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3,664,594

BANDAGE ROLL-UP PACKAGING DEVICE

Filed Sept. 8, 1970

2 Sheets-Sheet 1

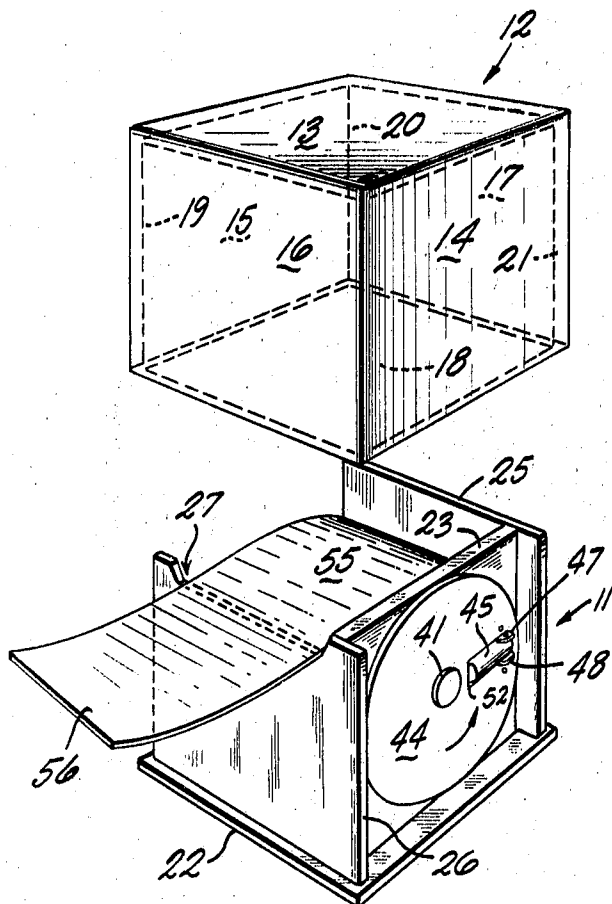


FIG. 2

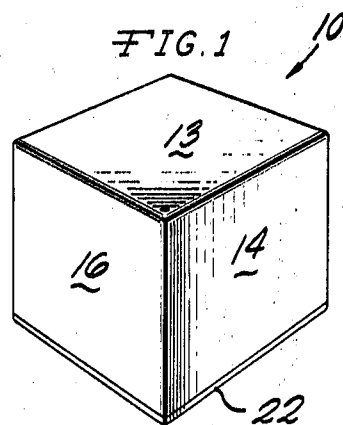


FIG. 1

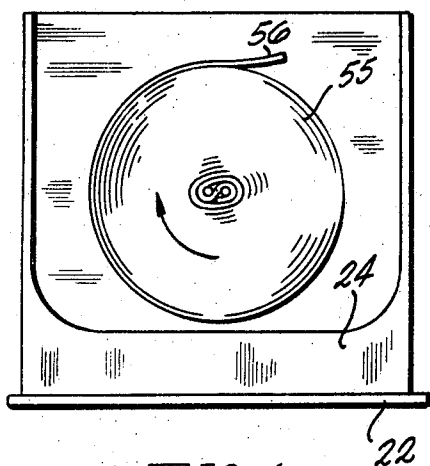


FIG. 4

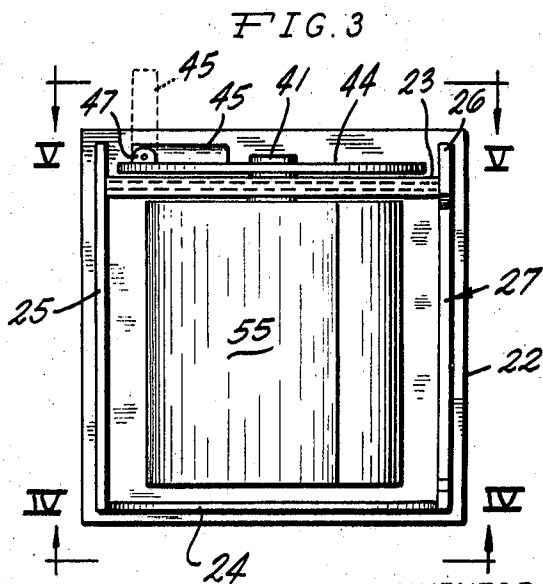


FIG. 3

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FIG. 5

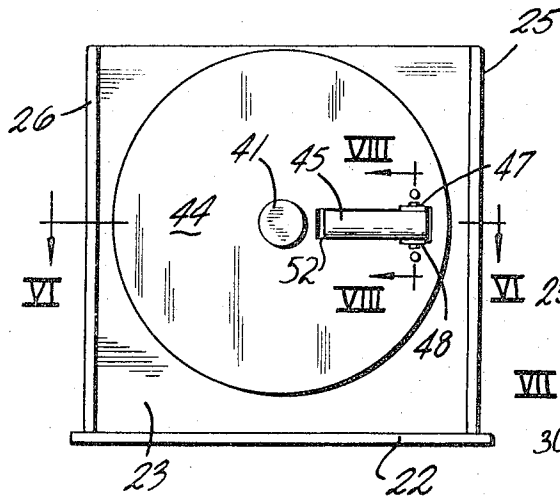


FIG. 6

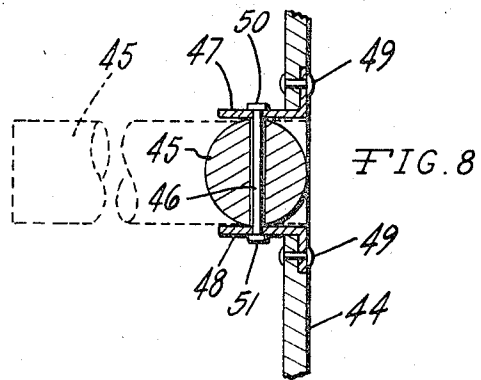
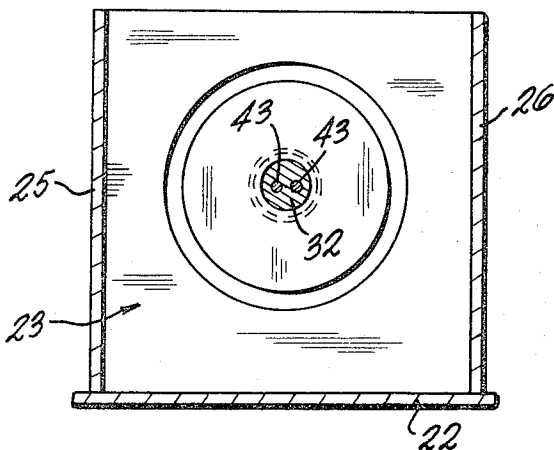
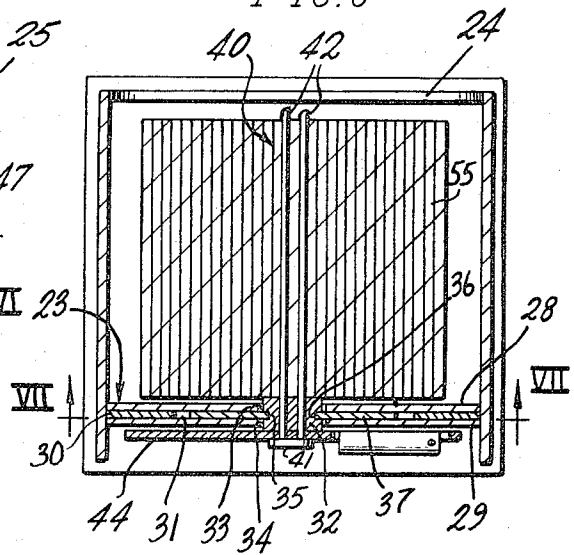


FIG. 7

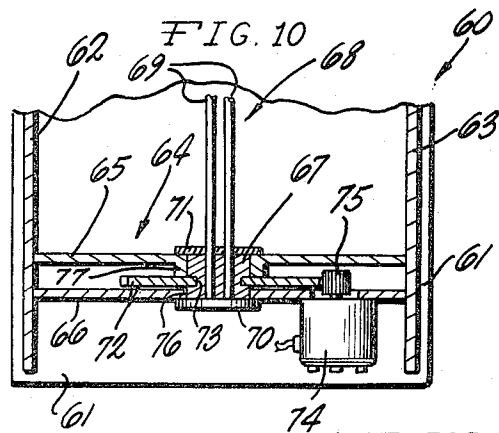
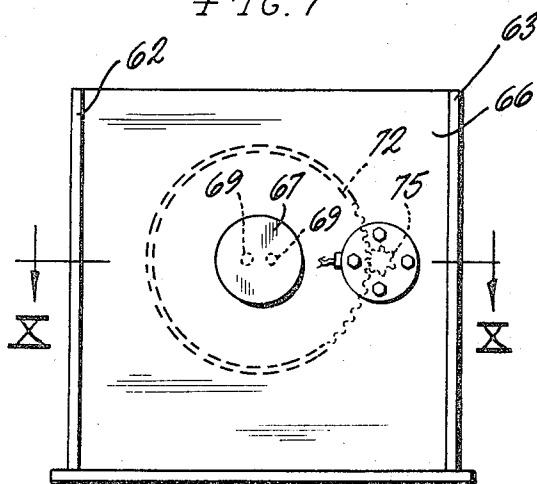


FIG. 9

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## BANDAGE ROLL-UP PACKAGING DEVICE

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10 Claims

### ABSTRACT OF THE DISCLOSURE

A container for storing and transporting rolled continuous webs or strips such as bandages is provided, including a device therein for rerolling the webs or strips for storage after use. The device comprises a spindle having one end mounted in a hub, the hub being rotatably mounted at a wall of the container, and having means engaging and restraining the hub against the axial and angular movement with respect to the container wall. A crank means or electric motor is provided for rotating the hub and spindle.

### BACKGROUND OF THE INVENTION

The present invention relates to a container for rolled continuous web or strip material such as bandages, and more particularly refers to such a container having means provided therein both for initial loading of the container and for rerolling the web or strip into the container after use for storage purposes.

Continuous rolled web or strip material such as bandages and particularly elastic-type tension bandages formed of woven material such as cotton fabric reinforced with elastomeric material are often used in relatively long strips. For many applications the bandages are subsequently reused, either in initial condition or after having been laundered and sterilized. Because of their relatively long length, the bandages must be rerolled for storage. However, such rerolling may be quite difficult, particularly when long elastic bandages are utilized. Various devices have in the past been developed for rerolling such bandages. However, these devices have invariably proved to be either too complex, costly, and difficult to use, or else have not adequately performed their function. Moreover, it has been necessary for the user to purchase such devices separately, since it has been difficult to package them together with the roll of bandage in the initial carton.

### SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a container for rolled continuous web or strip material such as bandages having a built-in device for rerolling the bandages after they have been used and, if necessary, laundered and sterilized.

It is an additional object to provide a device of the type described which can be integrally built into the initial container for the bandage.

It is still an additional object to provide a container having such a roll-up device, which device is simple to construct and requires only inexpensive materials.

It is another object to provide a container having a bandage roll-up device which is simple to use.

Still further objects and advantages of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of a strip or web or bandage container and rewind device herein fully described and particularly pointed out in the claims, the annexed drawings and the following description setting

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forth in detail certain illustrative embodiments of the invention, such disclosed embodiments illustrating, however, but several of the various ways in which the principle of the invention may be used.

### BRIEF DESCRIPTION OF THE DRAWINGS

In the annexed drawings:

FIG. 1 is a perspective view of a container according to the invention in completely closed condition.

FIG. 2 is a perspective view of the container shown in FIG. 1, with the cover removed, and with one end of the web contained therein extending from the container.

FIG. 3 is a top view of the bottom portion of the container shown in FIG. 2.

FIG. 4 is a rear end view of the container taken at the line IV—IV of FIG. 3, looking in the direction of the arrows.

FIG. 5 is a front view of the main portion of the container taken at the line V—V of FIG. 3, looking in the direction of the arrows.

FIG. 6 is a cross-sectional view taken at the line VI—VI of FIG. 5, looking in the direction of the arrows.

FIG. 7 is a cross-sectional view taken at the line VII—VII of FIG. 6, looking in the direction of the arrows.

FIG. 8 is a fragmentary cross-sectional view taken at the line VIII—VIII of FIG. 5, looking in the direction of the arrows.

FIG. 9 is a front view of a container constituting another embodiment of the invention; and

FIG. 10 is a fragmentary cross-sectional view taken at the line X—X of FIG. 9, looking in the direction of the arrows.

### DESCRIPTION OF THE SPECIFIC EMBODIMENT

Referring more particularly to FIGS. 1—4, a container 10 is shown generally in the form of a paperboard carton or box comprising a base member 11 and a cover member 12, the base member being proportioned to telescope into the cover member. The cover member 12 comprises a plurality of panels joined together comprising a top panel 13, a front panel 14, a rear panel 15, and side panels 16 and 17. The cover member 12 may be formed from an integral blank suitably cut and scored and glued together by means of flaps 18, 19, 20 and 21. The base member 11 is comprised of a bottom panel 22, a front panel 23, a rear panel 24 (FIG. 4), and side panels 25 and 26. The side panel 26 is provided with a recess 27 which serves as a guide for winding or unwinding the web or bandage.

Referring to FIG. 6, the front panel 23 is formed of two panel members 28 and 29 having a spacer panel member 30 provided therebetween. The spacer panel member 30 is suitably cut to provide a cylindrical chamber 31 between the panel members 28 and 29. A hub 32 is rotatably journaled in apertures 33 and 34 provided in the panel members 28 and 29, respectively. An inner supporting disc 37 provided with a central aperture 35 is mounted over the hub 32 and engaged in an annular groove 36 provided in the hub. A spindle 40 comprising a head 41 and a pair of prongs 42 affixed thereto engage the hub 32, with the prongs 42 disposed in apertures 43, FIG. 7, provided in the hub. An outer crank disc 44 is retained between the outer surface of the hub 32 and the head 41 of the spindle 40. A foldable crank handle 45, FIG. 8, is hingedly mounted on a hinge pin 46 which is in turn supported by a pair of angle brackets 47 and 48 which are affixed to the outer crank disc 44 by means of rivets 49. The hinge pin 46 is provided with flattened extremities 50 and 51 for providing axial restraint. The crank

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handle 45 is shown in extended position by broken lines and in the folded position by solid lines, the handle 45 in folded position being recessed in a slot 52.

Referring to FIGS. 2-6, a continuous web roll 55, as for example a flexible bandage roll 55, is mounted on the hub 40, one end 56 of which is shown in FIG. 2 extending outside of the container. The web or bandage 55 may be removed by drawing out the end 56, the roll then unwinding in the direction of the arrows shown in FIGS. 2 and 4. The web or bandage may be unrolled completely, or to any desired length and severed from the remainder.

FIGS. 9 and 10 illustrate a modified embodiment of the invention. A base member 60 similar to that previously shown and described is utilized, and is used in conjunction with a cover which is identical with the cover 12 shown in FIGS. 1 and 2. The base member 60 comprises a bottom panel 61, side panels 62 and 63, a rear panel, not shown, and a front panel 64 comprised of front panel members 65 and 66. A hub 67 is journaled in apertures provided in the panel members 65 and 66. A spindle 68 comprised of a pair of prongs 69 affixed at one end to a disc has its prongs 69 disposed within apertures provided in the hub 67. The spindle 68 and the hub 67 are restrained axially by means of the disc 70, and a disc 71 through which the prongs 69 pass restraint being achieved by means of an adhesive such as paraffin or any other suitable adhesive. A disc gear 72 is fixedly mounted in an annular groove 73 provided in the hub 67. An electric motor 74 is mounted on the outer panel member 66 and has a pinion gear 75 mounted on the end of the motor shaft, engaging the disc gear 72.

In utilizing the present invention the bandage may be packaged by winding it in a roll on the spindle 40 or 68, or by placing a prewound roll on the spindle. The cover is applied and the package shipped in that condition. The user opens the package by lifting off the cover. He then grips the end of the bandage and pulls it off the roll, if the entire bandage is to be utilized. If only a portion thereof is desired, the bandage may be cut when the desired amount has been removed. The bandage may be utilized by appropriately applying it to various parts of the body. After use, if desired, the bandage may be washed, sterilized, or appropriately treated. To replace it in the package, the end of the web is placed between the prongs 42 of the spindle 40, or where only a portion of the web has been used, it is wound on the portion remaining on spindle 40. The crank handle 45 is then pivoted to open position. The crank handle and outer disc 44 are rotated, causing the spindle 40 to rotate and the bandage to be wound thereon. After the bandage has been completely wound, the crank handle 45 is once again folded substantially flush with the outer supporting disc 44 and the cover 12 telescoped over the base member 11. The web or bandage may be retained indefinitely in this condition until further use is desired. The front panel is recessed below the edges of the bottom and side panels to permit the cover to clear the folded handle.

The embodiment shown in FIGS. 9 and 10 is operated in much the same manner as the embodiment shown in the previous figures. However, with regard to the latter embodiment, instead of rewinding the bandage by means of a manual crank arrangement, it is only necessary to apply an electrical current to the electric motor 74, thereby causing the disc gear 72 to rotate, which in turn causes the spindle 68 to rotate and to wind up the web or bandage. The panel 64 is recessed to provide space for the motor.

Although only two embodiments of the invention have been shown, other embodiments may be provided by those skilled in the art. The invention basically comprises a spindle having one end mounted for rotation in the wall of a panel, the spindle having means preventing axial motion in either direction, and means for preventing angular or yawing motion with respect to the panel. Additionally, means must be provided for rotating the spindle.

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In the embodiment shown in FIGS. 1-8, the spindle is mounted in a hub 32, which hub is restrained axially and additionally with regard to yawing motion by means of a disc 37 affixed to the hub and confined within a cylindrical space between two panel members 28 and 29. Alternatively, the panel 28 could be removed and inward axial restraint provided by the disc 44. Alternatively, a small disc 71 may be affixed to the hub in the manner shown in FIG. 10.

In the embodiment shown in FIG. 10, axial restraint for the hub 67 is provided by the discs 70 and 71. Restraint with regard to yawing is provided by the bearing edge 76 of the outer panel member 66 as well as by the annular sleeve 77 formed in the inner panel member 65.

The present invention provides a container or package for continuous rolled webs or bandages which may be used for packaging and shipping the product, dispensing the product, and restoring the product after it has been used until the next time it is to be used. Very convenient means is provided for rewinding the bandage, and the entire container may be readily and inexpensively manufactured.

Other modes of applying the principle of my invention may be employed instead of those explained, change being made as regards the structure herein disclosed, provided those defined by any of the following claims or their equivalents be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A device for winding up a continuous web into a roll for storage, comprising

- (a) a base member,
- (b) a vertical support mounted on said base member comprising a pair of spaced apart panels vertically positioned,
- (c) a hub rotatably mounted in each of said spaced apart panels,
- (d) a disc mounted on said hub positioned intermediate said panels, said disc engaging one of said panels to provide axial restraint in one direction and engaging the other of said panels to provide axial restraint in the opposite direction,
- (e) a spindle affixed at one end to said hub, and
- (f) means for rotating said hub.

2. A device according to claim 1, wherein said spindle comprises a pair of prongs adapted to receive the end of said web therebetween.

3. A device according to claim 1, wherein said means for rotating said hub comprises a disc affixed to said hub at its center and having a handle mounted thereon spaced apart from said center.

4. A device according to claim 3, wherein said handle is foldable against said disc and recessed therein.

5. A device according to claim 1, wherein a spacer is provided intermediate said spaced apart panels cut to provide a chamber within which said disc may rotate freely.

6. A device according to claim 1, in the form of a container having said base member as a bottom panel, the outer of said support panels as a front panel, a pair of side panels adjacent the edges of said front panel, a rear panel connected to said side panels suitably cut to provide an opening permitting a roll of web to pass there-through, and a cover adapted to telescope over said container.

7. A device according to claim 6, wherein said front panel is sufficiently recessed rearwardly of the forward edges of said side and bottom panels to provide a chamber permitting said handle to be folded thereinto.

8. A device according to claim 1, wherein a pair of discs are provided affixed to said hub and engaging the surfaces of said vertical support.

9. A device according to claim 1, wherein a disc gear is mounted on said hub and an electric motor is mounted on said device having a pinion gear affixed to the end of

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its shaft and engaging the teeth of said disc gear, thereby providing power for rotating said hub and said spindle.

10. A device according to claim 8, wherein said device is in the form of a container having said base member as a bottom panel, the outer one of said support panels as a front panel, a pair of side panels adjacent the edges of said front panel, a rear panel connected to said side panels suitably cut to provide an opening permitting a roll of web to pass therethrough, a disc gear mounted on said hub and an electric motor mounted on said container having a pinion gear affixed to the end of its shaft engaging the teeth of said disc gear, thereby providing power for rotating said hub and said spindle, said front panel being recessed sufficiently rearwardly of the forward edges of said side and bottom panels to provide a chamber in which said motor is positioned, and a cover adapted to telescope over said container.

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U.S. Cl. X.R.

206—52 S; 242—55.53, 67.1