U-shaped in section and in its open position, the two sides of the clamp 15 and 16 are substantially parallel. A central longitudinal indentation or depression 18 is formed in the clamp and the sides 15 and 16 are slightly curved so that the parallel strands of wire will fit closely within the clamp when the clamp is rotated to the position shown in Fig. 4 and closed as shown in Fig. 5.

35 The two sides 15 and 16 of the clamp are preferably provided with transverse depressions 20, these depressions forming inwardly projecting ribs 21 as shown in section in Fig. 2 and assisting in securing the strands against movement in the clamp.

40 In the form of the invention shown in Fig. 8, the sides 15 and 16 of the clamp are perforated as shown at 25 instead of being indented as in the form of the invention shown in Figs. 1 to 7. The perforations are formed by punching and the edges are flared and extend into the clamp as shown at 26. This form of construction securely grips the insulation of the wires and prevents relative movement between the wires and the clamp.

In Fig. 9 the sides 15 and 16 have perforations 30 formed therein. The edges of the perforations are not flared as shown in Fig. 8 but when the clamp is closed, the insulation tends to press into the perforations, thus securing the wires against longitudinal movement in the clamp.

60 In Fig. 10 the central section B has a tab 31 secured thereto and extending upwardly therefrom and provided for suspending the clamp from a wall or other supporting structure.

65 The method of using the clamp shown in Figs. 1 to 10 inclusive and of applying the

clamp to parallel strands of wire is as follows. After the wire has been bent around an insulator such as that shown at 25 in Fig. 1, the two portions of the wire are brought into parallel position and the clamp 70 is placed over the parallel strands as shown in Fig. 3. The clamp is then rotated 90° to the position shown in Fig. 4 and since the distance between the two sides 15 and 16 of the clamp is less than twice the length 75 of the minor axis of the wire, the wires will be partially gripped by the clamp and held thereby during the subsequent closing of the clamp to the position shown in Fig. 5. This enables the user to utilize both hands 80 if necessary to properly close the clamp. It will be obvious that one or more of the sections can be used as desired and the sections can be easily and readily broken apart since they are connected only by the connecting webs 12. Furthermore, it will be evident that the sections can be closed one at a time.

It should be noted that the ribs 21 are formed in the sides of the clamp and do not extend into the central portion and when the sides are bent toward each other the bending action takes place about the unribbed central portion of the clamp.

75 In Figs. 11 and 12, the clamp illustrated is W-shaped in section or end elevation. This clamp has sides 35 and 36 and a central web 37. In use, the parallel strands of wire are placed in the two loops 38 and 39 and the sides are then bent over enclosing the wire strands. In this form of the invention, the walls 35 and 36 are indented as shown at 40 and 41 and the central web 37 is perforated as shown at 42, attention being called to the fact that the perforations 42 are staggered with respect to the indentations 40 and 41 in the sides 35 and 36. In this form of the invention as in the preceding forms, the clamp is formed with three sections A, B and C, but in this case, the sections are connected by webs 43 and 44.

Fig. 13 shows a construction similar to Figs. 11 and 12 but in addition thereto, shows a tab 45 connected to the side 36 by a loop 46 preferably offset. This tab is provided for suspending the clamp.

Although certain specific embodiments of the invention have been particularly shown and described, it will be understood that the invention is capable of modification and that changes in the construction and in the arrangement of the various cooperating parts may be made without departing from the spirit or scope of the invention, as expressed in the following claims.

What I claim is:

1. A U-shaped clamp for securing parallel strands of wire and having a central portion and sides, said sides being bendable toward each other to grip the strands and

said central portion having an inwardly extending, longitudinal indentation therein.

2. A U-shaped clamp for securing parallel strands of wire and having a central portion and sides, said sides being bendable toward each other to grip the strands and said central portion having an inwardly extending, longitudinal indentation therein and disposed centrally thereof.

3. A clamp for securing parallel strands of wire, said clamp being substantially U-shaped in section and comprising a plurality of longitudinal sections, the sides of the clamp sections being spaced apart by notches, the ends of the sides of each section being flared outwardly.

4. A clamp for securing parallel strands of wire, said clamp being substantially U-shaped in section and comprising a plurality of longitudinal sections, the sides of the clamp sections being spaced apart by notches, said clamp having an inwardly extending, centrally disposed indentation formed therein.

5. A clamp for securing parallel strands of wire and having a central portion and sides, said sides having transverse ribs and being bendable toward each other to grip the strands, and a tab carried by the clamp for suspending the clamp.

6. A clamp for securing parallel strands of wire and having a central portion and sides, said sides being bendable toward each other to grip the strands, one of the sides having a tab extending upwardly therefrom.

7. A clamp for securing parallel strands of wire and having a central portion and

sides, said sides being bendable toward each other to grip the strands, one of the sides having a tab extending upwardly therefrom and offset laterally from said side.

8. A clamp comprising a plurality of longitudinal sections, each section having substantially parallel sides bendable toward each other independently of the sides of the other sections, one of the sections having a tab secured to one of its sides and extending upwardly therefrom.

9. A method of clamping parallel strands of wire, oval in section, which consists in placing the strands in a substantially U-shaped clamp having an opening as wide as the length of the major axis of the wire and narrower than twice the minor axis of the wire, the strands being placed in the clamp with their minor axes parallel to the sides of the clamp, rotating the clamp 90° on the wires and subsequently pressing the sides toward each other to grip the strands.

10. A clamp for insulated wire having a central portion and sides, said sides having gripping means and being bendable toward each other to grip the insulated wire, and a tab extending from the clamp for supporting the clamp.

11. A clamp for insulated wire having a central portion and sides, said sides being bendable toward each other to grip the insulated wire, one of the sides having a tab extending upwardly therefrom.

In witness whereof, I have hereunto set my hand this 30 day of July, 1926.

ROY E. McINTOSH.