

Aug. 13, 1940.

E. FLANNELLY

2,211,561

TELEPHONE WIRE WINDER

Filed June 26, 1939

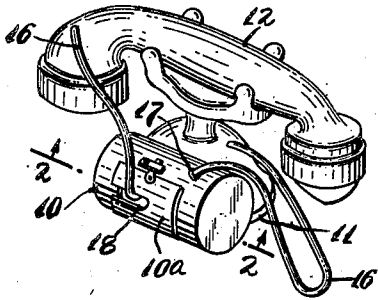


Fig. 1.

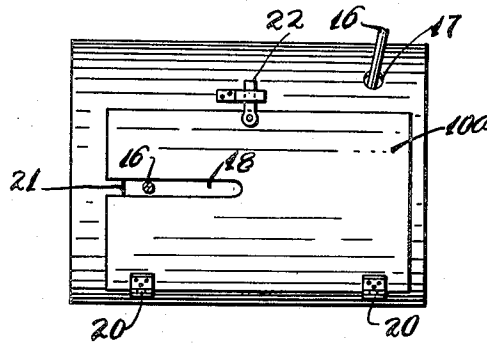


Fig. 5.

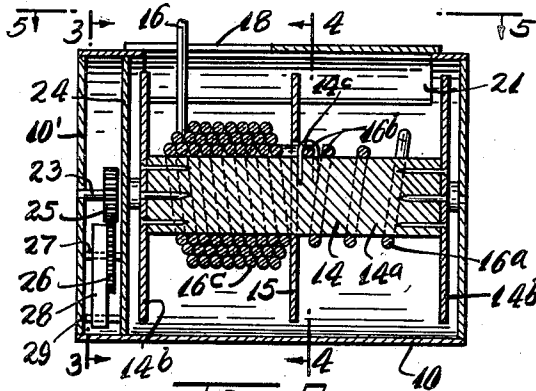


Fig. 2.

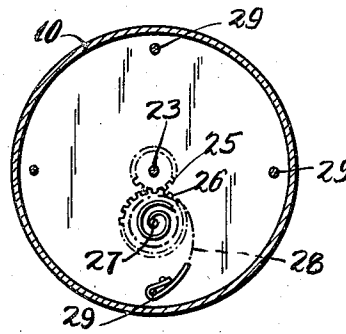


Fig. 3.

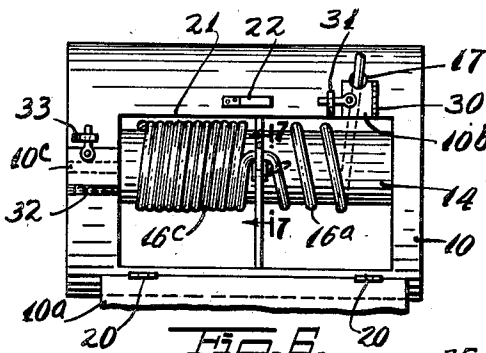


Fig. 6.

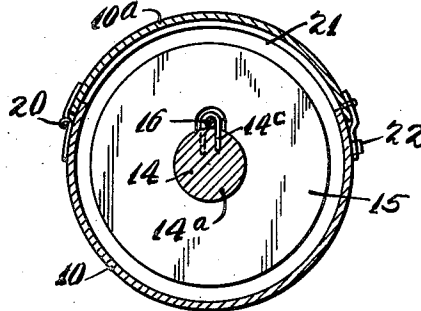


Fig. 4.

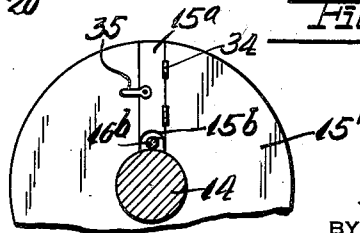


Fig. 7.

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## UNITED STATES PATENT OFFICE

2,211,561

## TELEPHONE WIRE WINDER

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Application June 26, 1939, Serial No. 281,099

4 Claims. (Cl. 242—108)

This invention relates to new and useful improvements in a telephone wire winder.

The invention has for an object the construction of a winder upon which a telephone wire may be placed in a manner so that when the wire is pulled, the winder leaves off one portion of the wire and draws in another portion of the wire and when the wire is released the reverse takes place. With a winder constructed in this way the necessity of contacts, engaging each other and relatively movable, has been avoided.

The telephone wire winder in accordance with this invention is particularly useful for a wire of a telephone transmitter and receiver. The winder will continue to normally draw in the telephone wire when the instrument is not being used and to pay it out as needed.

A still further object of this invention is to so construct the telephone wire winder so that the wire may be engaged thereon without requiring the wire of the telephone to be disconnected from the telephone instrument.

Still further the invention proposes the construction of a winder as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of a telephone with a telephone wire winder mounted thereon and constructed in accordance with this invention.

Fig. 2 is a longitudinal vertical sectional view of the wire winder.

Fig. 3 is a transverse vertical sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a vertical transverse sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is an elevational view looking in the direction of the line 5—5 of Fig. 2.

Fig. 6 is an elevational view similar to Fig. 5 but illustrating a modified form of the invention.

Fig. 7 is a fragmentary sectional view taken on the line 7—7 of Fig. 6.

The telephone wire winder in accordance with this invention includes a hollow casing 10 for attachment on the telephone body 11 of a telephone instrument having a receiver and transmitter 12. A drum 14 is rotative in the casing 10 and is normally in a neutral position in the

casing. This drum has a separator disc 15 dividing the same into two sections. The telephone cord 16 enters the casing 10 through an opening 17 in the side of the casing and has several turns 16<sup>a</sup> wound around one section of the drum then at the point 16<sup>b</sup>; it extends through the separator disc 15 and then it has a large number of turns 16<sup>c</sup> wound around the other section of the drum but wound in the direction opposite to the winding of the turns 16<sup>a</sup>. The few turns 16<sup>a</sup> continue into a portion of telephone wire which in the neutral position of the drum 14 is not wound on anything. Thus, when the drum is rotated, as will be hereinafter described, to unwind a certain number of turns 16<sup>c</sup> a like number of turns of the unwound portion of the telephone wire will be wound on top of the turns 16<sup>a</sup>. The telephone cord 16 leaves the casing 10 through the opening 18 in one side thereof.

The drum 14 comprises a cylindrical core 14<sup>a</sup> and end discs 14<sup>b</sup> attached to the ends of the core. The end discs 14<sup>b</sup> are of a size so as to be rotative upon the inside wall of the casing 10. The casing 10 is of cylindrical construction to accommodate the end discs 14<sup>b</sup>. The casing 10 is provided with a cover 10<sup>a</sup> which is hingedly mounted at one side by hinges 20 and which extends over and closes an opening 21 formed in the side of the casing 10. The opening 18 specifically is located in the cover 10<sup>a</sup> and is extended inwards from one side of the cover. The opening 18 preferably extends longitudinally of the drum 14 and substantially the entire length of that section of the drum which is provided with the turns 16<sup>c</sup>. A latch 22 is cooperative with one edge of the cover 10<sup>a</sup> and the material of the casing 10 adjacent this edge for holding the cover 10<sup>a</sup> closed when desired. The telephone cord 16 may be secured to drum 14 by staple 14<sup>c</sup> or the like.

Resilient means is provided for returning the drum 14 to its neutral position when it is moved out of this position. This resilient means includes a spindle 23 coaxially connected with the drum and supported in a partition 24 mounted transversely across the interior of the casing 10. This spindle 23 is also supported on one of the end walls 10' of the casing 10 which is removably mounted in the cylindrical portion of the casing. A gear 25 is mounted upon the spindle 23 and meshes with a much larger gear 26 mounted upon a spindle 27. A spiral spring 28 is wound around the spindle 27 and has one of its ends fixedly attached to the spindle and the other end fixedly attached to one of a plurality of sta-

tionary bars 29 mounted between the partition 24 and the end wall of the casing 10.

The operation of the device is as follows:

When the telephone instrument 12 is pulled off of the body 11, that portion of the wire 16 which is connected with the instrument will be pulled. This causes some of the turns 16<sup>c</sup> to unwind from the drum 14 depending upon how much of the wire is being pulled. As these turns unwind the drum 14 will be rotated, and winds up the spring 28. Simultaneously as the drum 14 rotates the other section of the wire 16 will wind itself upon the other section of the drum 14 adding to the turns 16<sup>a</sup>. When the telephone instrument 12 is replaced upon the body 11 the spring 28 will return the drum 12 to its neutral position, re-winding the turns 16<sup>c</sup> and letting off the excess turns 16<sup>a</sup>. A feature of the invention resides in the fact that the telephone wire 16 is controlled without interfering with the passage of current through it. Particularly there is no need for contact brushes engaging contacts or other mechanism to maintain the circuit of the electric current.

In Figs. 6 and 7 a modified form of the telephone wire winder has been disclosed which distinguishes from the prior form in the fact that it is of a construction which will permit the telephone wire to be engaged thereon without the necessity of disengaging one end of the wire. According to this form of the invention the casing 10 has a section 10<sup>b</sup> which connects with the opening 17. The section 10<sup>b</sup> is hingedly supported by a hinge 30 on one side, and is releasably fixedly held at the other side by a manually operable catch 31.

The casing 10 is also provided with another section 10<sup>c</sup> which connects one end thereof with the opening 21. This section 10<sup>c</sup> is hingedly supported at one side by a hinge 32 and at the other side is releasably fixedly held by a manual operable catch 33. The separator disc 15' is provided with a section 15<sup>a</sup> which extends from one side to the opening 15<sup>b</sup> through which the wire at the point 16<sup>b</sup> passes. The section 15<sup>a</sup> is supported on one side by hinges 34. At the other side the section 15<sup>a</sup> is provided with a manually releasable latch 35.

In other respects this form of the invention is identical to the prior form and identical parts may be recognized by the same reference numerals.

The telephone wire may be engaged upon and removed from the telephone wire winder in the following manner: To remove the wire from the winder it is first necessary that the section 10<sup>b</sup> be opened so that the wire may pass through the opening 17 and may be slipped to position to extend from the opening 21. Then the entire drum 14 together with the partition 24 and the end wall 10' is removed from the casing 10 by moving these parts towards the left. It is pointed out that the end wall 10' is rigidly connected with the partition 24 by the fastening elements 29. When the parts are moved from the end of the casing 10 it is necessary that the section 10<sup>c</sup> be opened to permit the wire to slip through this portion of the casing. The drum 14 and the parts connected with the drum have now been removed from the casing 10. The wire may be removed from the drum by unwinding the turns from the drum and by opening the separator disc section 15<sup>a</sup> so that the wire may be slipped out from the opening and be free of the separator disc 15'.

From this discussion of the way to remove the telephone wire from the winder it is believed that the way to rewind the wire on the winder will be quite clear and obvious.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In combination with a member having a stationary portion and removable element resting on said stationary portion, a hollow casing fixedly mounted on said stationary portion, a drum rotatively mounted in said casing and in a neutral position, a separator disc mounted on said drum dividing the same into two sections, and a continuous wire having one end attached to said stationary portion and its other end attached to said removable element, said wire having a portion extending from said stationary portion and entering said casing and wound several turns in one direction around one section of said drum, said wire having an intermediate portion continuing from said portion and extending through said separator disc, and said wire having a portion continuing from said intermediate portion and wound several turns in the opposite direction around the other section of said drum and extended from said casing to said removable element, whereby when said removable element is moved away from said stationary portion it causes that portion of said wire which extends from said casing to be unwound from said drum and that portion of said wire which extends into said casing to be wound on said drum, said casing being provided with movable sections covering openings through which the wire passes, and each of said sections being movable to a position to permit the wire to be moved through the openings.

2. In combination with a member having a stationary portion and removable element resting on said stationary portion, a hollow casing fixedly mounted on said stationary portion, a drum rotatively mounted in said casing and in a neutral position, a separator disc mounted on said drum dividing the same into two sections, and a continuous wire having one end attached to said stationary portion and its other end attached to said removable element, said wire having a portion extending from said stationary portion and entering said casing and wound several turns in one direction around one section of said drum, said wire having an intermediate portion continuing from said portion and extending through said separator disc, and said wire having a portion continuing from said intermediate portion and wound several turns in the opposite direction around the other section of said drum and extended from said casing to said removable element, whereby when said removable element is moved away from said stationary portion it causes that portion of said wire which extends from said casing to be unwound from said drum and that portion of said wire which extends into said casing to be wound on said drum, said casing being provided with movable sections covering openings through which the wire passes, and each of said sections being movable to a position to permit the wire to be moved through the openings, and

each of said sections being movable to a position to restrict the removing of the wire.

3. In combination with a member having a stationary portion and removable element resting on said stationary portion, a hollow casing fixedly mounted on said stationary portion, a drum rotatively mounted in said casing and in a neutral position, a separator disc mounted on said drum dividing the same into two sections, and a continuous wire having one end attached to said stationary portion and its other end attached to said removable element, said wire having a portion extending from said stationary portion and entering said casing and wound several turns in one direction around one section of said drum, said wire having an intermediate portion continuing from said portion and extending through said separator disc, and said wire having a portion continuing from said intermediate portion and wound several turns in the opposite direction around the other section of said drum and extended from said casing to said removable element, whereby when said removable element is moved away from said stationary portion it causes that portion of said wire which extends from said casing to be unwound from said drum and that portion of said wire which extends into said casing to be wound on said drum, said casing being provided with movable sections covering openings through which the wire passes, and each of said sections being movable to a position to permit the wire to be moved through the openings, and each of said sections being movable to a position to restrict the removing of the wire, and means for holding said sections in a position in which they restrict the removing of said wire.

4. In combination with a member having a

stationary portion and removable element resting on said stationary portion, a hollow casing fixedly mounted on said stationary portion, a drum rotatively mounted in said casing and in a neutral position, a separator disc mounted on said drum dividing the same into two sections, and a continuous wire having one end attached to said stationary portion and its other end attached to said removable element, said wire having a portion extending from said stationary portion and entering said casing and wound several turns in one direction around one section of said drum, said wire having an intermediate portion continuing from said portion and extending through said separator disc, and said wire having a portion continuing from said intermediate portion and wound several turns in the opposite direction around the other section of said drum and extended from said casing to said removable element, whereby when said removable element is moved away from said stationary portion it causes that portion of said wire which extends from said casing to be unwound from said drum and that portion of said wire which extends into said casing to be wound on said drum, said casing being provided with movable sections covering openings through which the wire passes, and each of said sections being movable to a position to permit the wire to be moved through the openings, said separator disc being also provided with a movable section openable to permit said wire to be slipped out from the separator disc, said drum being removable from said casing in a way to permit said wire to be removed from said casing without its removal from said drum.

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