Dec. 6, 1949 E. COLOMER R. 2,490,621

DISPLAY DEVICE

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Fig: 1.

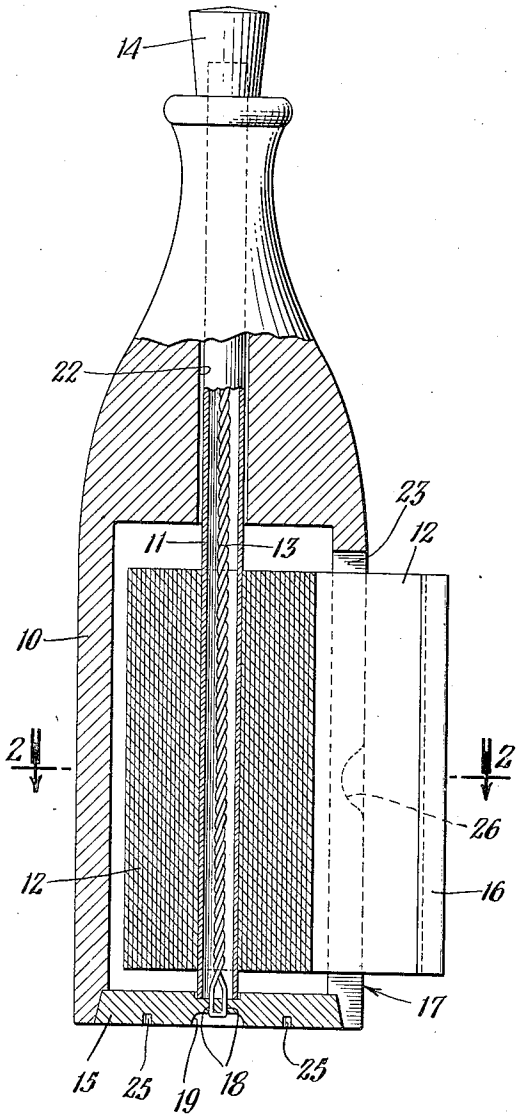


Fig: 2.

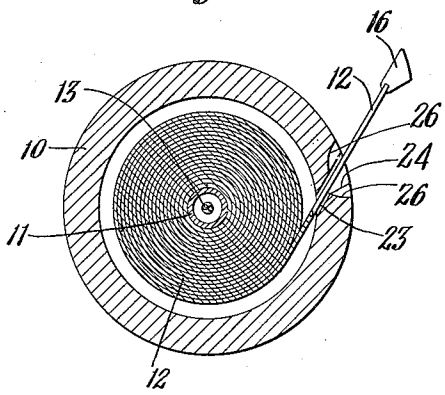


Fig: 3.

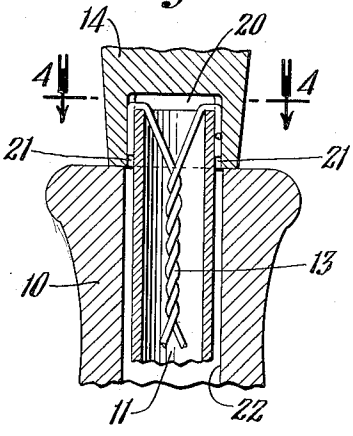


Fig: 4.

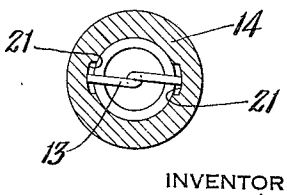
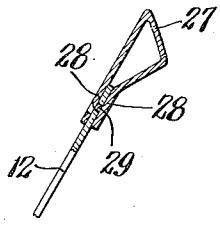


Fig: 5.



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DISPLAY DEVICE

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5 Claims. (Cl. 40—82)

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The invention relates to miniature display devices in which a flexible strip of paper, or the like, bearing printed matter or pictures is arranged to wind up in roll form within a small case.

An object of my invention is to provide an improved tension rewind mechanism for devices of the character described.

Another object is to provide improvements in the construction of the case and other elements of such devices whereby assembly is facilitated, the number of necessary parts reduced and their design simplified, and whereby the appearance of the finished article is enhanced by novel cooperation between the case and the operating parts.

A still further object is to provide improved means for creating and adjusting initial tension of the rewind mechanism.

Other objects and advantages of my invention will appear as the description proceeds. In the drawings:

Fig. 1 is a vertical longitudinal sectional view of a display device embodying the novel features of my invention in one of its preferred forms.

Fig. 2 is a transverse sectional view taken as indicated at 2—2 in Fig. 1.

Fig. 3 is a detail sectional view of the upper part of the device shown in Fig. 1, illustrating the cooperative engagement between the spindle and cap.

Fig. 4 is a detail section taken at 4—4 of Fig. 3.

Fig. 5 is a detail sectional view of a modified form of stop member for the end of the strip.

In the preferred embodiment I have illustrated by way of example, the case of the device is made in the form of a miniature bottle, and the cap which holds in place one end of the winding spindle is made in the form of the cork of the bottle. It will be understood, however, that the case may assume any one of an almost infinite variety of forms such as a miniature replica of a skyscraper building, a steam turbine, motor car, etc. If intended as an advertising novelty, or favor, the case may be made as a replica in miniature of the product being advertised. For example, a distiller may have the device made up in the form of a bottle whose design corresponds to the shape of his own distinctive bottle, and which may thus be easily recognized and identified with his product. Also, the miniature reproduction may of course be decorated with small scale facsimiles of the distiller's label, tax and importer's stamps, etc.

In its general arrangement, my improved display device comprises a case 10, a hollow spindle 11 to which is secured the flexible strip 12, a tension unwind and rewind elastic band 13 extending through the hollow spindle, and a removable cap 14 which fits over one end of the spindle to hold it assembled with the case and also serves

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to compress the end, or ends, of the elastic band between the cap and spindle, thus anchoring the band to one end of the spindle. The other end of the elastic band is anchored to the removable base member 15, which preferably has a frictional engagement with the adjacent portion of the case 10, and is of cylindrical or frusto-conical form so as to be rotatable about the axis of the spindle upon the application of sufficient torque to overcome the friction. This provides for adjustment of the initial rewind tension to insure that the strip 12 will be completely wound on the spindle with enough tension to spare so that the stop member 16 at the outermost end of the strip will be snugly drawn against the case or into the flush seat provided by the slot 17 thereof.

The base member 15 is provided with a pair of apertures 18 for elastic band 13. A depression 19 in the outside of the base adjacent these apertures permits the end of the band to be drawn into a position inside of the outer surface of the base thus leaving the base smooth and free of projections.

A cylindrical or frusto-conical recess 20 in the cap 14 snugly fits over the similarly shaped end of spindle 11 frictionally to hold the two members in assembled relation. A groove, or grooves, 21, formed in at least one of the meeting faces of the spindle and cap members receive the ends of the elastic band 13. Preferably the band is circular in cross-section, and the depth of grooves 21 is made somewhat less than the diameter of the band. Thus upon application of cap 14 to the spindle the band is compressed, firmly anchoring it to the spindle and assisting in retention of the cap in its locking position on the spindle. The provision of grooves 21 make it possible to have the recess 20 of substantially the same size as the end of the spindle for frictional engagement therewith, and maintains proper alignment of the parts. Spindle 11 is arranged to extend through an aperture 22 in the upper end of the case and to be held in assembled relationship therewith by means of applying the cap 14 as described.

The side of case 10 is slotted longitudinally as at 23. This slot preferably is arranged tangentially to the mean diameter of the strip roll, and is tapered outwardly as at 24 so that the stop member 16 seats within the slot to present a flush surface at the outside of the case when the strip 12 is fully wound.

Assembling of the parts is performed as follows: The strip 12 is secured at its inner end to the hollow spindle 11, as by gluing or clipping it thereto. The strip is wound up on the spindle except for an inch or so which is left unwound. The spindle with its rolled strip is slid into the case with the outer end of the strip projecting through slot 23. The ends of the elastic band

are threaded through the holes in the base 15 and are then dropped through the center of the hollow spindle. The end of the spindle will now be projecting beyond the end of the case, and the elastic band will be projecting beyond the end of the spindle. Grasping the projecting ends of the band and pulling the spindle out as far as it will go, any excess length of the band is trimmed off and the free ends turned back along the outside of the spindle in position to be engaged by the grooves 21 of cap 14. Holding the ends of the band so, the cap is pushed into place on the end of the spindle as shown in Fig. 3.

Next the base member 15 is seated lightly in the opposite end of the case and is turned backwards until the stop member 16 is drawn firmly into the slot 23. Then the base is pushed firmly into the end of the case to lock it frictionally against further turning. The base may be provided with a pair of recesses 25 for engagement by a key for effecting the described adjustment of the initial tension of the rewind band, or with other suitable means for conveniently turning the base against the frictional resistance of its engagement with the case.

To facilitate withdrawal of the band, the sides of the slot 23 may be provided with thumb-notches 26, permitting the user to grasp conveniently the stop 16 to pull it out of the slot.

The parts of my device may be fashioned from any suitable materials such as metal, plastic resins, rubber, wood, paper, etc. The strip 12 may conveniently be made of tough paper or linen, and may contain any desired representations in words or pictures, preferably arranged in serial form so as to tell a complete story. This may be an advertising skit, travel story, comic, or whatever may be desired. The elastic band may be made of rubber or other available materials.

In the modified construction illustrated in Fig. 5, the stop member is made of a metal strip 27 the ends 28 of which are adapted to be sprung apart to receive the end of the strip 12 between them. The strip may be locked in place by punching in a section of the ends 28, or one of them, as indicated at 29. Stop member 16 (Fig. 2) may be made of wood or plastic resins into a slot of which is glued, or otherwise secured, the end of strip 12.

The terms and expressions which I have employed are used in a descriptive and not a limiting sense, and I have no intention of excluding such equivalents of the invention described, or of portions thereof, as fall within the purview of the claims.

I claim:

1. A miniature display device comprising a hollow spindle, a flexible strip secured to the spindle for winding thereon in roll form, a case arranged to enclose the rolled strip, and a tension unwind and rewind comprising an elastic band extending through the hollow spindle, the case comprising a sleeve-like member having one end apertured for the spindle and a removable member at the other end for insertion of the rolled strip, the spindle projecting through said apertured end of the sleeve-like member, and the elastic band arranged to be anchored at one end to said removable member and at the other end to extend through the projecting part of the spindle for anchorage thereto exteriorly of said case.

2. A miniature display device comprising a hollow spindle, a flexible strip secured to the spindle for winding thereon in roll form, a case arranged to enclose the rolled strip, and a tension unwind and rewind comprising an elastic band extending through the hollow spindle, the case comprising a sleeve-like member having one end apertured for the spindle and a removable member at the other end for insertion of the rolled strip, and the elastic band arranged to extend beyond the end of the spindle to be anchored at one end to said removable member and at the other end to the spindle, the removable member being adjustable about the axis of the spindle to wind partially the rubber band for creating initial rewind tension.

3. A miniature display device comprising a hollow spindle, a removable cap for one end of the spindle, a flexible strip secured to the spindle for winding thereon in roll form, a case arranged to enclose the rolled strip, and a tension unwind and rewind comprising an elastic band extending through the hollow spindle, the elastic band arranged to be anchored at one end to the case and at the other end to the spindle, the anchorage to the spindle being provided by compressing the end of the band between the spindle and the cap.

4. A miniature display device comprising a hollow spindle, a flexible strip secured to the spindle for winding thereon in roll form, a case arranged to enclose the rolled strip, and a tension unwind and rewind comprising an elastic band extending through the hollow spindle, the case comprising a sleeve-like member having one end apertured for the spindle and a removable member at the other end for insertion of the rolled strip, and the elastic band arranged to be anchored at one end to said removable member and at the other end to the spindle, the removable member having a frictional engagement with the sleeve-like case member for adjustment about the axis of the spindle to wind partially the rubber band for creating initial rewind tension.

5. A miniature display device comprising a hollow spindle, a removable cap for one end of the spindle, a flexible strip secured to the spindle for winding thereon in roll form, a case arranged to enclose the rolled strip, and a tension unwind and rewind comprising an elastic band extending through the hollow spindle, the removable spindle cap having a recess arranged to receive the end of the spindle, a groove in at least one of the meeting faces of the spindle and cap members, the elastic band arranged to be anchored at one end to the case and at the other end to the spindle, the anchorage to the spindle being provided by fastening the end of the band in said groove.

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