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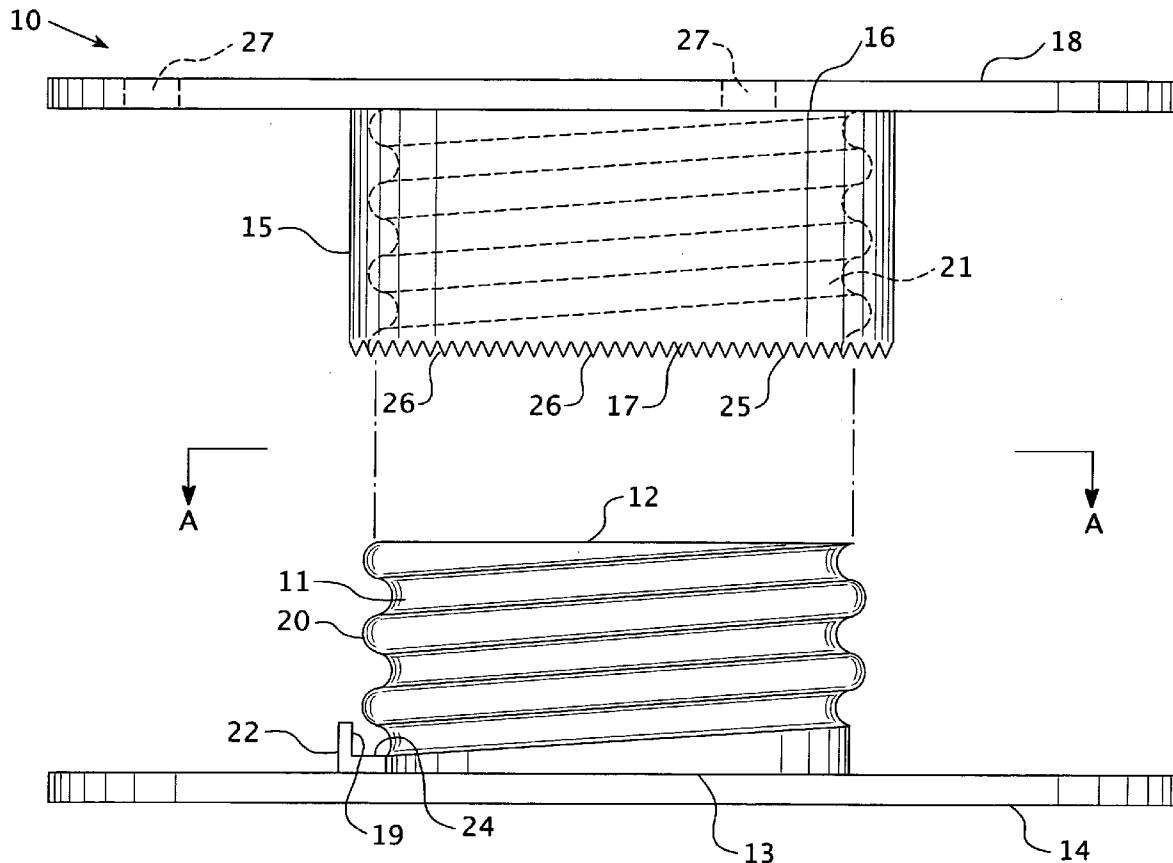
(19) **United States**(12) **Patent Application Publication****Maley**(10) **Pub. No.: US 2009/0008494 A1**(43) **Pub. Date:****Jan. 8, 2009**(54) **SPOOL ASSEMBLY FOR DISPENSING A COIL OF WIRE**(52) **U.S. Cl. 242/608.5**(57) **ABSTRACT**(76) **Inventor:** **William H. Maley**, Oakland, MD (US)

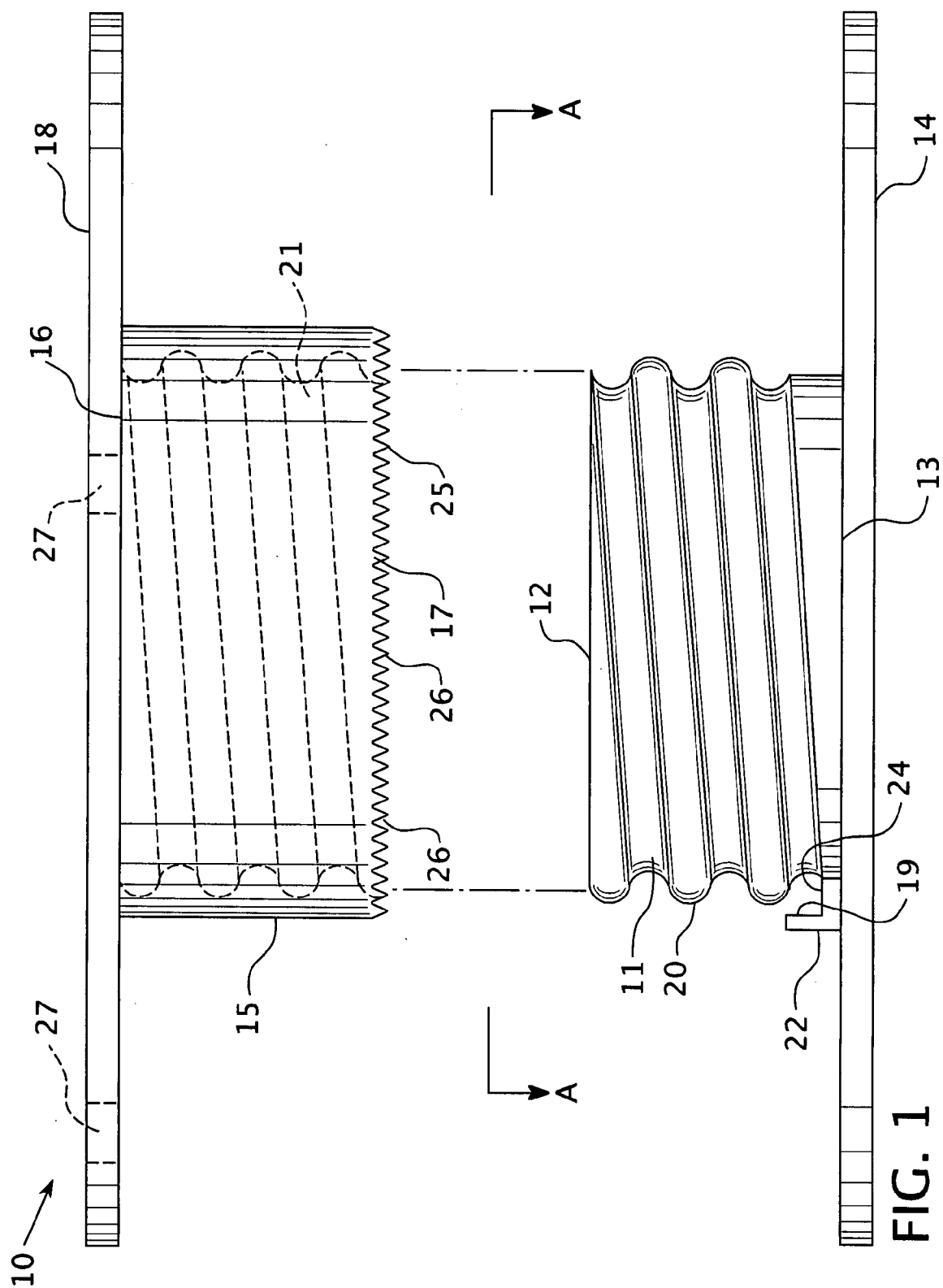
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B65H 75/18

(2006.01)

A spool assembly for dispensing a coil of wire, such as Romex, wherein a first cylindrical core having top and bottom ends, and provided with a circular radially extending flange secured to the bottom end, is provided in combination with a second cylindrical core having top and bottom ends and a circular radially extending flange secured to the top end of this second core. The first and second cores are threadably engageable with each other for thereby drawing the flanges towards each other to form a spool with the Romex coil retained in the spool assembly. A core tail end retainer is provided on the first core to retain the tail end of the wire coil and a clamping mechanism is provided on the second core for engaging the core tail end of wire retained in the afore-described retainer in clamping engagement when the cores are fully threadably engaged. A hand grip is also provided and is slidably received in the core assembly for axial rotation of the spool assembly thereon for easy hand dispensing of the Romex coil, and a removeable center core is also provided to permit rotation of the spool assembly on a shaft.





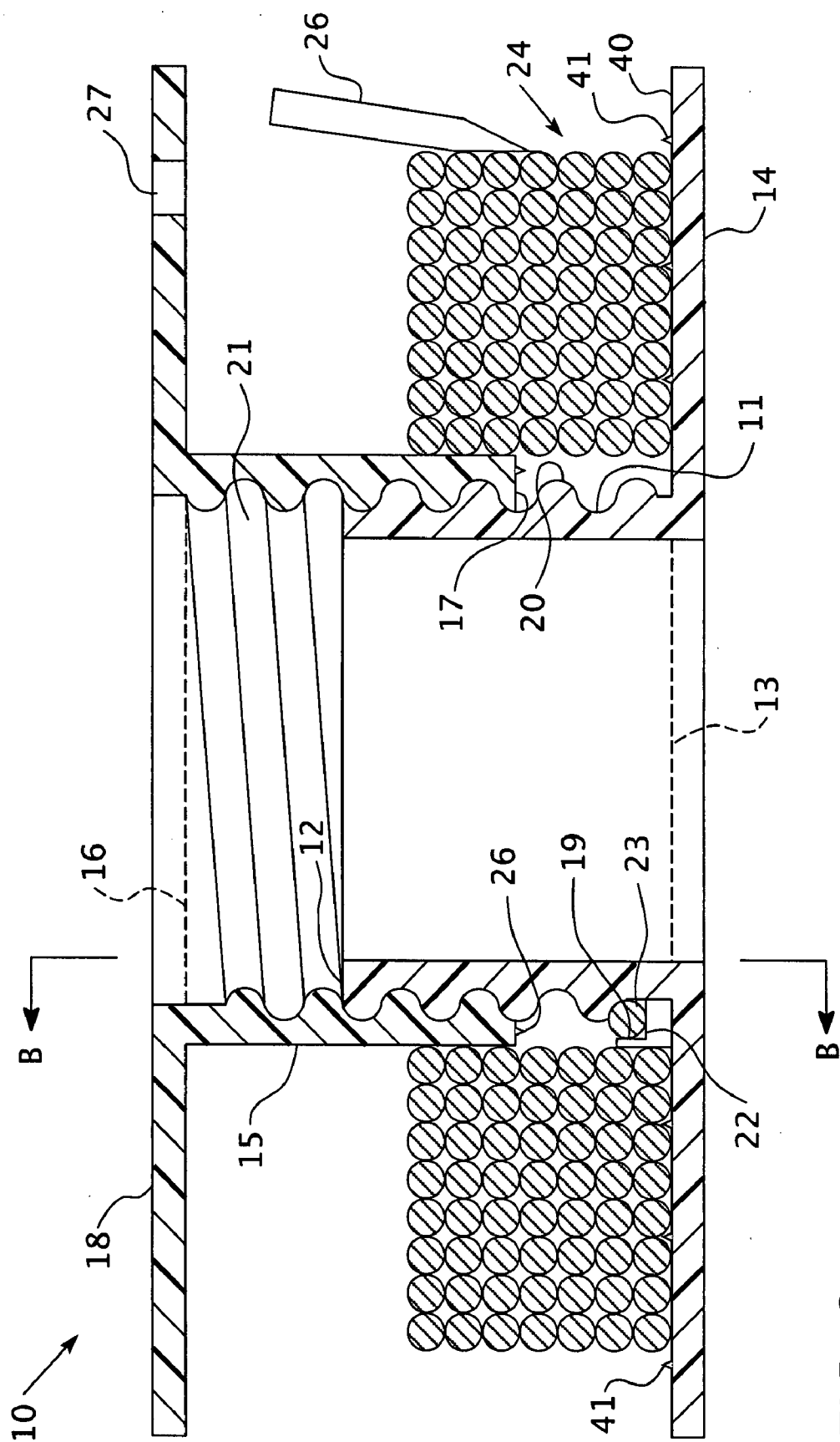


FIG. 2

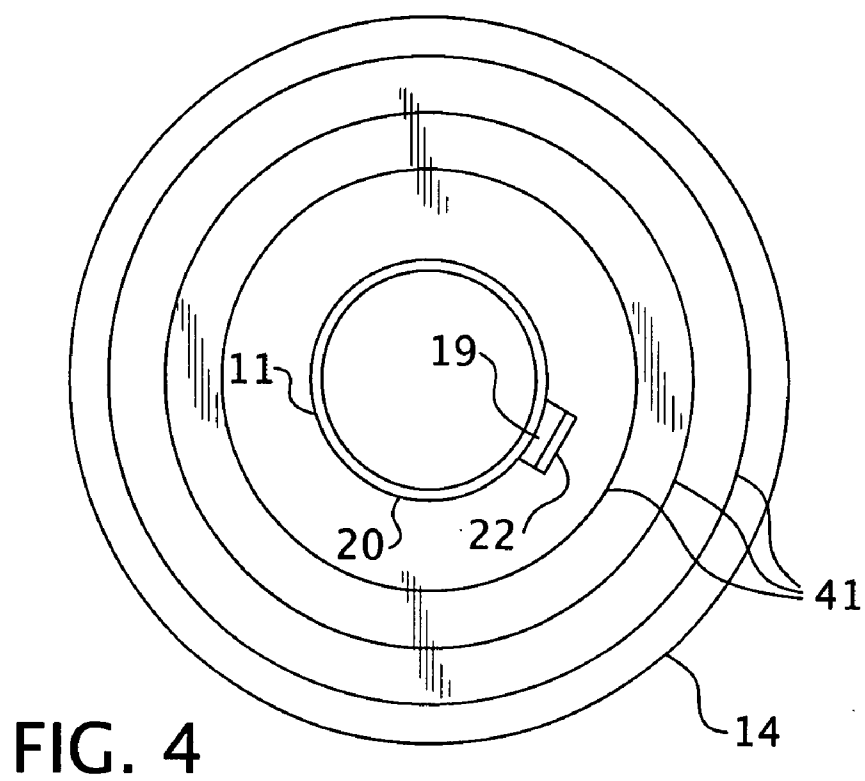
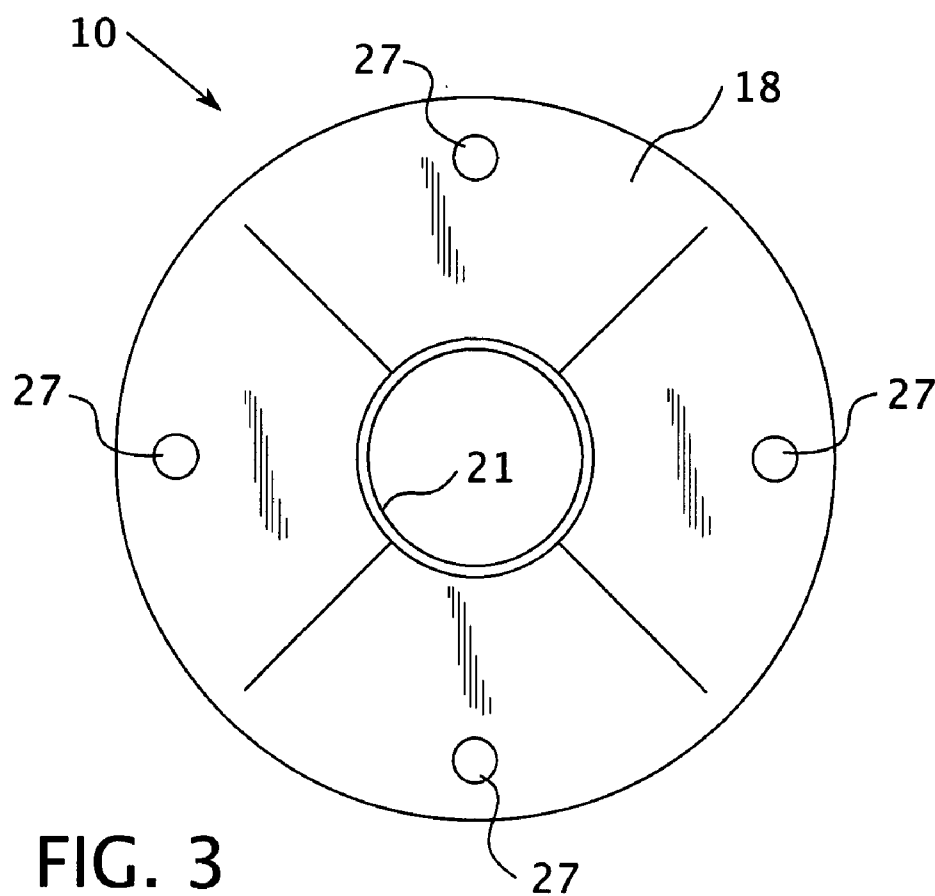


FIG. 6

FIG. 8

SPOOL ASSEMBLY FOR DISPENSING A COIL OF WIRE

FIELD OF THE INVENTION

[0001] The present invention relates to a spool assembly and to the dispensing of coiled wire from the spool.

BACKGROUND OF THE INVENTION

[0002] In the field of commercial and residential electrical wiring, Romex wire is shipped in coils from the factory to retail and wholesale electrical supply houses in a thin clear plastic sheet or a cardboard box. The Romex is generally provided in 250 foot rolls or less for number 14-2 or number 12-2 Romex, number 14 or number 12 American Wire Gauge (AWG) with two conductor wires plus a ground wire.

[0003] The factory container is adequate for distribution to the consumer, but provides a very inadequate or poor dispensing device. The 250 foot coil acts similar to a spring that needs to be straightened out, and without special care in handling, it can turn into a ball of coiled knots and kinks. This is because the wire coil is presented whereby it must be pulled from the side of the coil.

[0004] Accordingly, it is a principal object of the present invention to provide an apparatus for efficiently and effectively dispensing the coiled Romex, or other wire.

SUMMARY OF THE INVENTION

[0005] The dispensing apparatus of the present invention for dispensing a coil of wire is provided in the form of a spool assembly which is comprised of a first cylindrical core having top and bottom ends with a circular radially extending flange secured to the bottom end of the core, and a second cylindrical core having top and bottom ends with a circular radially extending flange secured to the top end of this second core. The first and second cores are threadably engageable with each other for thereby drawing the flanges together toward each other to form a spool with the unpackaged coil of wire retained between the flanges.

[0006] A retaining mechanism is provided on the first core for retaining a core tail end of a wire coil to be retained in the spool, and a clamping mechanism is provided on the second core for engaging the core tail end of wire that is retained in this retaining mechanism in clamping engagement when the cores are fully threadably engaged.

[0007] In a preferred embodiment, the second core has internal threads threadably engageable with external threads on the first core for providing the threaded engagement and the bottom end of the second core provides the clamping mechanism. This bottom end of the second core may include a series of teeth for engaging a core tail end of the wire retained in the aforesaid retaining mechanism. The retaining mechanism for the core tail end may in one embodiment take on the form of a wedged shaped groove for initially retaining a core tail end of the wire coil.

[0008] The spool assembly is preferably constructed of plastic, as by injection molding.

[0009] The inner core end of the roll of Romex is inserted and retained in the wedge shaped groove for initially retaining the core tail end of the wire coil. This is done when the unpackaged roll of Romex is initially placed over the first cylindrical core. Thereafter the second cylindrical core is threadably engaged with the first cylindrical core and screwed thereon to bring the flanges together and thereby sandwich

the Romex coil between the spool flanges until the bottom end of the second core engages the captured core tail end with the series of teeth to thereby clamp the coil core tail end in the retaining mechanism provided in the first cylindrical core.

[0010] Accordingly, the factory roll of Romex can be unreeled from the Romex dispenser of the present invention very easily with no twists, kinks or knots in the wire by grasping the outer core end of the Romex end spooling it off the spool assembly of the present invention.

[0011] A hand grip for the spool assembly of the present invention may also be provided whereby the handgrip is slidably received in the cores for axial rotation of the spool thereon whereby one may hand dispense the coiled wire by gripping the handgrip with one hand and with the other hand pulling the Romex off the roll or coil as the spool assembly of the present invention rotates on the handgrip.

[0012] Once the Romex is cut to length, the excess cable can be recoiled back onto the remaining coil of Romex and the free end of the Romex can be inserted through one of four holes provided in an outer flange of the spool assembly, pulled tight and there bent to retain the coil on the spool assembly.

[0013] In addition, footage indicators are also preferably provided on the inner side of at least one of the flanges so that one can precisely estimate the amount of Romex remaining on the spool assembly.

[0014] The spool assembly of the present invention is constructed of materials that are extremely light in weight, yet will be very affordable and provide the user with a durable tool that can be used for many years.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Other objects and advantages appear hereinafter in the following description and claims. The accompanying drawings show, for the purpose of exemplification, without limiting the invention or the appended claims, certain practical embodiments of the present invention wherein:

[0016] FIG. 1 is an exploded front view of the spool assembly of the present invention illustrated in an unassembled condition;

[0017] FIG. 2 is a view in vertical mid cross section of the spool assembly shown in FIG. 1 illustrated as being in a partially assembled condition with an unpackaged coil of Romex wire contained therein;

[0018] FIG. 3 is a top view of the spool assembly shown in FIGS. 1 and 2 in assembled condition;

[0019] FIG. 4 is a top view of the lower portion of the spool assembly shown in FIG. 1 as seen along section line A-A;

[0020] FIG. 5 is a sectional view seen along section line B-B of FIG. 2 illustrating the spool assembly of FIG. 2 fully assembled with a coil of 12-2 Romex contained therein and with the inclusion of a hand grip, the hand grip being shown in mid cross section;

[0021] FIG. 6 is a top view of the hand grip shown in conjunction with the spool assembly as seen in FIG. 5 and as seen along section lines C-C of FIG. 5 without the inclusion of the spool assembly itself in order to provide an unobstructed top view of the hand grip;

[0022] FIG. 7 is a bottom view of the bottom portion of the spool assembly shown in FIG. 1 with a removable center core inserted for supporting the spool assembly for rotation on a shaft; and

[0023] FIG. 8 is a view in mid cross section of the assembly shown in FIG. 7 as seen along section line D-D and with the center core shown unsectioned and in the process of being inserted.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

[0024] Referring to FIGS. 1 through 4, the spool assembly 10 of the present invention is comprised of a first cylindrical core 11 having top and bottom ends 12 and 13 with a circular radially extending flange 14 secured to bottom end 13, and a second cylindrical core 15 having top and bottom ends 16 and 17 with a circular radially extending flange 18 secured to top end 16. First and second cores 11 and 15 are threadably engageable with each other by means of male threads 20 on first core 11 and mating female threads 21 on second core 15 for thereby drawing flanges 14 and 18 toward each other to form a spool. A wire tail end retainer 22 is provided on first core 20 for retaining a core tail end 23 of a Romex wire coil 24 retained in the spool assembly 10.

[0025] The core tail end 23 of the coil 24 is inserted and pressed into retainer 22 for temporary retention. Retainer 22 has a wedge shaped channel 19 therein to assist in temporary retainment and confinement of the tail end 23. A core tail end clamp 25 is provided on the bottom end 17 of second core 15 for engaging core tail end 23 confined in retainer 22 in clamping engagement when the cores 11 and 15 are fully threadably engaged. To assist in the clamping engagement, the core tail end clamp 25 is provided with a series of teeth 26. When the Romex coil 24 is not being uncoiled on spool assembly 10, the outer tail end 26 may be passed through one of the four retainer passages 27 provided in second flange 18 and thereafter bent over to retain this free end and thereby prevent accidental unwinding of the coil 24 in storage.

[0026] As is illustrated in FIGS. 5 and 6, a hand grip 28 is slidably received within and through cores 11 and 15 for axial rotation of the spool assembly 10 thereon for hand dispensing of the Romex 24. Hand grip 28 slidably rides against the inner cylindrical surface 30 of first core 11 on upwardly protruding slide runner ribs 31 which have curved upper surfaces contoured to fit the inner curvature of cylindrical surface 30.

[0027] In order to retain the hand grip 28 on the spool assembly 20, core 11 is provided with annular axially extending ribs 32 and the hand grip 28 is provided with opposed in turned interlocking finger flanges 33 which ride over top of axially extending ribs 32. Hand grip 28 is secured to the core 11 of the first cylindrical core at the factory for permanent retention. Accordingly, Romex 24 is dispensed from the spool assembly 10 with no twists, kinks, or knots as it unreels from the spool assembly 10 by grasping the sliding hand grip 28 with one hand and with the other hand pulling the Romex off the coil 24 thereby causing the spool assembly 10 to rotate on the hand grip 28. Once the desired length is unreels and cut off, the excess Romex 24 is recoiled back onto the remaining coil 24 and the free end 26 is inserted through one of the passages 27 and bent over for retention.

[0028] In addition, as is illustrated in FIGS. 2 and 4, the inside 40 of first flange 14 is provided with inner raised rib footage marker rings 41 so that the user will know the approximate footage of Romex remaining on the coil 24.

[0029] The spool assembly 10 is preferably manufactured of plastic as, for example, by injection molding so that it is lightweight and will not rust and is durable and therefore also reusable.

[0030] Referring next to FIGS. 7 and 8, a removable center core 42 is illustrated which is removably retained within the first core 11 and is provided with a center bore 43 there-through for axial rotation of the spool assembly 10 on a shaft (not shown) for dispensing of Romex or other wire therefrom. The center core 42 is circular for mating and insertion into the internal cylindrical surface 30 of core 11. Insertion is accomplished by inserting the circular center core 42 into the cylindrical interior of core 11 in the direction as indicated by arrow 44.

[0031] The inside circular perimeter end 45 of center core 42 is provided with four equally spaced flexible fingers 46, each having outwardly protruding lips 47 for flexibly riding over and then catching the outer surface 48 of annular rib 49 provided on the inner surface 30 of core 11. Once fully engaged the center core 42 is retained within the core 11 and cannot be removed unless and until the fingers 46 are flexed inwardly so that the lips 47 thereof will clear rib 48 and permit withdrawal of the central core 42. In this embodiment the spool assembly 10 with its fully inserted center core 42 may then be mounted on a shaft for rotation to permit dispensing of Romex or other wire coiled on the assembly 10. This embodiment is particularly useful for larger spools of Romex which are too heavy for hand dispensing.

[0032] In the embodiment shown in FIGS. 7 and 8, spool assembly 10 is illustrated without the inclusion of the hand grip 28 shown in FIGS. 5 and 6. However, it should be realized that the removeable center core 42 may be adapted to also be received within the core of the spool assembly 10 provided with the hand grip 28. This is accomplished by providing the center core 42 with a side segment thereof removed to provide clearance for the hand grip 28 shown in FIGS. 5 and 6. Accordingly a center core 42 may be utilized with the spool assembly 10 which includes or does not include a hand grip 28 for rotation of the spool assembly on a shaft (not shown).

I claim:

1. A spool assembly for dispensing a coil of wire, comprising:
 - a first cylindrical core having top and bottom ends with a circular radially extending flange secured to said bottom end;
 - a second cylindrical core having top and bottom ends with a circular radially extending flange secured to said top end of said second core;
 - said first and second cores threadably engageable with each other for thereby drawing said flanges toward each other to form a spool;
 - retaining means on said first core for retaining a core tail end of a wire coil to be retained in said spool; and
 - clamping means on said second core for engaging a core tail end of wire retained in said retaining means in clamping engagement when said cores are fully threadably engaged.
2. The spool assembly of claim 1, wherein said second core has internal threads threadably engageable with external threads on said first core for providing said threadable engagement, and said bottom end of said second core providing said clamping means.
3. The spool assembly of claim 2, said bottom end including a series of teeth for engaging a core tail end retained in said retaining means.

4. The spool assembly of claim 2, wherein said retaining means includes a wedged shaped groove for initially retaining a core tail end of a wire coil.

5. The spool assembly of claim 1, including a hand grip slidably received in said cores for axial rotation of said spool thereon.

6. The spool assembly of claim 1, including a center core removably retained in said cores and having a central bore therethrough for axial rotation of said spool assembly on a shaft.

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