M. C. ROSENFELD.

DEVICE FOR SECURING CONDUCTORS TO JUNCTION BOXES.

APPLICATION FILED NOV. 16, 1911.

1,101,963. Patented June 30, 1914.

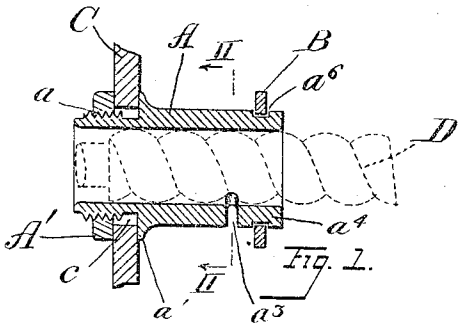

Fig. 1.

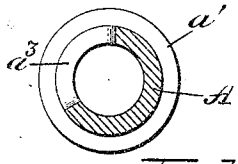

Fig. 2.

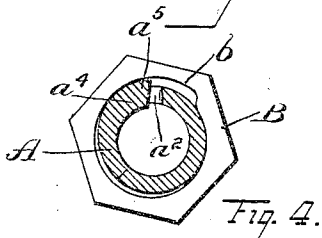

Fig. 4.

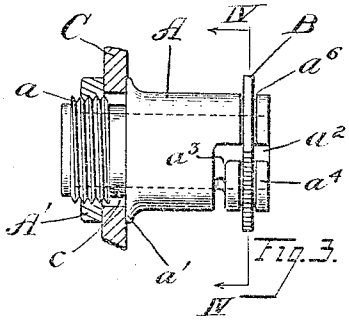

Fig. 3.

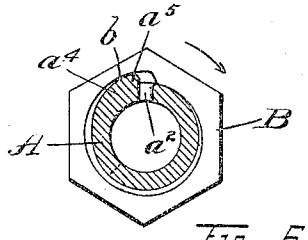

Fig. 6.

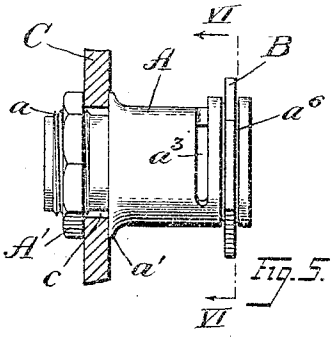

Fig. 5.

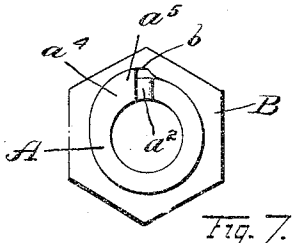

Fig. 7.

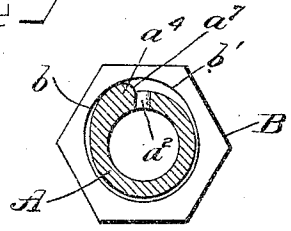

Fig. 8.

Witnesses

Herman Eisele

Winifred Fleming.

Inventor:

Mortimer C. Rosenfeld

By R. E. Merkel,

his Attorney

UNITED STATES PATENT OFFICE.

MORTIMER C. ROSENFELD, OF CLEVELAND, OHIO.

DEVICE FOR SECURING CONDUCTORS TO JUNCTION-BOXES.

1,101,963. Specification of Letters Patent. Patented June 30, 1914.

Application filed November 16, 1911. Serial No. 660,651.

To all whom it may concern:

Be it known that I, MORTIMER C. ROSENFELD, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Devices for Securing Conductors to Junction-Boxes, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to devices for securing conductors to junction boxes, its object being to provide a device of this character which will be economical in its construction, efficient in its operation, and which may be readily attached to a junction box.

The said invention consists of means hereinafter fully described and particularly set forth in the claims.

The annexed drawing and the following description set forth in detail certain means embodying my invention, the disclosed means, however, constituting but one of various mechanical forms in which the principle of the invention may be applied.

In said annexed drawing:—Figure 1 is an axial section of a device embodying my invention, and a fragmentary portion of the walls of the junction box to which it is attached, a flexible conductor being shown located therein in dotted lines. Fig. 2 is a section taken upon the plane indicated by line II—II of Fig. 1. Fig. 3 is a side elevation of the device embodying my invention, showing the parts in their closed position. Fig. 4 is a cross-section taken upon the plane indicated by line IV—IV in Fig. 3. Fig. 5 is a side elevation, showing the parts in their open position. Fig. 6 is a cross-section taken upon the plane indicated by line VI—VI in Fig. 5. Fig. 7 is an end view of the device, showing the parts in the same position in which they are illustrated in Fig. 5. Fig. 8 is a cross-sectional view illustrating a modified form of the invention.

My invention, as illustrated by the drawings, comprises two main parts—a sleeve A, and a locking device B mounted thereon as hereinafter described. The said sleeve is provided with an inner threaded portion a in the usual manner, which projects through an opening c formed in the walls C of the junction box. A nut A′ engages this threaded portion, and abuts the inner surface of the wall C, whereby it, in conjunction with the shoulder a' formed integrally on the sleeve A, secures the sleeve firmly to the junction box, as will be readily understood.

Cut through the outer end portion of the wall of the sleeve is a slot a^2, parallel with the axis of the sleeve, and joining at its inner end with a segmental slot a^3 also cut through this end wall portion and extending, in the form of the invention illustrated, about one-third the way around the circumference of the sleeve and at right angles to the slot a^2. It will, therefore, be seen that these slots form a portion a^4 of the sleeve which may be moved inwardly toward or outwardly from the axis of the sleeve, thereby forming a contractible sleeve portion. The end of the portion a^4 immediately adjacent to the slot a^2 is formed with a projection a^5 extending radially with respect to the axis of the sleeve, the outer extremity of this projection lying normally outside or beyond the normal diameter of the sleeve, as shown in Fig. 4. Parallel with the end of the sleeve and adjacent thereto, so as to also be formed in the movable portion a^4, is a groove a^6, the bottom of which is cam-shaped and part of which lies in the projection a^5. In this groove, and completely surrounding the sleeve, is seated the locking device B, which is preferably of hexagonal outer contour.

The inner surface of the locking device or member B is formed with a cam surface b, which extends spirally with reference to the axis of the sleeve. This cam surface is arranged in a manner such that when the locking member B is rotated or moved in the direction of the arrow indicated in Fig. 6, it will ride upon the portion a^4 and cause the same to be moved inwardly so as to contract the outer end of the sleeve, the opposite movement after such contraction effecting the opening of such end portion. The balance of the inner surface of the member B is of circular form, the diameter of such circle being slightly greater than the outer diameter of the sleeve. In assembling the sleeve and the locking member B, the portion a^4 is pressed inwardly by means of any suitable device so as to contract the diameter of this portion of the sleeve, and permit the locking device B to be slipped over the end thereof and permitted to lie in the groove a^6. Where the metal is not

of sufficiently elastic nature to cause the portion a^4 to spring back and the groove to engage the locking device, the said portion a^4 is expanded by force so as to effect its engagement, after which it will be seen that the locking device B is permanently mounted, and is therefore not subject to inadvertent displacement, removal from the sleeve, and consequent loss.

When it is desired to secure a conductor, such as the conductor D shown in dotted lines in Fig. 1, in the sleeve, the outer diameter of said conductor being slightly smaller than the inner diameter of the sleeve, the locking device B is moved into a position which will permit the member a^4 to assume its open position, as shown in Fig. 6, whereupon the conductor may be inserted in the interior of the sleeve. A movement of the locking member B in the direction of the arrow in Fig. 6 will then cause the member a^4 to be pressed inwardly against the conductor and lock same securely in place, the parts in this position being shown in Fig. 4. The opposite movement of said locking member will permit the member a^4 to move outwardly as a result of its own elasticity, and permit the said conductor to be readily removed.

The above described device may be modified as shown in Fig. 8, in which the two cam surfaces b and b' are provided, and the end of the member a^4 rounded, as shown at a^7, so that the movement of the locking member B in either direction will effect the contraction of the end of the sleeve, as will be readily understood. In this manner, a simple and effective means is provided for securing the end of a conductor in the sleeve, the parts being so arranged that they cannot be normally displaced, thereby eliminating the possibility of loss of the locking device.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:—

In a device for securing conductors to junction boxes, the combination with a hollow sleeve having its end portion formed with a longitudinal and a connecting transverse slot, whereby such end portion is rendered contractible; a groove formed in said contractible end portion having a cam-shaped bottom; and a nut completely surrounding said contractible end portion and seated in said groove, the inner surface of said nut being cam-shaped and adapted to engage the cam-shaped bottom of said groove.

Signed by me, this 9th day of November, 1911.

MORTIMER C. ROSENFELD.

Attested by:
CURT B. MUELLER,
WINIFRED FLEMING.