

Sept. 29, 1942.

O. F. TALLMAN

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WIRE CLAMP

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Fig. 1

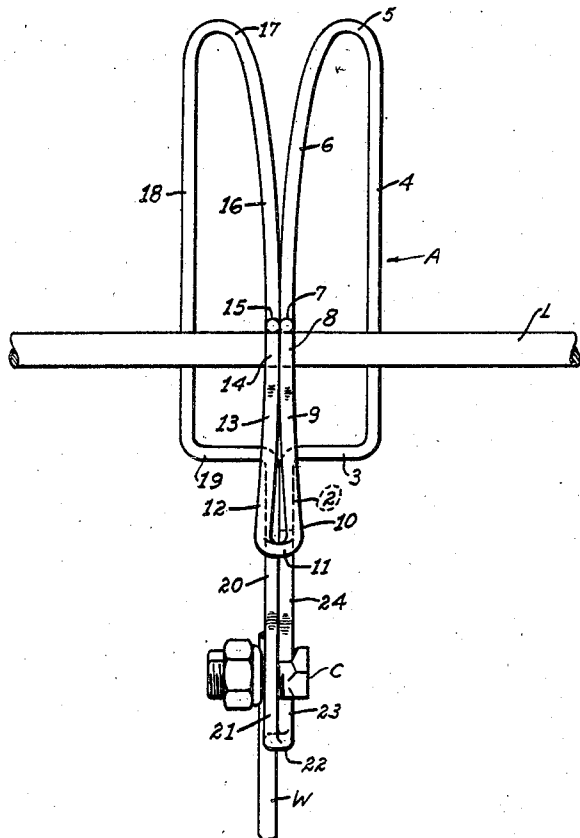


Fig. 2

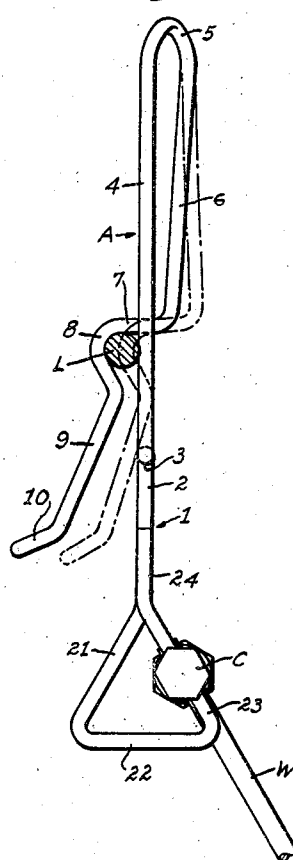
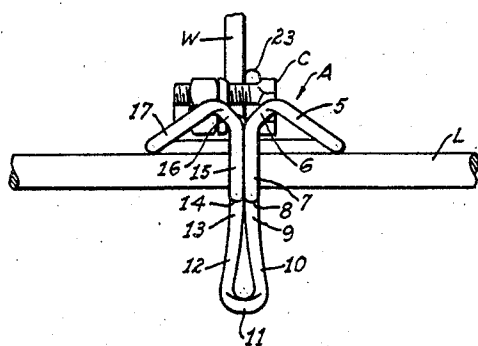


Fig. 3



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## UNITED STATES PATENT OFFICE

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## WIRE CLAMP

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2 Claims. (Cl. 173-273)

This invention relates generally to clamps for mechanically and electrically connecting tapoff and other wires to electrical lines, and more specifically to a clamp of the general type of that disclosed in United States Letters Patent No. 2,096,790, granted on October 26, 1937, the predominant object of the present invention being to provide a clamp of the type referred to, which, because of its improved construction and arrangement, is simplified and is rendered capable of being produced at reduced cost.

Fig. 1 is a front elevation of the improved clamp showing same applied to an electrical line and with a tapoff or other wire attached thereto.

Fig. 2 is a side elevation of the assembly illustrated in Fig. 1.

Fig. 3 is a plan view of the assembly illustrated in Figs. 1 and 2.

In the drawing, wherein is shown for the purpose of illustration, merely, one embodiment of the invention, A designates the improved clamp generally. The clamp A is formed from a single length of material, such, for instance, as heavy wire which is of sufficient stiffness yet sufficiently resilient to serve the required purpose.

The ends of the length of material from which the clamp A is produced, in the completed clamp, are located in abutting relation as indicated at 1 in Fig. 2 where said ends are welded, brazed, or otherwise secured together. Extending upwardly from the point 1 is a portion 2 of the clamp-forming material which merges into a horizontal portion 3 that extends outwardly from the upper end of said portion 2. Extended upwardly from the outer end of the horizontal portion 3 is a relative long portion 4 which terminates at its upper end in an inwardly curved portion 5, said portion 5 in addition to its inwardly curved formation being bent rearwardly, as shown to the best advantage in Fig. 3, to dispose said portion 5 at a rearwardly projected angle relative to the portion 4. The clamp A includes a slightly bowed portion 6 that extends downwardly from the curved portion 5 and terminates at its lower end in a horizontal portion 7, said portion 6 being located rearwardly of the portion 4, and said horizontal portion 7 extending forwardly from the lower end of the portion 6 toward the location of said portion 4 as shown in Fig. 2. The portion 7 merges into an outwardly and downwardly curved gripping portion 8 which in turn merges into a downwardly and outwardly extended, and slightly bowed, portion 9, said portion 9 terminating at its lower end in a portion 10 which is bent at an outward-

ly and downwardly projected angle with respect to the portion 9.

The portions of the clamp thus far referred to constitute one half of the clamp A, said clamp including in its structure similar parts which provide the other half thereof. In other words, the lower end of the portion 10 merges into a loop 11 (Figs. 1 and 3) which in turn merges into portions 12 and 13 that correspond with the previously mentioned portions 10 and 9. At the upper end of the portion 13 a curved gripping portion 14 is formed, and extended rearwardly from said gripping portion 14 is a horizontal portion 15, said horizontal portion merging into a slightly bowed portion 16 which extends upwardly from the rear end of the horizontal portion 15 in coincidence with the portion 6 previously mentioned herein. A continuation of the portion 16 at the upper end thereof is in the form of an outwardly curved and forwardly angled portion 17 which corresponds in shape and arrangement with the previously mentioned, and oppositely disposed portion 5, said portion 17 merging into a vertically disposed portion 18 which is a companion part of the clamp of the portion 4 thereof.

The portion 18 terminates at its lower end in a horizontal portion 19 which extends inwardly from said lower end of said portion 18 and merges at its inner end into a downwardly extended portion 20, which at its lower end is shaped to provide angularly disposed portions 21, 22, and 23 which produce a triangular opening there-within, as shown to the best advantage in Fig. 2. The portions 19 and 20 are companion parts to the previously mentioned portions 3 and 2, respectively, and a portion 24 which extends upwardly from the angularly disposed portion 24 is arranged in abutting relation with respect to the portion 2 and is secured thereto, as has been previously explained herein, to complete the clamp.

It is to be noted that the horizontal portions 7-15 and the gripping portions 8-14 of the clamp A contact with each other and are movable forwardly and rearwardly as a unit between the vertical clamp portions 4-18, rearward movement of said parts being limited by contact of the portions 9-13 with the portion of the clamp provided by the junction of the portions 3-2 and the junction of the portions 19-20. Also, as is shown in Fig. 1, the clamp portion 20 and the clamp portions 2-24 are in contact with each other transversely of the clamp, with the portion 22, located at the lower end of the

clamp, being extended at a slight angle because of the side-by-side relation of the parts mentioned.

The drawing illustrates a tapoff, or other wire W attached to the portion 23 by means of a suitable connector C, which may be of the split bolt type, for instance, and it will be assumed that it is desired to mechanically and electrically connect the wire W to an electrical power line L. To apply the clamp to the power line L the clamp with the wire W attached thereto is elevated to the location of the power line L with the aid of a suitable clamp stick (not shown), the finger of the clamp stick engaging the clamp by being inserted beneath and in contact with either of the clamp portions 5 or 17. The clamp is preliminarily applied to the power line so that the clamp is supported by the power line with the clamp portions 20—24 in contact with one side of said power line and with the clamp portions 10—12 in contact with and extended downwardly and outwardly with respect to the opposite side of said power line. The clamp stick is then shifted to introduce the finger thereof into the triangular opening defined by the clamp portions 21, 22, and 23 and the clamp is drawn downwardly relative to the power line with the aid of the clamp stick. Such downward movement of the clamp with respect to the power line L causes the portion of the clamp made up of the clamp portions 6—16, 7—15, 8—14, 9—13, 10—12, and 11 to be cammed outwardly relative to the remaining portions of the clamp from the position in which said parts are shown by dotted lines in Fig. 2, to cause the power line to be seated in the gripping portions 8—14 where it is forcibly gripped between the inner faces of said gripping portions 8—14 and the clamp portions 4—18 as is shown by full lines in Fig. 2, and as shown in Figs. 1 and 3.

When the clamp A is attached to a power line the inherent resiliency of the clamp structure causes the portion of the clamp of which the gripping portions 8—14 form parts, to tend to return to its normal, unstressed position shown by dotted lines in Fig. 2, and therefore the clamp very securely grips the power line so as to provide positive mechanical attachment and good electrical connection between the clamp and the power line. Also, the stressed condition of the clamp when it is in engagement with a power line, due to the outwardly displaced position of the portion of the clamp of which the gripping portions 8—14 form parts, results in a direct forward pull being applied to each of the clamp portions 4—18 which draws said clamp portions 8—14 into forcible contact with the power line to which the clamp is applied, the angularly extended clamp portions 5—17 being subjected by said direct pull to a resilient spreading action which aids in obtaining the desired intimate contact between the clamp portions 4—18 and the power line L to which the clamp is attached.

I claim:

1. A clamp formed from a single length of resilient material shaped to provide spaced, sub-

stantially parallel, vertical portions, inwardly curved and rearwardly converging portions located entirely at the upper end of the clamp and extended from said spaced portions at the upper ends thereof, said inwardly curved and rearwardly converging portions each describing a portion only of a complete circle and said portions being subjected to a spreading action when the clamp is stressed in use, portions extended downwardly from said inwardly curved and rearwardly converging portions which are joined at their lower ends, the upper portions of said downwardly extended portions being disposed rearwardly of said spaced portions and the lower portions thereof being disposed forwardly of said spaced portions, gripping portions formed in said downwardly extended portions which join the upper, rearwardly disposed portions thereof with the lower, forwardly disposed portions of said downwardly extended portions, said gripping portions being adapted to engage an element by which the clamp is supported so that said element is gripped between said gripping portions and said spaced portions, and portions extended from said spaced portions which are shaped to provide the clamp with an eye portion at its lower end.

2. A clamp formed from a single length of resilient material shaped to provide spaced, substantially parallel, vertical portions, inwardly curved and rearwardly converging portions located entirely at the upper end of the clamp and extended from said spaced portions at the upper ends thereof, said inwardly curved and rearwardly converging portions each describing a portion only of a complete circle and said portions being subjected to a spreading action when the clamp is stressed in use, oppositely curved portions extended downwardly from said inwardly curved and rearwardly converging portions which are joined at their lower ends, the upper portions of said downwardly extended portions being disposed rearwardly of said spaced portions and the lower portions thereof being disposed forwardly of said spaced portions, gripping portions formed in said downwardly extended portions which join the upper rearwardly disposed portions thereof with the lower, forwardly disposed portions of said downwardly extended portions, substantially horizontal portions extended from the upper, rearwardly disposed portions of said downwardly extended portions to said gripping portions and adapted for movement between said spaced portions, said gripping portions being adapted to engage an element by which the clamp is supported so that said element is gripped between said gripping portions and said spaced portions, and portions extended from said spaced portions which are shaped to provide the clamp with an eye portion at its lower end, said downwardly extended portions being in contact with each other at the locations of said gripping portions and said substantially horizontal portion.

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