

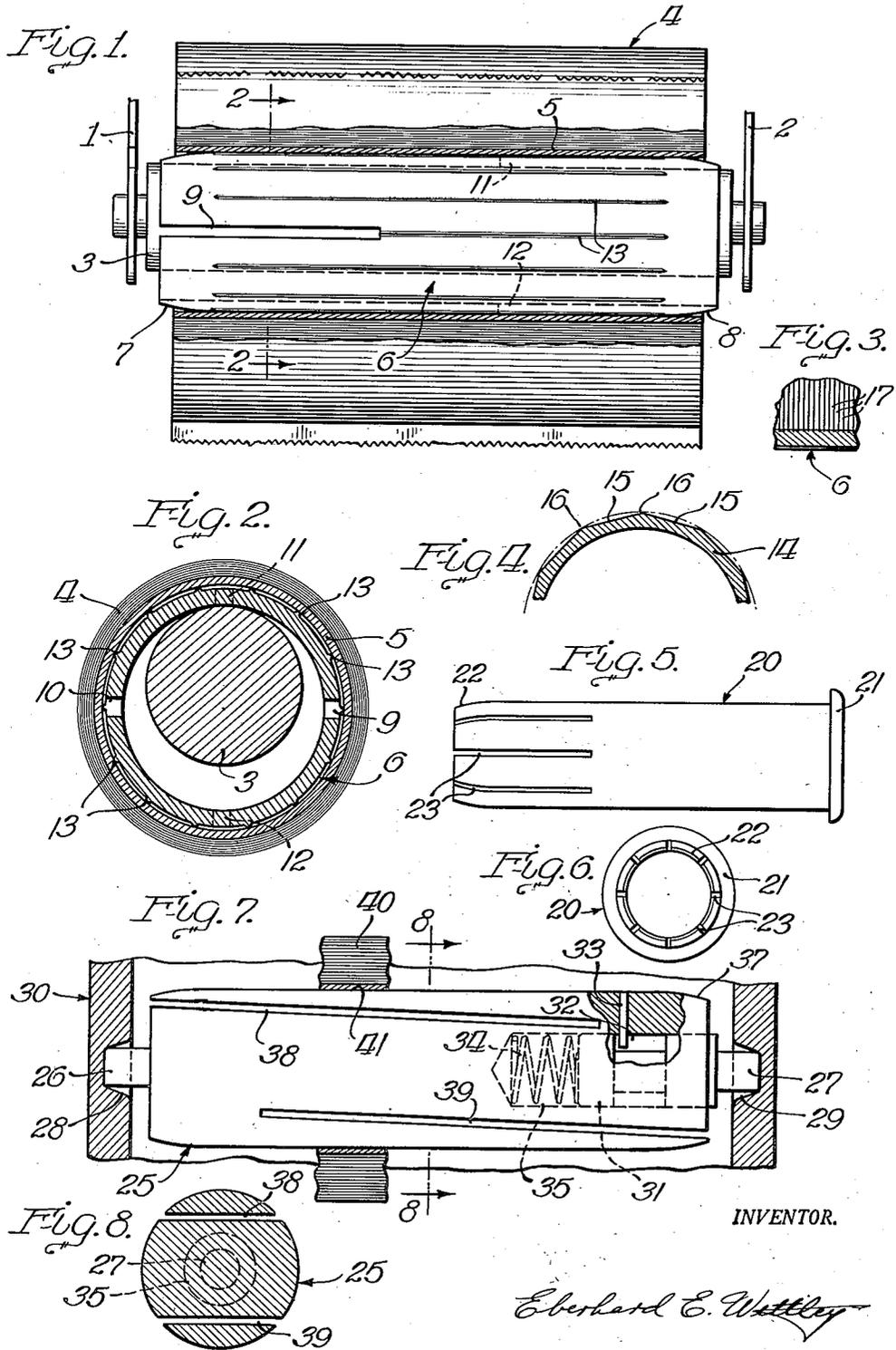
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AUXILIARY CORE

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AUXILIARY CORE

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8 Claims. (Cl. 242—55.2)

1

This invention is directed to an auxiliary core designed for use in connection with dispensable sheet paper rolls having hollow soft center cores. The main purpose of this core is to provide an inexpensive reusable item that will round out and reshape crushed roll cores and which will, at the same time, act as a means for also reshaping the paper wound upon the soft center cores.

The practice has been to ship toilet paper rolls and analogous paper roll products in flattened condition to comply with certain shipping regulations. The result is that rolls of this type have been made with relatively thin and soft cardboard cores to permit flattening with ease. These soft cores form the main core of the dispensable paper roll and as such are used upon spindles of adapters, fixtures, or other bracket units that are utilized for rotatably supporting paper rolls where needed.

However, the paper rolls and their flattened main soft cores acquire a decided set after being shipped in flattened condition and/or when stored as such. As a result reshaping rolls with soft crushed cores is only a theoretical implication having no practical possibilities in actual use upon adapters or the like.

Furthermore, rolls of this character do not properly dispense perforated paper sheets causing a waste of paper by premature tearing which usually occurs independently of the divisional tear perforations or includes only portions thereof depending upon the conditions of use and the manner in which the paper is grasped.

A further drawback in the use of flattened rolls prominently exerts itself whenever out of round rolls are used in recessed wall dispensing fixtures of the kind that are commonly installed in tile bathrooms for toilet paper or in tile kitchens for paper hand toweling or the like. Egg shaped rolls, especially when full, will absolutely not rotate freely, if at all, and when such rolls are placed upon the spindles of wall fixtures of the type referred to, this leads to paper waste and unsatisfactory dispensation accompanied by considerable waste through tearing and is of considerable annoyance to the user.

The inexpensive auxiliary core of this invention provides a means for effectively remedying the above noted faults with comparative ease. Replacement of a full roll for an empty one can be accomplished with utmost simplicity accompanied by a transfer of the auxiliary core to the soft center core of the new roll.

Also, by using an auxiliary core of the type herein disclosed and described, shipment of dis-

2

pensable paper rolls in flattened space saving cartons or packages may be continued with a corresponding saving in freight and storage charges. The cost of the auxiliary cores is negligible compared to the saving in freight and storage charges and analogously the saving in necessary room. Also, the practical reuse of the cores for a considerable time under ordinary conditions of use further enhances the intrinsic value of these items.

This core can be distributed to users of roll paper products as a gift or for a small charge, and the surface of the core may be further used for advertising by printing or embossing thereon, or by the use of attaching labels which may be cemented or otherwise fastened to the surface of the core.

Another object of this invention is to provide a core of this kind which can be adapted to form the actual spindle of a wall dispensing fixture or bracket. To augment the advantage of using a spindle designed for the purpose aforesaid, it is a further object to incorporate resilient frictional contact or brake means to hold the spindle in place in a fixture and to control the free rotation thereof in combination with the spindle itself, the latter being of a diameter to frictionally hold the soft core in expanded and rounded condition as well as the paper supply thereon. Through this snug insertion of the spindle within the paper roll core, direct rotation of the paper together with the spindle is also controlled by the resilient frictional resistance means. Such rotational control means is smooth in operation and does not interfere with paper dispensation, and the spindle provides a definite and efficient remedy to eliminate the egg shaped paper roll from the dispensing means that are now used and which do not have the facility or means to round out such rolls and their soft cores. It is a fact that the use of egg shaped paper rolls upon conventional fixtures and spindles at best have a wobbly existence even when attempts are made to round out such rolls by hand.

All other objects and advantages relating to the preferred and modified disclosures of the present invention shall hereinafter appear in the following detailed description having reference to the accompanying drawings forming a part of this specification.

In the drawings:

Fig. 1 is a front elevational view of a roll paper dispensing device of conventional form illustrating the use of a hollow auxiliary core of a preferred form embodying the principles set forth by

3

the present invention; parts of the paper roll having been broken away and shown in section to fully expose the auxiliary core;

Fig. 2 is a fragmentary transverse cross sectional view taken vertically or at right angles to the core axis and substantially as viewed along the line 2—2 in Fig. 1;

Fig. 3 is a fragmentary view to show a portion of the interior of the auxiliary core shown in Figs. 1 and 2;

Fig. 4 is a fragmentary transverse sectional view of a modified core having a different design of anti-frictional surface;

Fig. 5 is a side elevational view of a modified construction of auxiliary core;

Fig. 6 is an end view thereof as seen from the left in Fig. 5;

Fig. 7 is a side elevational view of a modified spindle construction providing an auxiliary core including the features shown in the preferred construction and also incorporating a frictional means to slow down the free rotation of such spindle; and

Fig. 8 is a vertical transverse cross sectional view of a modified spindle as seen along the line 8—8 in Fig. 7.

A dispensable roll paper bracket of a conventional type is fragmentarily illustrated in Fig. 1 and such bracket has arms 1 and 2 removably supporting a wooden spindle 3. A dispensable paper roll 4 having a soft hollow center core 5 is shown as directly carried upon the auxiliary core 6 comprising the present invention, such core 6 being carried for rotation upon the wooden core 3 of the wall bracket fixture means.

The auxiliary core 6 may be made of any suitable stiff material such as fiber, plastic, metal, heavy cardboard, or of analogous material any one of which will produce a stiff cylindrical tube that will function to round out soft roll paper cores and the paper thereon when inserted into such main core of the roll paper. The roll 6 is preferably provided with reduced diameter ends which are shown as tapered at 7 and 8 in Fig. 1 to facilitate insertion of the stiff cylindrical core into the roll paper core. To further simplify insertion of the auxiliary core into the soft core of the paper roll, the tapered ends are provided with cross cut slots such as 9 and 10 as best seen in Figs. 1 and 2. Such slots are located at the left hand end of Fig. 1 and corresponding slots 11 and 12 are cut into the stiff auxiliary core at the right hand thereof. Such pairs of slots are disposed in angular relationship with respect to each other as illustrated in Fig. 2 to prevent possible fracture of the stiff cylindrical tube through handling such as might occur if such oppositely disposed slots were aligned in the same angular positions upon the auxiliary core 6.

Thus, a stiff cylindrical core with reduced diameter ends comprising the tapered portions 7 and 8 with each end further supplied with the slots described of any chosen lengths is produced comprising a core having compressible means whereby the ends of the auxiliary core 6 may be reduced to make the insertion of the stiff tubular means into a soft out-of-round core of a paper roll an easy chore.

In view of the fact that it is one of the objects of the present invention to provide a core which snugly fits into the soft core of a paper roll, it is possible to provide such a stiff cylindrical tube with means on the surface thereof that will reduce the frictional contact between the hard core and the soft core whenever such auxiliary core

4

is being inserted into a new paper roll or when the soft core is being stripped off of the same. One way in which such frictional resistance may be reduced and yet provide a means to maintain a definite circular outer contour which will reshape the soft core and the paper thereon may be done by the use of a plurality of surface ribs 13 of any desirable shape or pattern. The main object is to provide ribs or an auxiliary core with a surface contour that reduces frictional surface. In other words, the radially outward terminal edges of the core itself or the rib projections that may be formed thereon should all terminate in a common hypothetical cylindrical surface which will definitely reshape the roll in a desired manner. The diameter of this hypothetical cylinder is made substantially equal to the normal diameter of the soft roll core.

Fig. 4 illustrates how the contour of the surface of a core such as 14 may be changed by providing flat faces 15 thereon joined to form a plurality of ridges 16 which all lie in a hypothetical cylindrical surface that represents the interior normal diameter of a soft core of a paper roll.

To further facilitate removal of the auxiliary core from within a spent paper roll core, the interior surface of the auxiliary core may be roughened in any desirable manner to provide finger grip means for carrying out this particular act. Horizontal or circumferential ribs or indentations may be provided in the surfaces of the interior of the roll or the same may be roughened by applying other materials such as fine sand cemented to the interior of the roll for this particular purpose. Fig. 3 shows a fragmentary portion of a roll provided with circumferential grooves 17 to illustrate one manner in which finger grip means can be applied to the interior of the roll 6. Furthermore, such roughened interior of the roll will also provide frictional means for retarding the rotation of the roll upon the spindle 3, and the latter may rotate also or be fixed as the case may be.

Referring now to Figs. 5 and 6, a modified auxiliary roll 20 is here shown which is insertable into a soft core of a paper roll from one direction only and which is provided with a shouldered head 21 for limiting the insertion of this core into the paper roll core. The insertable end of the core 20 is tapered as at 22 and a plurality of slots or saw cuts such as 23 provide a means for compressing the insertion end of this core much in the same manner as the slots in the preferred construction.

In Figs. 7 and 8 the auxiliary core has been constructed as the main spindle of a wall fixture or recessed wall bracket for paper dispensation. This core provides a spindle 25 having pintles 26 and 27 that fit into recesses 28 and 29 formed in the side walls of a conventional recessed wall fixture 30.

The pindle 27 in this case forms the portion of a plunger 31 having an annular groove 32 into which a pin 33 extends, such pin 33 being secured into the body of the spindle 25. Pin 33 limits endwise movement of the pindle 27 and its plunger 31. A spring of selected tension is shown as nested within the plunger bore 35 drilled in the end of the spindle 25. Such spring 34 normally holds the plunger 31 and the connected pindle 27 in the outward position indicated in Fig. 7 for frictional engagement with the wall fixture 30 within the recess 29. Thus the spindle 25 is frictionally retarded against too free rotation while

such frictional means also permits the removal of the spindle from the bracket and reinsertion of the same into the bracket.

This spindle 25 is also made with tapered ends 36 and 37 providing a smaller diameter at such ends for insertion into soft core paper rolls. Furthermore, diagonal saw cuts 38 and 39 are provided to produce compressible ends which directly coact with the reduced diameter ends 36 and 37 to facilitate free and easy insertion of the spindle 25 into a core of a paper roll of the kind described. A fragmentary portion of a partially spent paper roll is indicated at 40 with its soft core 41 snugly carried directly upon the surface of the spindle 25 so that the roll 40 frictionally rotates directly with the spindle 25 and the resilient means carried at the end of the spindle also directly retards the roll 40 in an obvious manner.

The long diagonal slots 38 and 39 are so placed to obtain a thicker portion at the terminal ends in the spindle body 25 and also to provide a longer flexing surface for limited adjustment within cores 41 which may vary slightly through expansion from dampness or for other reasons. Obviously, the surface contour of the spindle 25 may be constructed along the lines of the preferred auxiliary core of Figs. 1 and 2.

Modifications and changes of the auxiliary cores shown and described are contemplated as well as the substitution of equivalent means to carry out the principles herein set forth by the present invention. Such modifications shall be governed by the breadth and scope of the language of the appended claims submitted herewith.

What I claim is:

1. An auxiliary core for a dispensable paper sheet roll having a soft core, comprising a rigid hollow member adapted for insertion into the soft core of said sheet roll, said rigid member comprising rotational means to support said sheet roll for free rotation therewith and upon a roll paper dispenser, said member having a predetermined surface contour with all of the high points of said surface terminating at and coinciding with a common hypothetical cylindrical surface, and wherein the diameter of such hypothetical cylindrical surface common to the aforesaid high points is equal to the normal internal diameter of the soft core of said sheet roll whereby said soft core and the paper thereon are rounded out into true circular shape, and means at the ends of said rigid hollow member to permit limited compression of said member at its ends to facilitate insertion into the soft core of said sheet roll.

2. An auxiliary core for an open soft centered sheet paper roll, comprising a rigid cylindrical member adapted for snug insertion into said open centered roll, said rigid member comprising rotational means to support said sheet roll for free rotation therewith and upon a roll paper dispenser, said cylindrical member having fixed ridges thereon arranged for edgewise insertion into said paper roll center to reduce surface friction upon insertion or retraction, and slots in the ends of said member to allow compression of the latter at its ends to facilitate insertion into said roll.

3. An auxiliary core for an open soft centered sheet paper roll, comprising a stiff tube for insertion into said open centered roll, said stiff tube comprising rotational means to support said sheet roll for free rotation therewith upon a roll paper dispenser, a plurality of ridges upon said tube disposed longitudinally thereon to reduce surface friction during insertion of or retraction from said open centered roll, and diametrically located

slots at the ends of said tube for contraction of either tube end to facilitate insertion of the tube into said open centered roll, said diametrical slots in one end of said tube being angularly displaced from the diametrical slots in the other end of said tube.

4. An auxiliary core for an open soft centered sheet paper roll, comprising a stiff tube for insertion into said open centered roll, said stiff tube comprising rotational means to support said sheet roll for free rotation therewith upon a roll paper dispenser, a plurality of ridges upon said tube disposed longitudinally thereon to reduce surface friction during insertion of or retraction from said open centered roll, and diametrically located slots at the ends of said tube for contraction of either tube end to facilitate insertion of the tube into said open centered roll, said diametrical slots in one end of said tube being angularly displaced from the diametrical slots in the other end of said tube, and finger grip means disposed within said tube adjacent to the ends thereof to facilitate the removal of the tube from the used paper roll.

5. An auxiliary core for a dispensable paper sheet roll having a soft core, comprising a rigid cylindrical member of uniform external diameter throughout its length and adapted for snug insertion into the soft core of said sheet roll, said rigid member comprising rotational means to support said sheet roll for free rotation therewith and upon a roll paper dispenser, said cylindrical member having tapered ends to facilitate such insertion, and oppositely related slots formed in the opposite ends of said cylindrical member to allow contraction of either of said ends during insertion of said cylindrical member into the soft core of said sheet roll.

6. An auxiliary core for a dispensable paper sheet roll having a soft core, comprising a rigid cylindrical member adapted for snug insertion into the soft core of said sheet roll, said cylindrical member having tapered ends to facilitate such insertion, and oppositely related slots formed in the opposite ends of said cylindrical member to allow contraction of either of said ends during insertion of said cylindrical member into the soft core of said sheet roll, and pivotal supporting means connected with said cylindrical member to mount the latter for rotation upon a conventional wall fixture.

7. An auxiliary core for a dispensable paper sheet roll having a soft core, comprising a rigid cylindrical member adapted for snug insertion into the soft core of said sheet roll, said cylindrical member having tapered ends to facilitate such insertion, and oppositely related slots formed in the opposite ends of said cylindrical member to allow contraction of either of said ends during insertion of said cylindrical member into the soft core of said sheet roll, and pivotal supporting means connected with said cylindrical member to mount the latter for rotation upon a conventional wall fixture, said pivotal supporting means including resilient mechanism arranged to frictionally engage a portion of said wall fixture to control the freedom of rotation of said cylindrical member and the paper roll relative to said fixture.

8. A spindle for a wall bracket adapted for insertion into a soft roll paper core, comprising a rigid roll with an external diameter to snugly enter said soft core to frictionally mount said paper roll thereon, said rigid roll having portions thereof of radially depressible to adjust said roll to the in-

terior of said soft core, and resilient means carried by said spindle and adapted to frictionally contact a portion of said wall bracket to control the freedom of rotation of said roll paper relative to said bracket.

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