Jan. 16, 1962 A. J. NOFFKE 3,017,136

UNREELER TO UNWIND ROLLS OF ELECTRICAL WIRE

Filed June 13, 1960 2 Sheets-Sheet 1

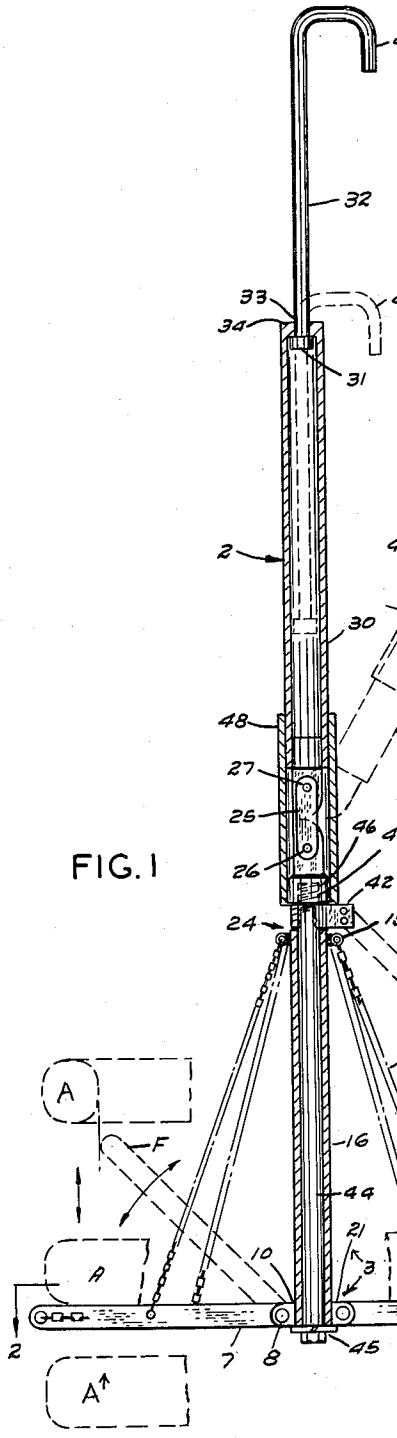


FIG. 1

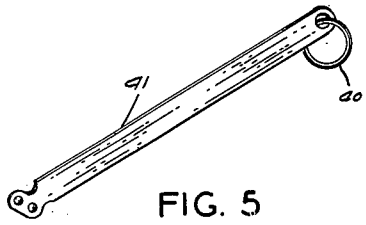


FIG. 5

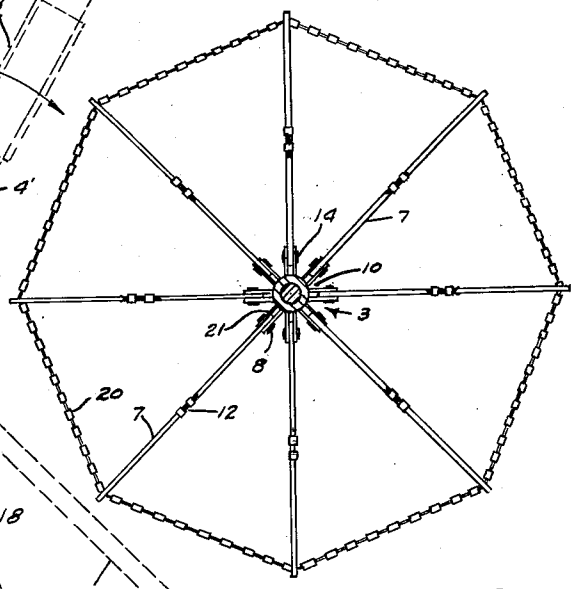


FIG. 2

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UNREELER TO UNWIND ROLLS OF ELECTRICAL WIRE

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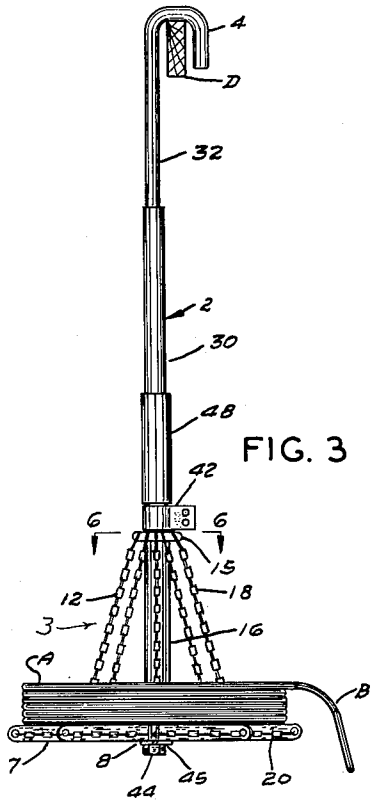


FIG. 3

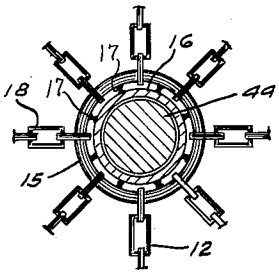


FIG. 6

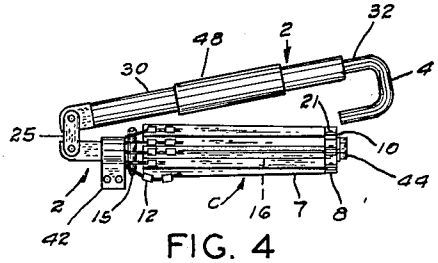


FIG. 4

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3,017,136

UNREELER TO UNWIND ROLLS OF ELECTRICAL WIRE

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Filed June 13, 1960, Ser. No. 35,539
3 Claims. (Cl. 242—129)

This invention pertains to an unreeler to unwind rolls of electrical wire or the like.

One of the objects of the present invention is to provide an unreeler which is portable and in which all the parts may be folded so as to make a bundle which will fit into an electrician's tool box or tool kit.

Another object is to provide a device which will receive and hold a roll of electric wire, conductor or the like, and which will premit the roll to be unreeled so that the wire does not kink, bend or abraid during the process.

Still another object is to provide a device, as above described, wherein no parts are longer than the average length of an electrician's tool kit; that is, approximately 18 inches.

Still another object of the invention is to provide an unreeler which may be placed in working condition without support from the floor of the building wherein it is used but which may be entirely supported from overhead members such as ceiling rafters, beams, or the like.

Still another object is to provide an unreeler for coils of electrical conductor wires constructed so that the coils may be placed on the supporting portion of the device while it is supported and without disturbing the means of support.

Still another object is to provide an unreeler, as above described, wherein coils or rolls of wire to be used in wiring habitations may be placed on it while it is suspended from overhead members of the building and unreeled as desired without kinking, bending or abraiding.

Still another object is to provide a device of the character above mentioned wherein all spider arms of the reel may be folded upon the central stem member without unhooking or unlatching any of the connecting parts of the spider reel.

Other objects will appear hereinafter.

I attain the foregoing objects by means of the parts, combinations of parts and peculiar shapes of the parts as illustrated in the accompanying drawings, wherein—

FIGURE 1 is a side elevational view of my unreeler with the central portion shown in section to better illustrate the construction;

FIGURE 2 is a plan view of the unreeler shown in FIGURE 1, with the central supporting stem sectioned off as indicated on line 2—2 of FIGURE 1;

FIGURE 3 is a side elevational view of the unreeler, drawn on a slightly smaller scale and shown with the coil of wire in place and ready to be uncoiled from the coil;

FIGURE 4 is a side elevational view of the device in its folded and collapsed shape when it is to be transported in an electrician's carrying case;

FIGURE 5 is a perspective view of the unreeler arm through which the electrical conducting wire may be drawn to prevent kinking;

FIGURE 6 is a plan view of the central portion of the unreeler taken substantially on line 6—6 of FIGURE 3 and drawn on an enlarged scale.

Similar numerals refer to similar parts in the several views.

The central supporting stem 2 carries a spider type reel 3 at its lower end and is provided with a hook 4 at its upper end.

The reel proper is formed from a plurality of radially disposed spider arms 7 which are pivotally attached at

8, in each instance, to a hub 10, on central tube 16 of reel 3.

At substantially the middle of each of the radial arms 7 chains 12 are attached by pins or bolts 14. At the upper ends of chains 12, they are attached to a ring 15 which surrounds the central tube 16 and is spaced from it by lugs 17 as shown in FIGURE 6. These chains may be termed the core chains and their assembly forms a cone shaped core, generally indicated by numeral 18, on which a roll of wire to be uncoiled may be placed. This roll is indicated by dotted outline A in FIGURE 1 and by the letter A, as shown in solid lines, FIGURE 3. The coil A rests on the outer portions of the spider arms 7 and is centered by the group of chains 18.

In addition to the chains 12 there are perimeter chains generally indicated by numeral 20. These chains connect the outer ends of spider arms 7. There are equal lengths of these chains extending between the outer end portions of each spider arm and, therefore, when the arms are in radially extended position, as shown in FIGURES 1 and 3, they are held in equally spaced relation by the lengths of chain between each arm. Chains 20 are linked together at their connections to each of the spider arms, and considered as a group form a continuous perimeter chain.

The inner ends of the arms are pivotally attached meanwhile to hub 10 by slotted members 21 and the pins 8.

The central stem 2 is divided into parts so that it may be folded. The base part 24 is connected by a link 25, which is pivotally pinned at 26 to the link and by pin 27 to the lower end of the next upper stem part 30. This upper stem part is tubular and within it there is a guide piston 31 which carries a rod 32. This rod slides in a hole 33 in the semi-closed end 34 of upper part 30. The rod 32 has a hook 4 formed at its upper end. This is shaped so that it may be hooked over horizontal wooden members of a building structure as desired. The rod is the topmost stem part.

As a result of this sectional structure of the stem it is foldable and telescopic. This permits the central stem, as such, and as indicated by numeral 2, FIGURE 4, to be folded, with the part 30 folded upon the part 16 and with the outer stem part 32, telescoped within part 30.

When all the radial arms are folded upward toward and lie parallel to the tube 16, they assume the shape shown at "C," FIGURE 4, and when the part 30 is folded upon the part 16 the entire structure is compacted, as shown in FIGURE 4 and is not longer than the average tool kit or case of an electrician.

In order to properly unroll wire indicated at "B," in FIGURE 3, from the roll "A" and also indicated at "B'," FIGURE 1, it is necessary to provide an eye 40 through which the wire may run. Eye 40 is held in the radially extending arm 41 which is pivoted at its upper end to a bracket 42 which has a circular part which clamps onto the stem shaft 44. Normally the arm 41 extends outward and downward from the point of attachment of the bracket 42 which is at the top of the shaft 44. In order to journal tube 16 on the upper portion of the core marked 30, a long bearing shaft 44 extends thru tube 16 and threads into a hole 46 in the lower end of the stem part 47. The bolt head washer 45 carries the load of the reel 3 and coil A. The double hinging of link 25 makes possible the fold-over arrangement shown in FIGURE 4. In order to hold the central stem stiff when it is in operative position, as shown in FIGURE 1, there is a sleeve 48 which slides down the tubular portion 30 of the upper portion of the stem and onto the round internally threaded stem portion 47. This sleeve, when in place, renders the double pivoted joint on link 25 inoperative and the stem acts as a stiff, solid one-piece unit.

The reel 3, which includes the tube 16, chains 18 and 20, hub 10, and spider arms 7, rotates on bolt shaft 44, and washer 45 at the bottom acts as a thrust bearing to sustain the load of coil A and reel 3.

In use the hook 4 is placed over any portion of the structure of the house which is to be wired, such as the joist "D." The device is then extended and expanded to its operative form, as shown in FIGURE 3.

A coil of wire to be unreeled, A, is then lifted upward and over the arms 7. The arms hinge upward as the coil passes over them for the reason that the chains 18 permit this upward motion and the perimeter chains 20 also permit the arms to fold upward and move together mutually as they are folded upward as indicated by the dotted outline "F." This permits the coil to be raised above the arms which then return to their original radial position. The coil is then lowered onto the arms, as shown at "A" in FIGURE 3.

Wire B unreeled from the coil A is then threaded through the ring 40 and drawn out to the place where it will be used in wiring the building. After a sufficient length is drawn out through the ring 40 the wire is cut off and an additional length drawn out from the coil "A."

After the wire is used and it is desired to transport the device, the upper portion of the central stem is telescoped, as shown in dotted lines 4', FIGURE 1, then the sleeve 48 is slid upward to the position indicated at 48', FIGURE 1, and the upper part of the central stem hinged toward the lower part 44. At the same time the radial arms 7 are hinged upwardly to positions parallel with stem portion 16 and the arm 41 is hinged downward to a position parallel with stem part 44. As a result of this, a very compact and folded part, shown in FIGURE 4, is produced.

The above illustrations and description should be considered as illustrative only and not as limiting the construction and/or operation of the device.

I claim:

1. An unreeler for holding and unwinding rolls of electrical conductor wire, composed of a central stem having a lower part and an upper part, a folding double hinge joint connecting said upper and lower stem parts and a top stem part telescoping within said upper stem part, a reel for mounting and centering a coil of wire to be uncoiled having a central tube rotatable on the said lower stem part, and having a plurality of pivotally attached radially extending spider arms; chains extending from the upper portion of said reel central tube to intermediate points on said spider arms to form supports for said arms,

peripheral chains extending between the outer ends of said spider arms, a sleeve slidable on the upper part of the stem and slidable downwardly to cover said double hinge joint and render said double hinge joint inoperative, when desired, and a hook on the upper end of said telescoping top part of said stem for mounting the unreeler on a horizontal beam.

2. The reel as described in claim 1, in combination with a radially extending arm having an eye to receive a wire strand from a coil being unreeled, attached to its outer end and being pivotally attached to the upper non-rotating part of said central stem and extending outward and downward therefrom.

3. An unreeler for coils of electrical conductor wire, consisting of a reel support having a central stem with an upper part and a lower part joined by a double link joint pivoted at each end to the adjacent ends of said stem parts, a top stem part telescopically held in the upper part of said stem and having a hook at its upper end for attachment to horizontal members of a building; a reel composed of a central tube, journalled to rotate on the lower central stem part, a plurality of radially extending spider arms pivotally attached to the lower end of said tube, and adapted to be positioned parallel to said tube, when collapsed, and to extend radially outward from said tube to form the arms of the reel; a ring attached to the upper end of the said tube, spider arm positioning chains extending from said ring to intermediate positions on each of said spider arms, a peripheral positioning chain joining the outer ends of said spider arms, a sleeve slidable on the upper part of said central stem to cover the double link joint in said stem, when desired, and render said double link joint inoperative, a radially extending arm attached to the upper end of said lower central stem part having an eye ring at its outer end to receive wire being unreeled from a coil supported on said spider arms; said central stem being foldable upon itself at said double link joint and the upper top part thereof telescoping into the upper hinged part; said spider arms being foldable to positions parallel with the lower stem part to collapse said reel; said central tube spider arms and supporting chains forming a reel rotatable on said reel support when in radially extended position, and being adapted to fold to carrying position when folded to positions parallel with said stem.

No references cited.