Oct. 19, 1926. 1,603,375

S. A. CLOWES

CABLE CLAMP

Filed Nov. 15, 1924

FIG. 1.

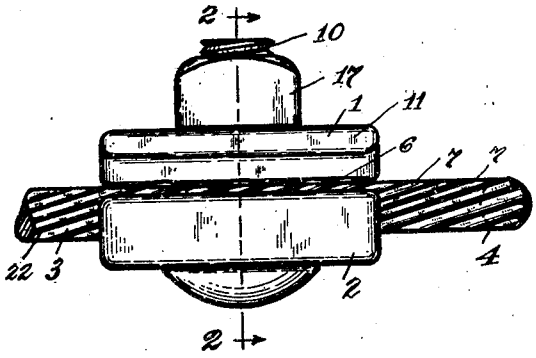


FIG. 2.

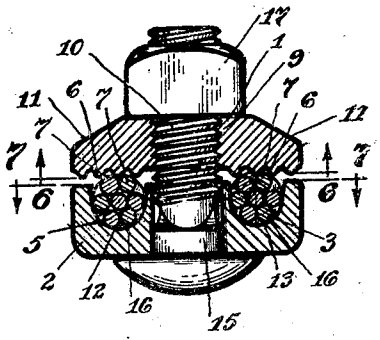


FIG. 3.

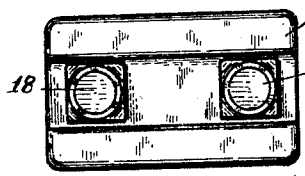


FIG. 4.

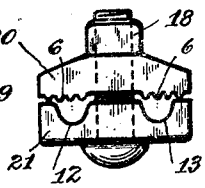


FIG. 5.

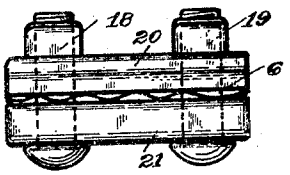


FIG. 6.

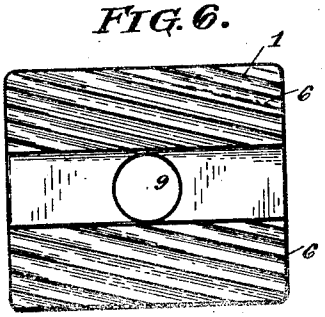


FIG. 7.

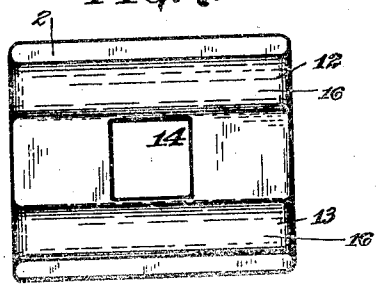
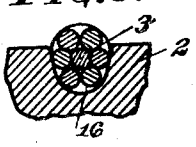


FIG. 8.



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Patented Oct. 19, 1926. 1,603,375

UNITED STATES PATENT OFFICE.

SUMPTER A. CLOWES, OF GLENSHAW, PENNSYLVANIA.

CABLE CLAMP.

Application filed November 15, 1924. Serial No. 750,094.

The present invention relates to cable clamps, which are of the type which exert a compressive action on the cable, said cable being usually returned in the form of a loop, the end passing through the clamp a second time, as will be more fully explained as the specification proceeds herein.

The invention in hand has two especially advantageous physical features which are of moment in assisting the two sections of which the clamp is composed, to effectually grip the cable; one of which is the tapered groove in the lower section of the clamp, and the other is the series of corrugations formed in the bottom face of the upper section of said clamp. The effect produced by these just named features will be elaborated upon in the specification so that their action in holding the cable when under load may be fully understood.

The clamp under consideration is a very simple one in construction, and has been proven under severe tests in practice to possess great holding power; and also has the advantage of being adaptable to "multiple use," that is in connection with a series of securing bolts, as will be shown herein.

In the drawings, I have illustrated a complete example of the present invention, fashioned according to the best mode I have so far devised for the application of the principles of my invention, together with a modification which is found desirable when great holding power is desired.

In the drawings, Figure 1 is a side elevation of the cable clamp.

Figure 2 is a central transverse sectional view of Figure 1, taken on line 2—2 thereof.

Figure 3 is a top plan view of a multiple type of my clamp.

Figure 4 is an end view of Figure 3, taken from the left side thereof.

Figure 5 is a side view of the clamp shown in Figure 3.

Figure 6 is a plan view of the upper section of the clamp taken on line 6—6 of Figure 2 looking in the direction of the arrows.

Figure 7 is a top plan view of the lower section of the clamp, taken on line 7—7 of Figure 2.

Figure 8 is an enlarged partial transverse section, showing one of the grooves of Figure 2.

In the drawings the numeral 1 indicates the upper section of the clamp, and 2 the lower section of same, the cable held between said sections is shown at 3, and the latter is usually returned in the form of a loop at 4, and the shorter end 5 passes through the cable clamp a second time as shown in Figure 2.

The upper section is formed with corrugations 6, 6 which preferably are of proper size to engage upon a single strand 7 of the cable 3, as shown in Figure 2. It is seen that the direction of the corrugations 6, 6 are suited to the direction of the cable strands 7, 7, which lie on the top face of the cable for a purpose which will be explained hereinafter.

The upper section 1 is pierced by an opening 9 which is adapted to receive a bolt 10 of any desired diameter, and the top face of section 1 is beveled at 11, 11, preferably as shown in Figures 1 and 2.

The lower section 2, is clearly shown in Figures 1, 2 and 7, and is provided with the grooves 12, 13 of special design, and a preferably square bolt hole 14, adapted to receive the square neck 15 of the bolt 10 as shown. It will be seen from an inspection of the Figures 2 and 8 of the drawings, that the grooves 12, and 13 are tapered, or flared outwardly and upwardly from a semi-spherical base portion 16 in each. It will be noted also that the width of the grooves at the top, as seen in cross-section is just adapted to receive the "overall" diameter of the wire cable 3, while at the base a slightly smaller diameter of groove is used for a purpose to be described.

A type of bolt 10 is used as shown which has preferably the square neck 15, and said bolt passes through both sections 1 and 2, and in conjunction with the nut 17, forms the means for locking the two sections of the clamp together.

The Figures 3 to 5 inclusive show a "multiple type" of the present invention, and disclose the adaptability of the present invention for use where several bolts 18, 19 are necessary, and longer sections 20, 21 are used, in order to obtain very great holding power on a cable. The same features of tapered grooves 12, 13, and corrugations 6, 6 are used with this modified form of clamp, the sections merely being extended in length to accommodate the extra number of bolts used.

Attention is directed to the following points in connection with the present invention, which tend to give this type of cable

clamp its "power" in gripping and holding a cable.

The tapered grooves 12, 13 being somewhat smaller than the diameter of the cable 3, at their bases 16, 16, it is evident that when the top section 1 is brought down on the cable under pressure of the bolt and nut used, that the cable is compressed into smaller compass, and a very strong clamping effect is produced on the cable. Moreover it is seen from Figure 8 that the outline of the cable 3 itself is somewhat distorted when compressed into the tapered grooves 12, 13, taking the shape shown in said Figure 8 with slightly non-circular outline.

It is evident that if the cable 3 were revolved in the grooves 12, 13, (were this possible) that the non-circular outline would at once form an obstacle to such revolution, especially in conjunction with the corrugations 6, 6 of the upper section 1.

Again it is obvious that the corrugations 6, 6 are designed to correspond in direction with the strands on the upper side of the cable, so that when the cable is under compression by the upper section 1, that said corrugations grip the individual strands of said cable and also tend to prevent revolution of the cable within the clamp. Both these features of the lower and upper section, to wit, the tapered grooves of the lower section, and the corrugations of the upper section tend to prevent revolution of the cable between the sections, the advantages of which feature will presently appear. The tapered grooves of the lower section also aids as before explained in greatly increasing the gripping effect of the lower and upper sections on the cable. It is apparent that when a load is placed on the cable end 22, and in a direction causing tension to the left as seen in Figure 1, that in order for the cable to be withdrawn from the clamp by said load, that the cable 3 tends to revolve between the two sections 1 and 2 in order to advance towards the left. This revolution of the cable is prevented by means of the great clamping effect produced by the tapered grooves 12, 13; by the distorted outline of the cable in the said grooves, and by the further means of the corrugations 6, 6 formed in the bottom face of the upper section 1 of the clamp; all of which features have been clearly explained above.

Another feature of the present clamp is the following. It will be seen from an inspection of Figures 1, 2 and 6 of the drawings, that when a load is applied on the end 22 of the cable 3, which it will be seen lies within groove 13 of Figure 2, that as the corrugations advance to the right, and approach the observer looking at Figure 2 of the drawings, that the strands on the top portion of the cable 3, will advance also towards the right as they tend to follow along the corrugations 6, 6. This being so it is evident that a lateral pressure is brought to bear by the strands of the cable 3 against the side wall 23 of the groove 13, which also adds to the frictional grip of the particular type of clamp under consideration, and accounts for its great holding power in service. What has been said with reference to the action of the cable with reference to groove 13, holds equally well with respect to groove 12, with the direction of the travel of the cable reversed, as is readily appreciated.

All the above described features combine to provide a cable clamp of great holding or gripping power, and of very simple construction, and with a small number of parts.

I claim:

In a clamp, a lower section provided with grooves of slightly smaller diameter at the base thereof than the diameter of the cable they are designed to receive, flaring mouths formed on each groove, an upper section having a series of corrugations formed on a flat surface, complementary to the strands of the cable, and adapted to increase the lateral pressure of the cable strands against the side walls of the lower section grooves when the cable is under load, and means for holding the sections in operative relation to each other.

In testimony whereof I affix my signature.

SUMPTER A. CLOWES.