

April 12, 1938.

J. R. MEADE

2,113,852

LINE CLAMP

Filed Oct. 16, 1936

Fig. 1.

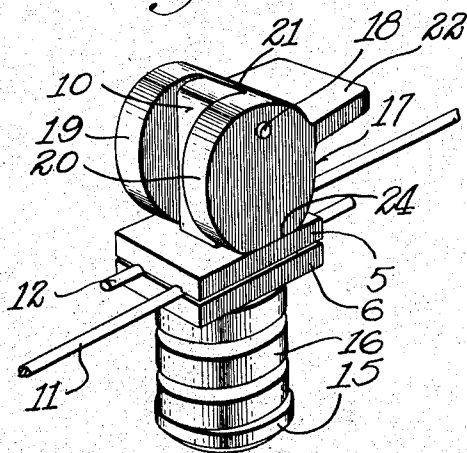


Fig. 3.

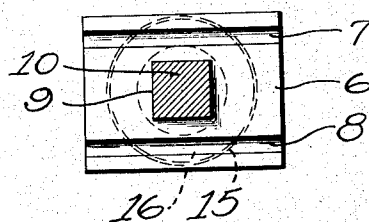


Fig. 2.

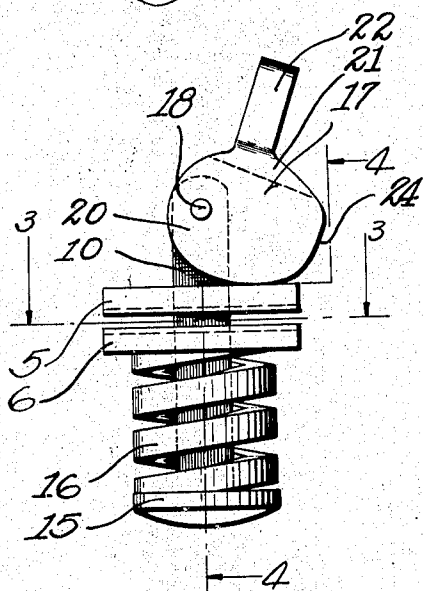
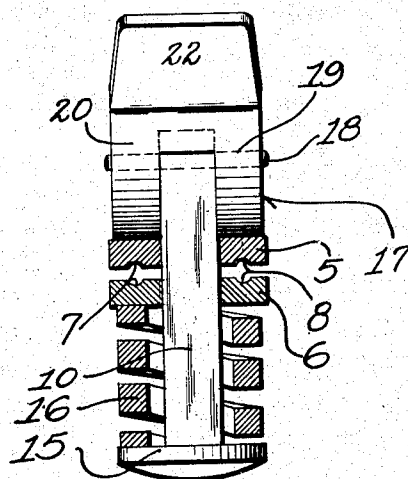


Fig. 4.



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UNITED STATES PATENT OFFICE

2,113,852

LINE CLAMP

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Application October 16, 1936, Serial No. 105,881

1 Claim. (Cl. 173-263)

This invention relates to improvements in line clamps.

It is the object of the invention to provide a clamp specifically for use as an electrical connector to be used by linemen in making serviceable connections of a semi-permanent nature in wires for telephone and telegraphic communication and wires for electrical supply mains and the like.

I am aware that many clamps of a somewhat similar nature have been proposed for various purposes. I am, therefore, only interested in the specific structure which makes my clamp simple, inexpensive, serviceable to effect a good electrical connection, and which makes it easily operable with a pair of pliers or other special tool but completely inoperable manually, thus protecting the connection from casual tampering.

More specifically, I propose to provide a clamp in which a pair of clamping plates are splined to a post to maintain their line grooves in alignment but are otherwise floating upon the post between a very heavy spring and a cam which is pivoted to the post and has an operating lever so short as to make the clamp manually inoperable while providing a grip which enables the clamp to be actuated with the greatest ease by a pair of pliers or special tool.

In the drawing:

Fig. 1 is a view in perspective showing my line clamp as it appears in use.

Fig. 2 is a side elevation of the clamp shown in Fig. 1 as it appears with the cam released.

Fig. 3 is a view taken in section on the line indicated at 3-3 in Fig. 2.

Fig. 4 is a view taken in section on the line 4-4 of Fig. 2.

Like parts are identified by the same reference characters throughout the several views.

The clamp comprises a pair of clamping plates or jaw members 5 and 6 which are identical, each being provided in one of its faces with a pair of line receiving grooves 7 and 8, and each being provided at its center with an opening 9 of non-circular contour to receive the central bolt 10 upon which the parts are assembled.

The non-circular contour of the central opening 9 and the cross section of bolt 10 are provided for the purpose of maintaining the grooves 7 and 8 of the respective clamping plates 5 and 6 in perfect alignment at all times so that they will register with each other to receive the ends of the wires 11 and 12. In order to assure the desired functioning at a minimum of expense, I preferred that the bolt 10 and the openings 9 in the clamping plate should be square in transverse section.

The plates 5 and 6 are thus prevented from

rotating with respect to each other, but they are otherwise freely floated upon the bolt 10. The bolt has a head at 15 against which seats a relatively heavy compression spring 16 which may conveniently be made of square sectioned wire.

Pivoted to the end of the bolt remote from its head 15, is a cam 17 which is mounted on a pintle 18 extending transversely through the bolt. The cam comprises a pair of ears 19 and 20 integrally connected by the base portion 21 of a short operating lever 22. The ears are eccentric with reference to the pin 18 but are flattened at 24 to be stable in the position shown in Fig. 1. In the Fig. 1 position of the parts the spring 16 has been subjected to heavy pressure by the manipulation of 15 the cam, and as a result the clamping plates 5 and 6, clamped upon the wires 11 and 12 between the cam and spring 16, are maintained forcibly in pressure engagement with the wires to establish an excellent electrical connection therebetween. 20 The amount of metal available for the transmission of electrical energy between wires 11 and 12 is relatively large in this arrangement and the pressure contact under compression of spring 16 is intimate.

The length of the lever 22 in proportion to the strength of spring 16 and in relation to the extent of the flattened surface 24, is such as to make it difficult, if not impossible, to release the clamp manually. A pair of pliers will, however, grasp 30 the stop lever 22 to enable the clamp to be manipulated with ease either to or from the line engaging position in which it is illustrated in Fig. 1.

I claim:

A line clamp comprising the combination with 35 a bolt of substantially square cross section, of a pair of line clamping plates having square apertures engaged over said bolt, said plates being floated upon an intermediate portion of the bolt, means carried by said bolt providing a spring seat, 40 a heavy compression spring on said seat supporting one of said plates, a cam comprising a pair of ears spaced to engage the sides of said bolt and integrally connected and provided with a stub operating lever, and a pintle eccentrically located 45 with reference to said ears and passing transversely through said bolt, said ears having cam surfaces engaging the other of said plates and terminating in flattened surfaces to provide a stable cam position of maximum spring compression, said stub lever being so shortened in relation to the extent of the flattened surface and the 50 strength of the spring as to inhibit manual release of the clamp while providing an anchorage for a plier or other tool by means of which said 55 clamp is readily operable.

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