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AUTOMATIC EXPANDING REEL

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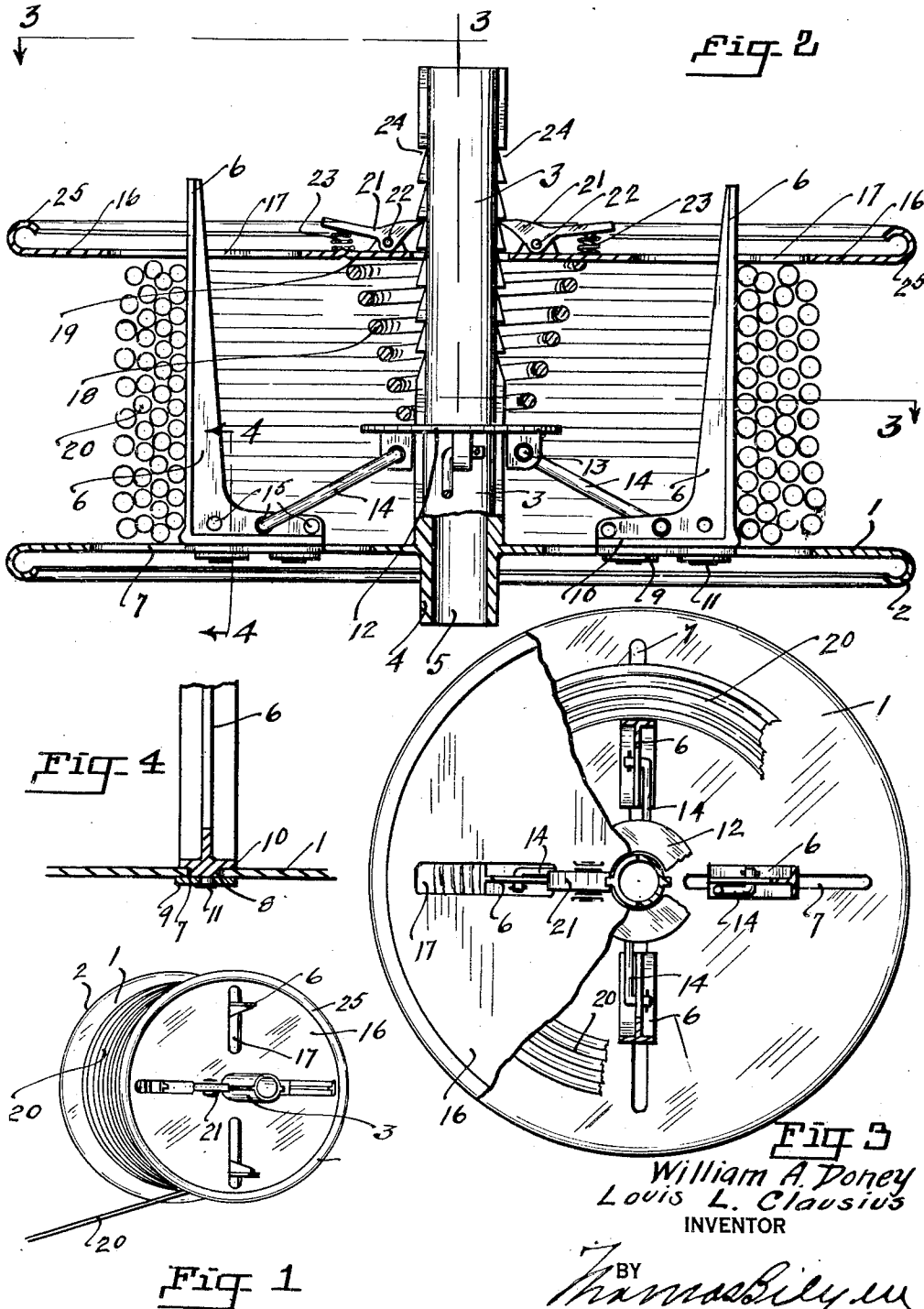


Fig 3
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AUTOMATIC EXPANDING REEL

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Our invention consists primarily of a base having a central spindle upwardly extending within the base that is preferably cylindrical and having a cylindrical hole extending therethrough. Arms are slidably positioned upon the base and are attached by links to an adjustable spider that is slidably disposed upon the spindle. A cylindrical closure is slidably positioned about the spindle having pawls or locking latches disposed thereupon that are in registerable alignment with locking notches that are disposed within the side wall of the spindle. The closure is maintained in spaced relationship with the base by a compressible element as a coil spring. Knees upwardly extend from the base and extend through slots disposed within the closure and links are adjustably placeable within the base of the knees so that the knees will be crowded outward as the closure is forced down upon the compressible element due to the compression of the compressible element. Each of the knees are slidable upon the base within a predetermined path and the free end of each of the knees pass through a slot disposed within the closure.

The primary object of our invention is intended for use by electrical workers and others wherein electrical wire, rope, cord, hose and any and all coiled, or spooled, materials may be placed thereupon and the device be used as a portable support for the maintaining of the materials being dispensed from the reel to maintain the same in usable condition and to prevent the tangling or dissipating of the same as the quantity of the material becomes lessened.

In our new and improved device, as the quantity becomes lessened, the engaging side walls of the reel may be forced closer together to thereby make it possible to reel the entire quantity of material from the reel in desired condition or in quantities as required, the spindle being hollow adapts itself to being supported upon any suitable form of support in any locality where the same is to be used.

A further object of our invention consists in providing simple means that may be actu-

ated without the removing of the reel from its support to lessen the spaced relationship of the base and the closure.

A still further object of our invention consists in providing a collapsible core for the reel that may be made to substantially fit a wide range of sizes of coils of materials that are to be placed thereupon and to be unwound therefrom.

A still further object of our invention consists in providing a simple, all-metal construction that will be long lived and relatively cheap in first cost.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts, the essential elements of which are set forth in the appended claims, and a preferred form of embodiment of which is hereinafter shown with reference to the drawings which accompany and form a part of this specification.

In the drawings:

Fig. 1 is a perspective, side view of one of our new and improved reels shown assembled with a coil of material being disposed thereupon.

Fig. 2 is a longitudinal, sectional, side elevation of the assembled device.

Fig. 3 is a cross section view, taken on line 3—3 of Fig. 2 looking in the direction indicated.

Fig. 4 is a fragmentary, sectional, side view of one of the adjustable knees, the same being taken on line 4—4 of Fig. 2 looking in the direction indicated.

Like reference characters refer to like parts throughout the several views.

We preferably form our device of a base 1 made of metal and having a curled rim 2 disposed upon the outer periphery of the base. The base is preferably circular in plan view. A spindle 3 upwardly extends from the base. A hub 4 is disposed upon the oppositely disposed side of the base to that of the spindle. The spindle is hollow, as illustrated at 5, through which any suitable supporting mechanism may be placed. A plurality of knees 6 are slidably disposed upon the base. A slot 7 is disposed through the base and a project-

ing guide bar 8 is disposed downward from the base of the knee and extends within the slot. A locking plate 9 is secured to the lug 8 and is disposed in spaced relationship with the base 10 of the knee. A plate 9 is secured indirectly to the knee by any suitable fastening means as by screws, or rivets 11. The spacing of the plate 9 from the base 10 of the knee should be sufficient to permit of a free movement of the knee relative to the base, and to the slot. A spider 12 is disposed about the spindle 3 and lugs 13 are disposed at the base of the spider. Connecting links 14 are disposed between the spider and the base of the respective knees. The link 14 is adapted for placement within the adjusting holes 15, disposed through the upper portion of the base of the knee to facilitate the placing of the knee in spaced relationship with the spindle, to fit coils of different diameter, that are to be placed thereabout. A closure plate 16 is slidably positioned about the spindle 3 and slots 17 are disposed through the closure that are placeable in registerable alignment with the slots 7 disposed within the base and through which the upper and free end of the knees are made to pass. A compressible element, as a coil 18, rests upon the spider 12 and engages the under side 19 of the closure. When the coil 20 has been placed about the knees, the closure 17 is then placed about the spindle and forced downward about the spindle to compress the compressible element 18. The compressing of the element 18 presses the knees outward to engage the inner surface of the coil and to expand the same. A plurality of locking latches 21 are hingedly secured to the body of the closure and are positioned relative to the supporting pins 22 by any suitable compressible means, as by springs 23. The inner end of the locking latches, or pawls 21, engage locking notches 24 that are disposed upon the outer surface of the spindle 3 and locks the closure in desired position. The diameter of the closure and the base should be substantially the same, and a rim 25 is formed about the outer periphery of the closure substantially the same as the rolled rim 2 upon the base to form a reel assembly having uniformly shaped peripheral edges on the side walls of the reel.

When a coil of material has been placed upon the reel, the reel may then be supported by the passing of any suitable support through the hollow spindle forming the reel. When it is desired to remove the closure from the spindle the same may be unlatched therefrom by the depressing of the locking latches which permits of the removal of the closure from the spindle and from the reel assembly.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine

the invention to the one form of embodiment herein shown and described, as it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What we claim is:

1. In a device of the class described, the combination of a base, a hollow spindle disposed centrally of the base, a spider slidably positioned about the spindle, a plurality of slots disposed within the base, and adjustable knees slidably positioned within the slots, adjustable links connecting the spider with the base of each of the knees, a compressible element resting upon the spider, a closure plate, having slots disposed therein in registerable alignment with the slots disposed through the base and through which the free end of the knees pass, the closure resting upon the compressible element, and means for locking the closure relative to the spindle.

2. In a device of the class described, the combination of a base, a hollow spindle disposed centrally of the base, a spider slidably positioned about the spindle, a flexible element resting upon the spider, a plurality of knees adjustably positioned relative to the base, means for imparting an in and out movement to the knees by the raising and lowering of the spider upon the spindle, a closure adapted for forming one side of the reel positionable about the spindle and resting upon the flexible element, and locking latches for fixedly fastening the closure relative to the spindle.

3. In a device of the class described, the combination of a base, a hollow spindle upwardly extending from the central portion of the base, a spider slidably positioned upon the spindle, a plurality of knees adjustably positioned upon the base and means connecting the spider with each of the knees for positioning the same relative to the spindle, a closure adapted for forming one side of the reel adjustably positionable about the spindle, a compressible element disposed between the spider and the closure, and means for fixedly maintaining the closure about the spindle in adjusted placement.

4. In a device of the class described, the combination of a base, a spindle disposed centrally of the base, a spider disposed about the spindle, a compressible element resting upon the spider, knees adjustably positioned relative to the base, means for reciprocally moving the knees, a closure disposed about the compressible element, and locking means for fixedly fastening the closure relative to the spindle.

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