

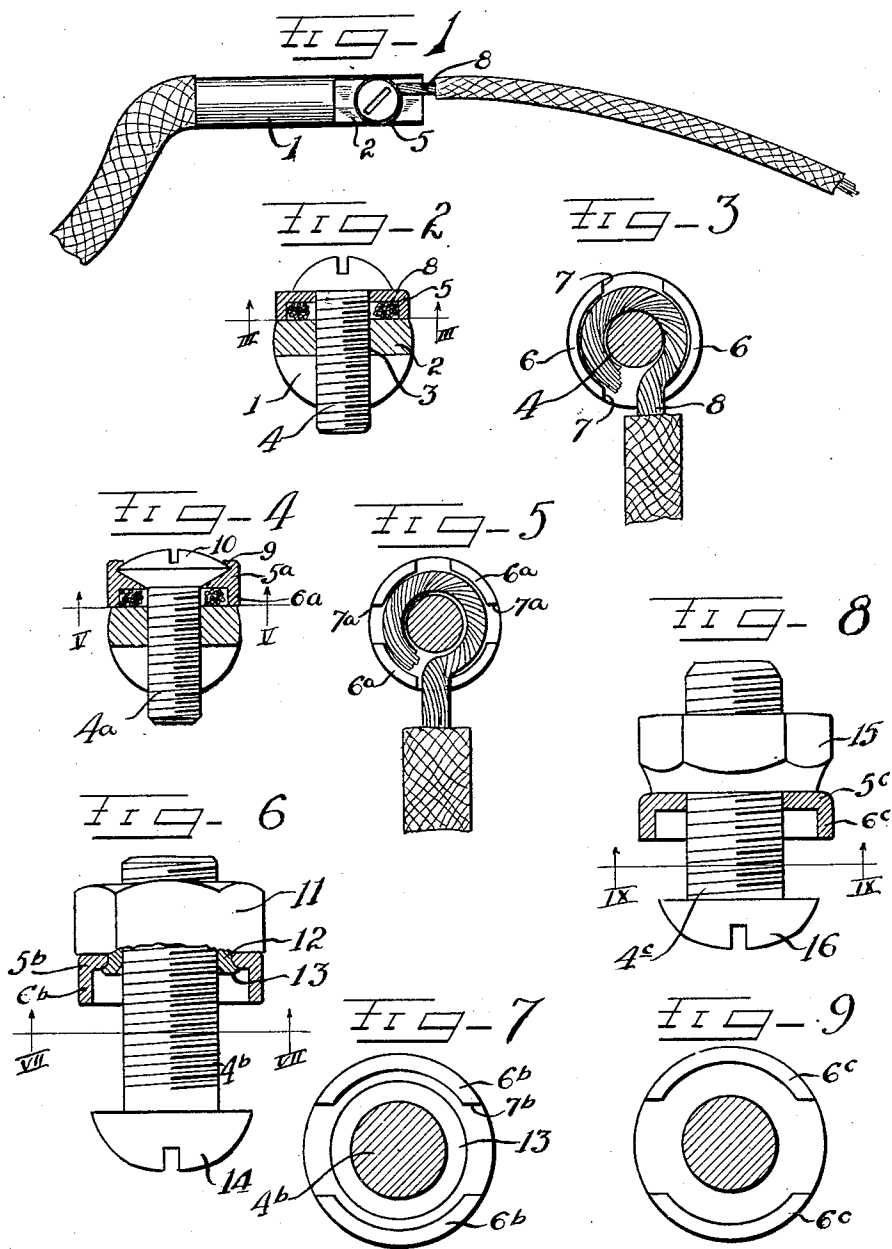
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TERMINAL CONNECTER

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INVENTOR
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UNITED STATES PATENT OFFICE

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TERMINAL CONNECTER

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This invention relates to terminal connectors, and more particularly to threaded terminal connectors, adapted to positively engage and retain the end of a conductor in contact with a terminal while the threaded means of the connector are tightened, and to securely hold the connector in contact with the terminal against the force of jerks and rough usage, until the threaded means are loosened.

Heretofore when a conductor was attached to a terminal by means of a threaded connector the practice has been to wrap the end of the conductor around the bolt of the connector and then to tighten the bolt or nut of the connector as the case may be. Sometimes by electricians and many times by laymen the end of the conductor is wound around the bolt in a direction opposite to that in which the bolt is turned to tighten it. This results, due to the pressure exerted by the tightening of the bolt or nut, in unwinding the end of the conductor and thereby practically, if not totally disengaging it from the terminal and requiring the process to be repeated. Usually in a connection made in this manner, the conductor by a slight jerk could be totally disengaged from the terminal, and frequently such connections become faulty and result in short or open circuits.

It is, therefore, an important object of this invention to provide means for securely retaining a conductor in contact with a terminal while being secured thereto by a threaded connector.

It is also an object of this invention to provide a threaded connector adapted to securely hold a conductor in contact with a terminal against the force of jerks and rough usage.

It is a further object of this invention to provide means for readily and easily securing a conductor to a terminal with the elimination of the possibility of a poor contact or faulty connection.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

On the drawing:

Figure 1 is a plan view of a terminal connector embodying features of the present invention.

Figure 2 is a vertical section through a terminal connection embodying a form of this invention.

Figure 3 is a sectional view taken substantially on line III—III of Figure 2.

Figure 4 is a vertical section through a terminal connection showing a modification of the present invention.

Figure 5 is a sectional view taken substantially on line V—V of Figure 4.

Figure 6 is an elevational view, with parts in section, of a terminal connector embodying a modification of the present invention.

Figure 7 is a sectional view taken substantially on line VII—VII of Figure 6.

Figure 8 is an elevational view with parts in section of a terminal connector embodying a further modification of the present invention.

Figure 9 is a sectional view taken substantially on line IX—IX of Figure 8.

As shown on the drawing:

The reference numeral 1 indicates a terminal with a flattened end 2 having a threaded aperture 3 therein. A bolt 4 is engaged in said threaded aperture 3, the terminal, in effect, acting as a nut for the bolt. Surrounding the bolt 4 is an inverted cup washer 5, provided with an integral annular flange 6. Passages 7 are provided in the flange 6 to permit the entrance therein, and exit therefrom if desired, of a conductor 8.

In the use of the invention the bolt 4 is encircled by a conductor or conductive cable 8, as shown in Figure 3, and the flanged washer 5 is placed over the conductor so that flange 6 will retain the conductor in its desired position while the bolt 4 is being securely fastened. Obviously, the flange 6 will retain the conductor in its desired position regardless of the pressure exerted by the tightening of the bolt 4. It is to be noted that the flange washer 5 may be inverted with respect to its position in Figure 2 so that the head of bolt 4 will press directly upon the conductor without departing from the principle of the present invention.

As shown in Figures 4 and 5 in a modification of the present invention, the flanged washer 5a having an annular flange 6a provided with passages 7a therein, is provided with an integral and substantially horizontal flange 9 which permanently and rotatably engages the head 10 of bolt 4a.

Figures 6 and 7 disclose a further modification of this invention. Reference numeral 11 indicates a nut having a threaded annular ring 12 depending therefrom and integral therewith, said ring 12 being flanged outwardly in its lower end, as shown at 13. A flanged washer 5b is permanently and rotatably secured to the nut 11 by the outward flange 13 on ring 12. The washer 5b is provided with a depending flange 6b having passages 7b therein. A bolt 4b is engaged by nut 11. In the operation of this modification a conductor is wound around bolt 4b and the nut 11 screwed down upon it. The head 14 of bolt 4b is adapted to enter the flange 6b and directly engage the conductor, passages 7b, of course, providing means for the end of the conductor to enter the flange 6b. Since the washer 5b is rotatable relatively to the nut 11, the washer and flange may be readily adjusted over the conductor and easily maintained in this position until the parts are tightened.

Figures 8 and 9 show the use with a bolt and nut of the form of this invention disclosed in Figures 2 and 3 and previously described. Reference numeral 5c indicates a washer with a depending annular flange 6c and which is not attached to nut 15, but which is merely shown abutting nut 15 for the purpose of more clearly illustrating the device. When the conductor is wound on the bolt and secured by the flange 6c, in a manner previously described, and the nut is tightened, the head 16 of the bolt 4c will enter the flange 6c and bear directly against the conductor.

From the foregoing it is apparent that I have provided a novel means for readily and easily connecting a conductor to a terminal, for insuring a permanent connection, and eliminating possibility of a faulty connection and the danger therefrom. Devices embodying the present invention are inexpensive to manufacture and may be assembled with a minimum of labor. They also save time and labor in the use thereof, and produce a much more effective result than those devices usually provided heretofore for the same purpose.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention and I, therefore, do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the character described, an electrically conductive bolt, an electrically conductive nut engageable therewith, and a

member permanently secured to said nut, said member having a flange extending therefrom for positioning over a conductor previously positioned about said bolt, said bolt head and said member being formed to clampingly engage said conductor when said head enters the flange of said member upon relative movement between said bolt and said nut, said member being rotatable relatively to said nut to maintain a position of adjustment relative to said conductor until the same is engaged by said bolt head.

2. In a device of the character described, an electrically conductive bolt and an electrically conductive nut engageable therewith, a flanged ring on one of said elements, a member associated with said flanged ring, and a passaged flange extending from said member for positioning over a conductor previously positioned around said bolt to hold said conductor against the top portion of said bolt when pressed thereagainst by relative movement between said bolt and said nut, said member being rotatable relatively to said ring whereby said member and flange may be quickly adjusted relatively to said conductor.

3. In a device of the character described, a pair of adjustably connectible and electrically conductive members, one of said members to be engaged by a conductor, and an element attached to the other of said members and having a flange-like portion extending therefrom for embracing and holding said conductor in conductive engagement with said first member when actuated by relative movement between said members, said element being rotatable relatively to both of said members whereby said element may be readily adjusted to a position for embracing said conductor.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

JOHN LOFGREN.