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INSULATING CLAMP FOR RIBBON-LIKE CONDUCTORS

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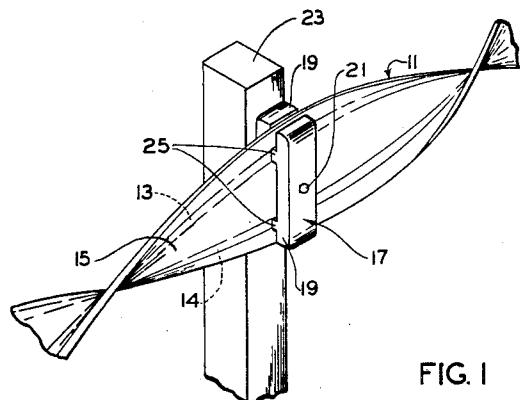


FIG. 1

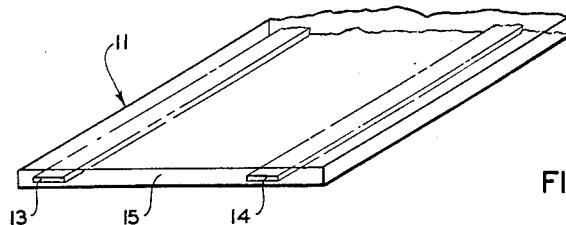


FIG. 2

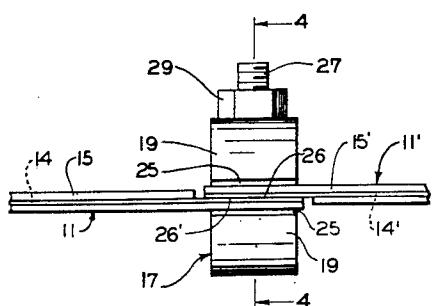


FIG. 3

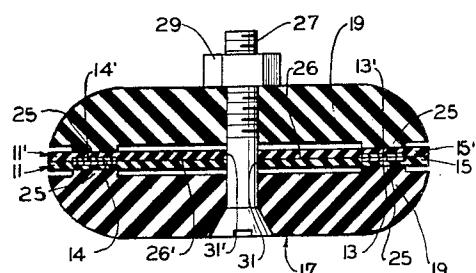


FIG. 4

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## UNITED STATES PATENT OFFICE

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## INSULATING CLAMP FOR RIBBONLIKE CONDUCTORS

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Original application April 16, 1945, Serial No. 588,505. Divided and this application April 11, 1946, Serial No. 661,259

2 Claims. (Cl. 174—156)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

1

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to clamps, and particularly to clamps for sustaining electrical conductors, such as a transmission line, as is described in my co-pending application, filed April 16, 1945, and having Serial Number 588,505, of which the present application is a division. The parent application is now abandoned.

Although many clamps and insulators for conductors and transmission lines are shown in the prior art, applicant is not aware of a simple clamp which is particularly adapted to be used with the parallel transmission line described in my co-pending application aforesaid. Although said clamps will be described herein in connection with said transmission line, it will be understood that its usefulness will not be deemed limited thereto.

It is, therefore, an object of the present invention to provide a clamp which is adapted to sustain a parallel transmission line and the like, which is simple and inexpensive to produce.

It is a further object to provide such a clamp which is adapted to be used in connection with the splicing of such a transmission line.

The present invention, as illustrated by the embodiment shown in the annexed drawings, resides generally in two plugs spaced from each other, but urged toward each other by any suitable means, which plugs are provided with ridges extending toward each other so as to concentrate all pressure exerted at said ridges.

In the accompanying specification there is described, and in the annexed drawings shown, what is at present considered a preferred embodiment of the present invention. It is, however, to be understood that the present invention is not limited to said embodiment inasmuch as changes may be made without the exercise of invention and within the true spirit and scope of the claims hereto appended.

In the drawings,

Figure 1 is a perspective view of a clamp embodying the present invention sustaining a transmission line;

Figure 2 is an enlarged perspective view of a short length of the transmission line of Figure 1;

Figure 3 is an enlarged elevational view showing the clamp of Figure 1 being used to sustain a splice of two ends of the transmission line of Figure 2; and

Figure 4 is a cross-sectional view taken along the line 4—4 of Figure 3.

2

Referring now more particularly to the drawings, the type of transmission line 11 for which the present clamp was specifically designed is shown most clearly in Figure 2. It comprises a pair of conductors 13 and 14 of a suitable metal, preferably flexible, which are in the form of thin wide ribbons and are maintained in parallel coplanar relationship. Said ribbon-like conductors 13, 14 are embedded in a single elongated sheath 15 of substantially rectangular cross section, of suitable solid, flexible, dielectric material, such as polyethylene.

In using the transmission line 11, the two piece clamp or bracket 17, shown in Figure 1, is entirely practical. Such a bracket 17, which is shown in more detail (in its alternate use as a splicing clamp) in the enlarged Figures 3 and 4, comprises a pair of blocks 19 of dielectric material, preferably a suitable plastic, between which the transmission line 11 may be sandwiched and which blocks 19 may be held together by any suitable fastening means, such as a wood screw 21, which in Figure 1 also secures the transmission line 11 and the bracket 17 to a wooden supporting pole 23. The opposing faces of the blocks 19 are preferably provided with projecting, flat faced ridges 25, spaced apart the same distance as the conducting ribbons 13, 14, so as to allow said bracket 17 to do double duty also as a splicing clamp as set forth below.

In Figures 3 and 4 are shown simple means for conductively coupling two lengths 11, 11' of the transmission line already described. This is accomplished by merely scraping away the insulating material of the sheath 15 above the conducting ribbons 13, 14, at one end of one length of transmission line 11 to form an upwardly facing, transversely disposed rabbet 26, and similarly removing the insulated material 15' below the conducting ribbons 13', 14', at one end of the other transmission line 11', to form a downwardly facing, transversely disposed rabbet 26'. The exposed upper surfaces of the ribbon conductors 13, 14 are then placed into contact with the exposed lower surfaces respectively of the conductors 13', 14', and are held together by a bracket 17, such as hereinabove described.

The blocks 19, 19 may be held together by any suitable means such as by a bolt 27 and a nut 29. The bolt 27 will pass through holes 31, 31' in the dielectric material 15, 15', midway between the conducting ribbons 13, 14 and 13', 14'. The purpose of the ridges 25 will now become apparent, it being seen that all the pressure between the blocks 19, 19 will be concentrated to maintain

electrical contact between the conducting ribbons 13, 14 and 13', 14' of the two transmission lines 11, 11'.

While there has been described what at present is considered a preferred embodiment of the present invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and it is, therefore, aimed in the appended claims to cover such changes and modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A clamp for sustaining a transmission line having two spaced parallel co-planar ribbon-like conductors embedded in a ribbon-like sheath of flexible dielectric material comprising a pair of blocks of dielectric material, each of said blocks having two like faced ridges spaced apart similar to the spacing of said two conductors, the ridges on one of said blocks opposing the ridges on the other of said blocks, said opposed ridges abutting opposite sides of said sheath proximate to said respective conductors; and means to urge said blocks toward each other to securely clamp said transmission line therebetween.

2. In a transmission system including a pair of spaced conductors embedded in a ribbon-like sheath, the combination with said conductors and sheath of a clamp including a pair of blocks

5 of dielectric material, each of said blocks having two like faced ridges spaced apart similar to the spacing of said two conductors, the ridges on one of said blocks opposing the ridges on the other of said blocks, said opposed ridges abutting opposite sides of said sheath proximate to said respective conductors; and means to urge said blocks toward each other to securely clamp said transmission line therebetween.

10 GEORGE E. COLMAN.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
495,552	Hills	Apr. 18, 1893
583,692	Renault	June 1, 1897
1,511,826	Chamberlain	Oct. 14, 1924
20 1,680,053	Lawson	Aug. 7, 1928
2,039,025	Papst	Apr. 28, 1936
2,059,983	Frank	Nov. 3, 1936
2,129,540	Van Billiard	Sept. 6, 1938
25 2,246,904	Stockinger	June 24, 1941

#### FOREIGN PATENTS

Number	Country	Date
30 24,281	Germany	Oct. 22, 1883