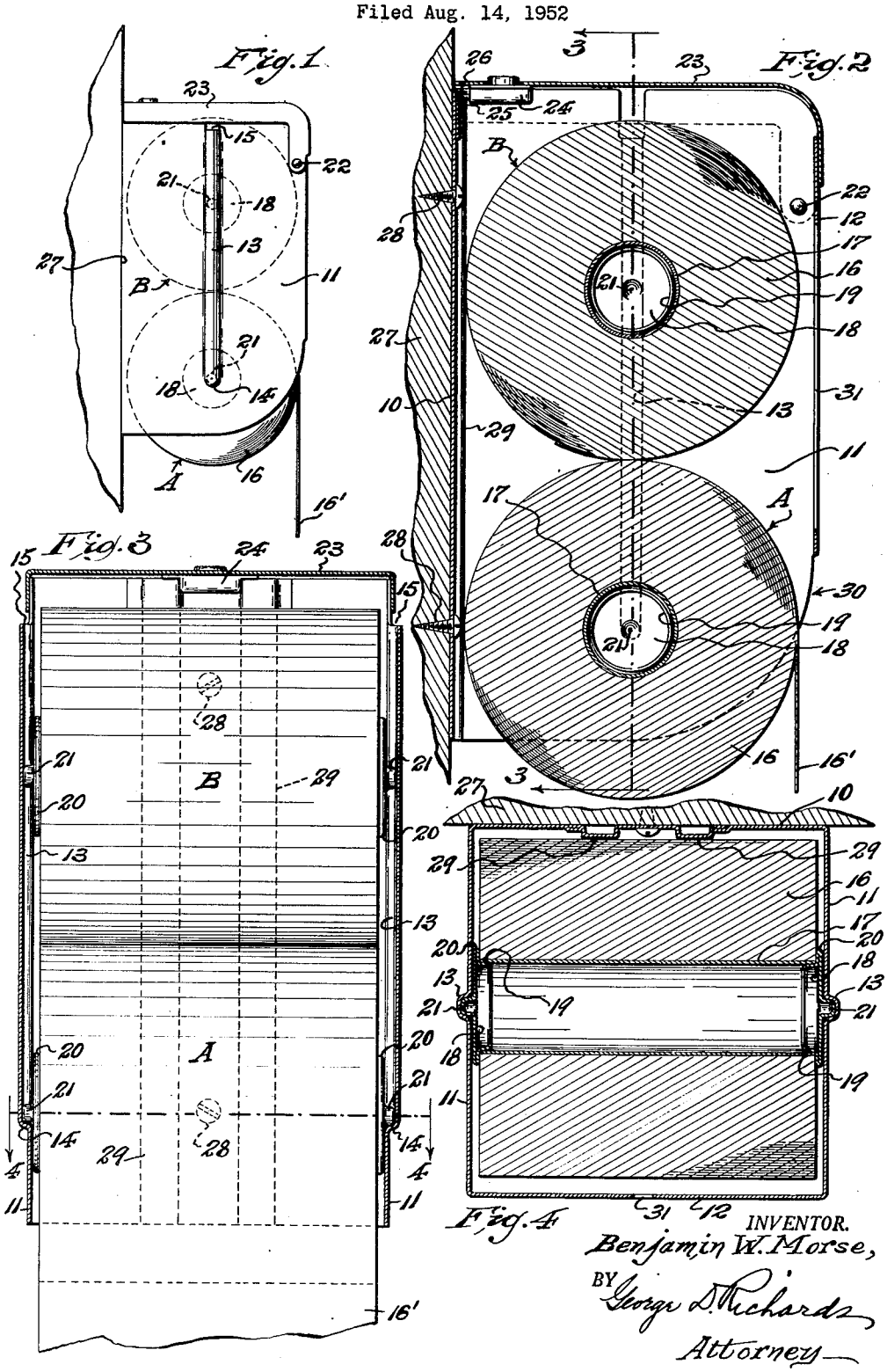
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DISPENSER FOR ROLLED SHEET MATERIAL

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DISPENSER FOR ROLLED SHEET MATERIAL

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2 Claims. (Cl. 242—55.3)

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This invention relates to improved means for dispensing rolled sheet material, such as toilet tissue, wax paper, rolled paper or other fabric towels and napkins, and the like; and the invention has reference, more particularly, to a dispenser, adapted to contain a plurality of rolls of such sheet material, so constructed as to dispose a bottommost roll in position for use subject to withdrawal of the sheet material therefrom, with a reserve roll or rolls positioned above the roll in use, and supported so as to automatically replace the latter when its supply of sheet material is exhausted.

The invention has for its objects to provide a very simple and inexpensive dispenser adapted to so house and support a plurality of rolls of sheet material that a reserve roll will, under gravity, automatically replace a roll in use when its supply of sheet material is exhausted, without necessity for use or manipulation of movable reserve roll detent mechanism or devices; to provide a dispenser so characterized, which is pilfer proof, so that the contained rolls cannot be removed therefrom until exhausted; to provide a dispenser so characterized, wherein a reserve roll is constantly in contact with a roll in use, whereby the former acts upon the latter as a momentum brake against undesirable spinning off from the roll in use of material in excess of that desired to be detached therefrom for use; and to provide novel means for application to the ends of tubular cores upon which the sheet material is wound in roll formation, whereby to furnish trunnion elements for rotatably supporting the rolls in the dispenser, said trunnion means being adapted to be applied to the rolls by the roll manufacturer, so as to be supplied to the consumer therewith, and therefore subject to be furnished in predetermined size and form adapted to fit and cooperate with the dispenser, whereby to exclude use of competitive rolls in the dispenser.

The above and other objects of this invention will become apparent upon reading the following detailed description of the invention in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view of a dispenser embodying the construction and principles of this invention; Fig. 2 is a central longitudinal sectional view through the dispenser, but drawn on an enlarged scale; Fig. 3 is a transverse longitudinal sectional view of the same, taken on line 3—3 in Fig. 2; and Fig. 4 is a horizontal sectional view of the same, taken on line 4—4 in Fig. 3.

Similar characters of reference are employed

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in the hereinabove described views, to indicate corresponding parts.

The dispenser according to this invention comprises a perpendicular endwise open casing of rectangular cross-sectional shape formed by a back wall 10, opposite side walls 11 and a front wall 12. The casing interior is of depth dimension from back wall to front wall somewhat in excess of the initial diameters of the rolls of sheet material to be supported therein, and of a width dimension between its side walls somewhat in excess of the length of said rolls. The casing is preferably formed from sheet metal, although it will be obvious that it can be produced or fabricated from any other suitable material.

The internal faces of the side walls 11 of the casing are indented by guide channels 13, which respectively extend perpendicularly downward from the top marginal portions of said side walls, and intermediate the back wall 10 and the front wall 12, but so as to terminate at their lower ends in stop shoulders 14 by which said lower ends are closed. Said stop shoulders 14 are suitably spaced above the bottom edges of said side walls 11. The top ends of said guide channels 13 are upwardly open, thus providing the same with entrance mouths 15.

The rolls of sheet material to be contained in the dispenser casing each comprise a selected sheet material 16, such e. g. as toilet tissue, which is wound around a tubular cardboard or paper core 17, whereby to form a supply roll thereof from which the same can be withdrawn and torn away as use thereof is required. Mounted in connection with each end of the tubular core 17 is a trunnion forming means adapted to support the roll from and between said guide channels 13, when the roll is placed within the dispenser casing. Each trunnion forming means comprises a circular end plate 18 of a diameter greater than the diameter of the tubular core 17, the same having a circular or annular hub portion 19 disposed to project axially from its inner face or side, said hub portion being diametrically sized to enter the interior of the tubular core 17 in such manner as to frictionally engage the contacted wall of the latter. This formation provides the end plate 18 with a peripheral flange 20 which is adapted to abut an end of the roll when the trunnion forming means is operatively assembled therewith. Projecting axially outward from the end plate 18, and preferably formed as an integral part thereof, is a trunnion element 21 which is adapted to enter and engage with the guide channel 13 of a side wall 11 of the dispenser

casing. The trunnion forming means, formed as above described, is preferably produced from thin sheet metal, but, as will be obvious, may be produced by stamping, molding or in any other suitable manner, from any other suitable material. The trunnion elements 21 are sized and shaped to provide contours which conform to the internal cross-sectional contours of the guide channels 13 of the dispenser casing, whereby to be supported by the latter both for gravitational movement therein as well as for rotation therein, thus pivoting the roll for turning movement about its longitudinal axis, when the roll is placed within the dispenser casing.

Pivotally connected with the upwardly open top end of the dispenser casing by a hinge connection 22 is a closure member or cover 23. This closure member or cover is provided with a lock member 24 having a key actuatable lock bolt 25, which, when the closure member or cover is closed over the open top of the dispenser casing, is adapted to engage beneath a latch projection 26 that is affixed upon the interior face of the back wall 10 of said casing, thus locking the latter against pilfering removal of rolls of sheet material deposited within the said casing subject to dispensing of the sheet material therefrom.

The dispenser casing is adapted to be affixed to a wall 27 at a selected place of use by fastening screws 28, or by any other suitable means or in any other suitable manner. Provided in connection with the back wall 10 of the dispenser casing are one or more perpendicularly extending inwardly projecting fender members or ribs 29. These fender members or ribs 29 may be struck or pressed out from the back wall material as integral parts thereof or may comprise separate pieces or strips affixed to said back wall. When rolls of sheet material are deposited within the disepnser casing, said fender members or ribs fend said rolls from possible injurious or tearing contact of the sheet material thereof with the fastening means by which the dispenser casing is secured in place of use.

The dispenser casing is dimensioned to hold a plurality of the rolls of sheet material, the bottommost of which provides a roll in use and the others reserve supply rolls. The dispenser casing may be sized to hold one or more reserve supply rolls. For the purpose of illustration, but without limiting intention, the dispenser casing is shown as sized to accommodate a roll A in use and a single reserve supply roll B.

To load the dispenser casing with the rolls A and B, the closure member or cover 23 in unlocked and swung to open position, so that said rolls can be entered in the casing interior through its top end. The rolls A and B, having been previously equipped with the trunnion forming means hereinabove described, are successively dropped into the casing interior in such manner that the trunnion elements 21 thereof respectively enter the opposite guide channels 13 through the upwardly open mouths 15 of the latter. The first entered roll gravitates to a bottommost position determined by the abutment of its trunnion elements 21 upon the stop shoulders 14 which terminate said guide channels 13, thus positioning this roll to serve as a roll A in use. The next entered roll gravitates to a position wherein it is stopped against said roll A in use, thus disposing the same to serve as a reserve supply roll B. The front wall 12 of the dispenser casing is cut away or shortened to provide, beneath its bottom end, an opening 30 which gives access to the sheet material 16 on the roll A in use, so that a depending free end portion 16' of said sheet material is exposed to the grasp of a user desiring to withdraw and tear away a required portion of said sheet material from said roll A in use.

After the rolls A and B have been mounted within the dispenser casing, the closure member or cover 23 is closed and locked, and consequently said rolls cannot be surreptiously removed or stolen from said casing, but can only be discharged therefrom by unwinding withdrawal of the sheet material therefrom.

Since the reserve supply roll B gravitates toward the roll A in use, it maintains constant contact with the latter as the same is rotated by withdrawal of the sheet material therefrom, and consequently said reserve supply roll B, although free to rotate in response to the rotative movement of the roll A in use, by its pressure upon the latter acts thereupon as a momentum brake which efficiently prevents undue spinning off of the sheet material therefrom in excess of that desired to be withdrawn and torn away for use.

After the sheet material 16 of the roll A in use has been entirely withdrawn from the tubular core 17 of this roll, said core 17 is exposed so as to be accessible through the open front and bottom of the dispenser casing. Said core 17, being thus accessible, and since it comprises cardboard or paper, can be grasped and squeezed to crush or collapse and bend the same. Such crushing or collapsing and bending of the tubular core 17, so distorts and shortens the same as to dislodge the trunnion elements 21 of its trunnion forming means from the supporting bottom stop shoulders 14 of the guide channels 13, thus disengaging the trunnion forming means from said guide channels, and thereby permitting the core, with said trunnion forming means, to be outwardly withdrawn and removed from the interior of the dispenser casing, and thereupon discarded. Upon such removal of said core of the roll A in use, the reserve supply roll B drops down so that its trunnion elements 21 slide down through the guide channels 13 until stopped against the stop shoulders 14 of the latter, whereupon said reserve supply roll B replaces the exhausted roll A, and becomes in turn the roll in use. It will thus be understood that a reserve supply roll will, merely by its gravitation in the dispenser casing, automatically replace an exhausted roll, so that all necessity for manipulatable release mechanism, roll detents or other moving parts is entirely obviated. As a consequence of this, the dispenser device comprises an exceedingly simple and inexpensive structure having no moving parts likely to become out of order, and yet one which is very practical and efficient for the storage of reserve supply rolls ready to automatically replace an exhausted roll in use, when the core of the latter is removed as described.

The front wall 12 of the dispenser casing may be provided with an opening or slot 31 which permits the interior of the casing and its content to be observed for determining need to recharge the same with rolls of sheet material to be dispensed therefrom.

Since the trunnion forming means, by which the rolls of sheet material are supported within the casing subject to gravitation and rotation therein, are provided with trunnion elements 21

sized and shaped to conform to the guide channels 13 of the dispenser casing side walls 11, and since said trunnion forming means are inexpensive, so as to be dispensable with discarded roll cores, the same can be economically applied to the roll cores by the producer of the rolls, and the rolls, thus equipped, furnished to the consumer ready for insertion in the dispenser casing; which the consumer can easily accomplish without necessity for manipulation of any roll engageable moving parts or control mechanisms, since all that the consumer is required to do is to release and open the top closure member or cover 23 and thereupon enter the rolls in the dispenser casing in the manner already above explained. The provision of trunnion forming means which are specially designed to conform to the guide channels 13 of the dispenser casing also well serves to limit the use of the dispenser casing to rolls so equipped, and therefore to exclude use of competitive rolls which lack such equipment.

Having now described my invention, I claim:

1. A dispenser adapted to contain a stack of rolls of sheet material, each roll of which includes a collapsible tubular core upon which the sheet material is wound, and further adapted to dispose a bottommost roll in position for use subject to withdrawal of sheet material therefrom, with remaining rolls in reserve; said dispenser comprising a perpendicular endwise open casing, inwardly open perpendicular guide channels provided in connection with opposite side walls of the casing intermediate the front and back walls of said casing, said guide channels being outwardly open at their upper ends and having permanently closed bottom ends forming non-yieldable stop shoulders spaced above the open bottom end of the casing, and trunnion forming means adapted to be detachably mounted in opposite ends of the tubular core of each roll and having outwardly projecting trunnion elements receivable by said guide channels, whereby to mount the rolls within the casing so as to be subject to both gravitation and rotary movements therein, the trunnion elements of the bottommost roll normally abutting said stop shoulders, whereby to dispose said roll in a normally non-removable position for use within the casing subject to manual withdrawal of sheet material therefrom through the open bottom portion of the casing, with the next roll above, under gravity, maintained in continuous contact therewith, whereby to serve as a momentum brake against excessive rotation of said roll in use when sheet material is withdrawn therefrom, and the core of said roll in use, after exhausting discharge of sheet material therefrom, being accessible through the open bottom portion of the casing subject to squeezing grasp, whereby to collapse the same for withdrawal of its trunnion elements from the stop shoulders of the guide channels to release said core for removal from the casing and thereby to permit a succeeding roll to thereupon gravitate to a position of use.

2. A dispenser according to claim 1 including fastener means cooperative with the back wall of the casing, whereby to attach said casing to a supporting surface at a place of use, and said back wall of the casing having at least one perpendicular fender rib projecting from its inner face adapted to fend rolls contained in the casing from injurious contact with said fastener means.

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