Sept. 3, 1940. C. E. CRESWELL 2,213,363

MEANS FOR LASHING CABLES TO SUPPORTING STRANDS

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Fig. 1

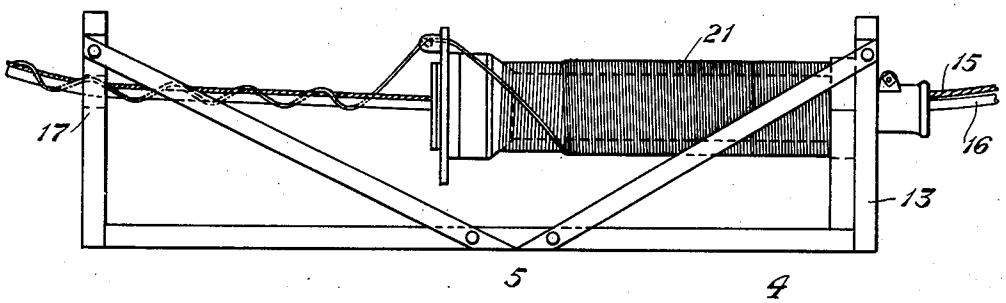


Fig. 2

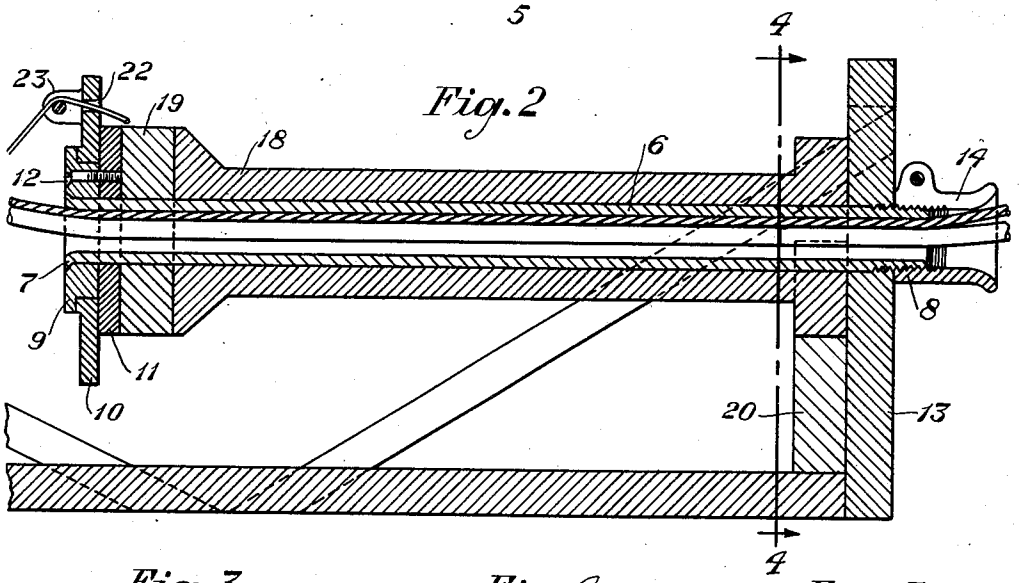


Fig. 3

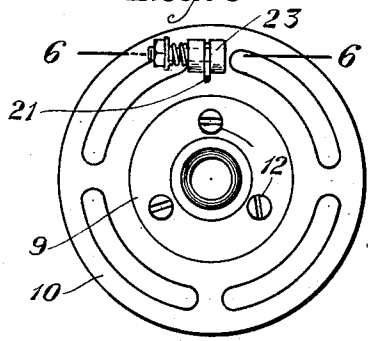


Fig. 4

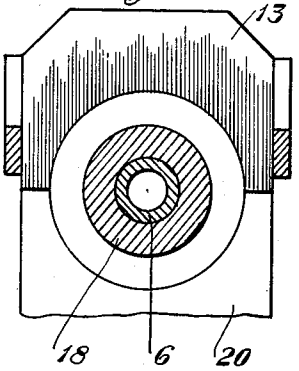


Fig. 5

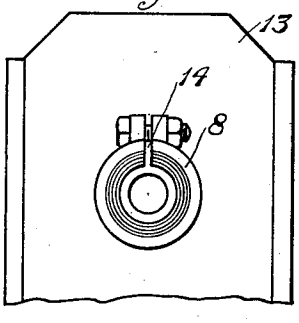
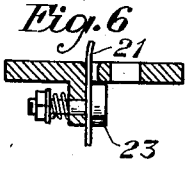


Fig. 6



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MEANS FOR LASHING CABLES TO SUPPORTING STRANDS

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Fig. 7

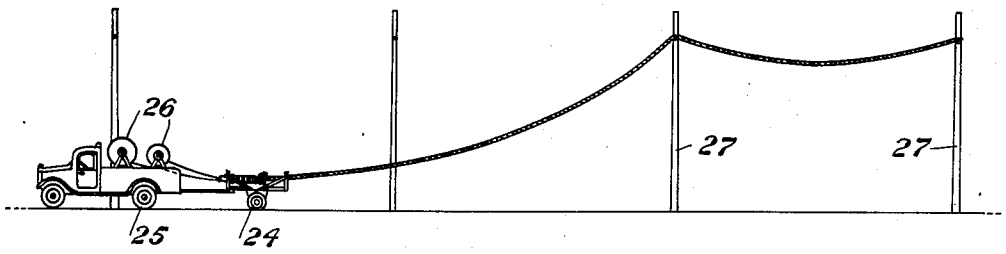


Fig. 8

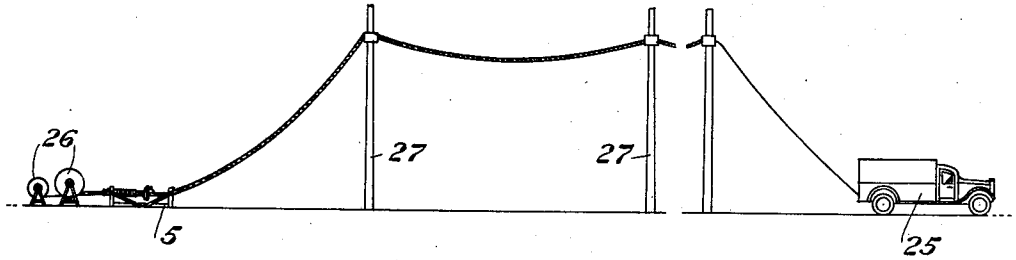
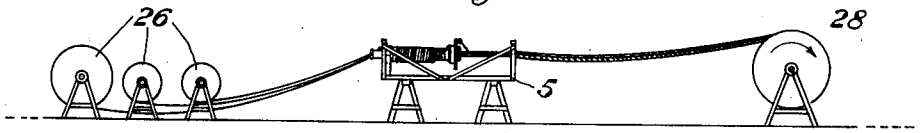


Fig. 9



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Patented Sept. 3, 1940 2,213,363

UNITED STATES PATENT OFFICE

2,213,363

MEANS FOR LASHING CABLES TO SUPPORTING STRANDS

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Application December 27, 1939, Serial No. 311,220

6 Claims. (Cl. 175—376)

This invention relates to improvements for lashing or securing aerial cables to messenger or supporting wires or strands.

It is one of the objects of this invention to secure aerial cables to supporting strands in an efficient manner, and in a minimum amount of time and at minimum expense.

Another object is to secure the above-mentioned elements together by a lashing which is applied throughout in substantially uniform spiral wrappings.

A further object is to provide adjustable means whereby a predetermined amount of tension is applied to the lashing wire to wrap it about the cable and strand as tightly as desired.

In accordance with present standard practices, aerial cables are supported on messenger strands by means of cable rings which are secured to the strand. The cable hangs loosely in these rings in spaced relation below the messenger strand.

The above practice has been found to present some serious disadvantages. For instance, the cables have been subjected to considerable damage from creeping, bowing, buckling, and other movements which have caused ring cuts, crystallization, and other damage. This damage, of course, is expensive to repair and also might interrupt service with consequent loss of revenue.

To remedy the above-mentioned disadvantages and eliminate the ring the present method has been devised. This method makes use of a stationary spool which has a rotatable head. The messenger or supporting wire and the cable pass through the axial opening or center of the spool, and lashing material of any suitable character is wound upon the spool. A rotary movement is imparted to the lashing wire as it leaves the rotatable head and the material is withdrawn therefrom by suitable pulling force, and this material is wrapped about the cable and messenger strand in substantially unform spiral layers as the cable and strand are pulled in accordance with the pull of the lashing material. The cable and supporting strand are secured together in this manner, and when so secured, movement between these elements is negligible.

Further features of this invention will be apparent from the following description when considered in connection with the accompanying drawings, in which

Figure 1 is a side elevation of the improved device;

Fig. 2 is a like view in section and with part of the supporting frame broken away;

Fig. 3 is an elevation of one end of the device illustrating its spinning or revolving head;

Fig. 4 is a section taken on the line 4—4 of Fig. 2;

Fig. 5 is an elevation of the end of the device opposite to that shown in Fig. 3;

Fig. 6 is a fragmentary section taken on the line 6—6 of Fig. 3, and showing a device by which the tension of the lashing material is regulated as it leaves the rotating head;

Fig. 7 is a schematic view showing the manner in which the cable and messenger wire, carried on reels mounted on a truck, are fed through the present improved device, mounted on a trailer, and on which is wound the material for lashing the cable and messenger wire together as the head of the device is rotated and cable and messenger wire are pulled therethrough;

Fig. 8 is a schematic view showing the reels of cable and messenger wire anchored on the ground with the improved device adjacent thereto and the lashed cable and messenger wire being pulled from the device by a truck; and

Fig. 9 is a schematic view showing a plurality of reels of material, which material passes through the improved device, and being bound together by the lashing carried thereby and later being wound upon a take-up reel.

Referring to the drawings, the reference 5 is applied to a frame of substantially rectangular formation upon which the improved device is firmly mounted. This device includes a feed tube 6 which is provided at one end with a flared portion 7 and at the other end with a threaded portion 8. A revolving element is mounted on the flared end portion of the tube, as more clearly shown in Fig. 2. This revolving element includes a retaining plate 9, a spinning head 10 and a back plate 11. Screws 12 securely clamp the plates and spinning head together. The flared end of the feed tube is seated in the countersunk opening of the plate 9 when the assembly is in position. The threaded end of the feed tube 6 extends through an opening in the end 13 of the frame 5. A clamping nipple 14 is secured to this threaded extension and serves to hold the feed tube and other parts of the assembly firmly in place on the frame. Cable 16 and messenger strand 15 are introduced through the nipple 14 and pass through the feed tube 6 and through an opening 17 in the frame opposite the nipple. The cable and messenger strand are drawn through the nipple, feed tube and opening in the frame by any suitable pulling force which may be applied to their ends.

A stationary spool 18 is mounted on the feed tube 6 and one of its ends abuts a bushing 19 which provides a bearing for the revolving element. The other end of the spool 18 is positioned on a seat 20 attached to the inner side of the vertical upright 13 of the frame. Layers of tape wire, or other lashing material 21, are wound upon the spool, and the loose end of this material is passed through an opening 22 in the spinning head, through a tension device 23 carried thereby, and through the common opening 17 in the frame through which the cable and messenger strand also pass. The tension device 23, as shown clearly in Figs. 3 and 6, includes a pair of parallel brackets extending outwardly from the spinning head. One of these brackets is provided with an opening through which a screw passes and adjusts the tension on the lashing material 21 as it travels through the brackets. The loose end of this material is attached with the ends of the cable and messenger strand to the same source of pulling force.

The improved device may be assembled by passing the feed tube 6 through the various elements of the spinning head until the flared end of the tube is seated in the countersunk face of the plate 9. The bushing 19 may be slipped over the tube and brought up snugly against the surface of the plate 11. The spool 18, with the lashing material which is wound thereon, is slipped over the feed tube so that one of its ends bears against the bushing. The threaded end of the tube is inserted through the opening in the end wall 13 of the frame and the nipple is applied to said end and drawn up tightly, thus locking the assembly firmly in the frame. The machine may be disassembled by a series of operations in reverse order to those just described.

In the operation of the device, the cable, strand or the like are threaded through the various elements as previously described, and attached to the pulling line or other arrangement. The loose end of the lashing material carried by the spool is passed through the opening 22 and adjusting device carried by the spinning head, through the opening 17 in the frame and attached to the same pulling line as that to which the cable and messenger wire are attached.

It will be understood that the spool 18 carrying the lashing material is held stationary so that as the cable and strand are pulled through the tube, the lashing material is pulled or withdrawn from the spool, and, as it leaves, a rotary motion is imparted thereto, which causes the material to be wrapped about the cable and strand in uniform spiral layers. The adjustable tension device mounted on the spinning head so regulates the tension of the lashing material as it leaves the spinning head that it is applied to the cable and strand as tightly as may be desired.

In Fig. 7 the device is shown mounted on a trailer 24. The trailer is attached to a truck 25 upon which reels 26 of cable and strand are mounted. A considerable length of the lashed-together cable and strand is paid out and their ends are anchored on a terminating pole of a series of poles 27, 27. As the truck and trailer are advanced, the composite cable is laid on the ground and later raised on poles by suitable tackle.

Fig. 8 shows reels of cable and strand and the improved device anchored on the ground. The lashed-together cable and strand are pulled from the device by a truck and raised by a tackle on successive poles as the truck advances.

In Fig. 9 the composite cable is drawn through the device from a plurality of reels 26 of material and wound upon a take-up reel in an obvious manner.

While there has been shown and described herein a certain preferred embodiment of the invention, it will be understood that various modifications and changes may be made therein without departing from the spirit of the invention as defined in the appended claims.

What is claimed is:

1. A device for securing a cable to a messenger strand, including non-rotating means upon which layers of lashing material are wound, said means having an axial opening therein through which the cable and messenger strand pass, and a head through which the lashing material passes, said head being rotatably operated upon the application of a pulling force to the lashing material to enable said material to be wound in spiral layers about the cable and messenger strand as they are simultaneously advanced by the same pulling force as that exerted on the lashing material.

2. A device for securing a cable to a messenger strand, including non-rotating means upon which layers of lashing material are wound, said means having an axial opening therein through which the cable and messenger strand pass, a head through which the lashing material passes, said head being rotatably operated upon the application of a pulling force to the lashing material to enable said material to be wound in spiral layers about the cable and messenger strand as they are simultaneously advanced by the same pulling force as that exerted on the lashing material, and means carried by the head to place the lashing material under a desired tension as it leaves the spool.

3. A device for securing a cable to a messenger strand by wrapping lashing material about said cable and strand, said device including a non-rotating spool upon which said lashing material is wound in layers, said spool having an axial opening through which the cable and messenger strand pass as longitudinal movement takes place between the spool on the one hand and the cable and messenger strand on the other, a head rotatable with reference to said spool and about said cable and messenger strand, said head having guiding means to thread the lashing material therethrough from the spool to the cable and messenger strand, whereby as longitudinal movement takes place between the spool and the cable and messenger strand the lashing is unwound from the spool and as it unwinds, the unwinding action of the lashing material causes the head to rotate and thereby wrap the lashing material spirally about the cable and messenger strand.

4. A device for securing a cable to a messenger strand by wrapping lashing material about them, said device including a spool upon which said lashing material is wound in layers, said spool having an axial opening through which the cable and messenger strand pass an longitudinal movement takes place between the spool on the one hand and the cable and messenger strand on the other, a head rotatable with reference to said spool and about said cable and messenger strand, said head having guiding means to thread the lashing material therethrough from the spool to the cable and messenger strand, whereby as longitudinal movement takes place between the spool and the cable and messenger strand, the lashing is unwound from the spool and, as it unwinds, the unwinding action of the lashing ma-

terial causes the head to rotate and thereby wrap the lashing material spirally about the cable and messenger strand, and means carried by the head to place the lashing material under a desired tension as it leaves the spool.

5. A device for securing a cable to a messenger strand, including a non-rotating spool upon which layers of lashing material are wound, said spool having an axial opening therein through which the cable and messenger strand pass, and a head through which the lashing material passes, said head being rotatably mounted on the spool and operated upon the application of a pulling force to the lashing material to unwind said material from the spool and wrap it in spiral layers about the cable and messenger strand as they are simultaneously advanced by the same pulling force as that exerted on the lashing material.

6. A device for securing a cable to a messenger strand, including a non-rotating spool upon which layers of lashing material are wound, said spool having an opening therein through which the cable and messenger strand pass, a head rotatably mounted on the spool, and a guide carried by the head through which the lashing material passes, said head being operated upon the application of a pulling force to the lashing material to unwind said material from the spool and wrap it in spiral layers about the cable and messenger strand as they are simultaneously advanced by the same pulling force as that exerted on the lashing material, and means associated with the guide to place the lashing material under a desired tension as it leaves the spool.

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