Feb. 6, 1962 P. A. WOOSTER 3,019,997

PAPER ROLL DISPENSER

Filed May 29, 1958

FIG_1_

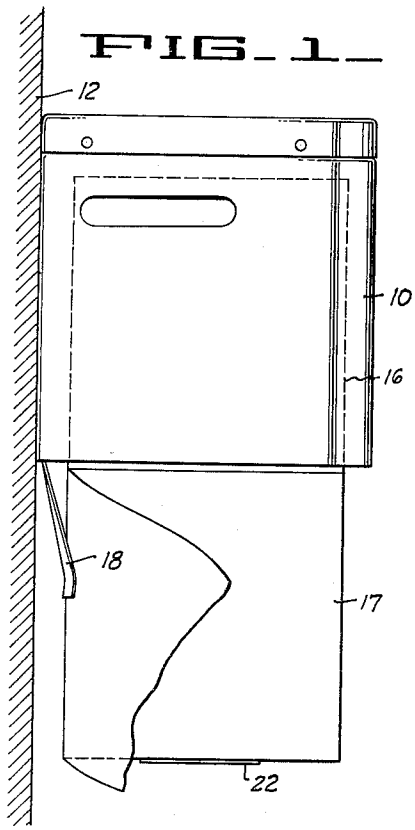
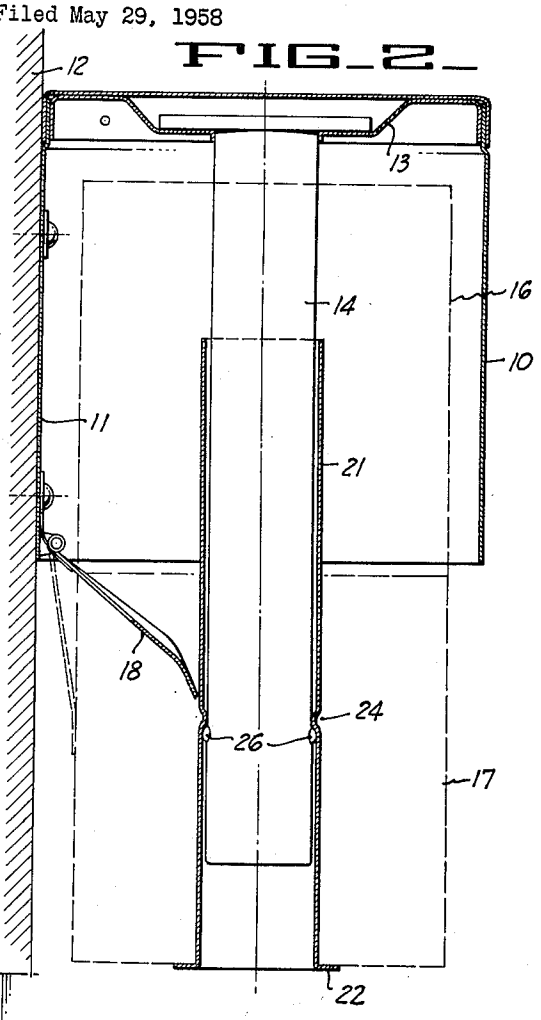



FIG_2_



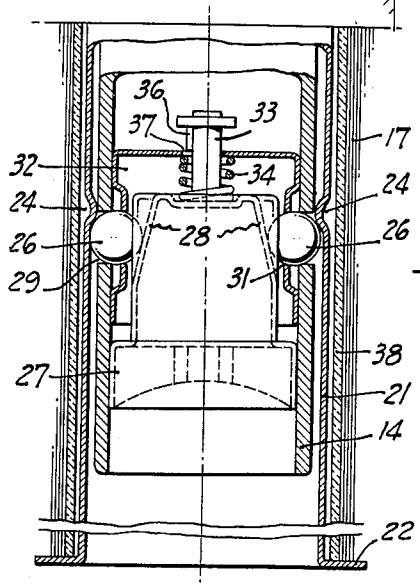




FIG_3_

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# 3,019,997
# PAPER ROLL DISPENSER

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2 Claims. (Cl. 242—55.42)

This invention relates generally to devices for dispensing paper from rolls, and particularly rolls of the toilet paper or toilet tissue type.

One type of dispenser which has been used with toilet paper rolls employs a stud or mandrel on which the rolls are disposed and which has its upper end attached to a suitable support. The tubular paper cores upon which the paper is wound are provided with inner annular ribs, and the lower portion of the stud is provided with locking means whereby the lower roll is releasably held upon the stud, thus retaining both rolls, one above the other. After using all of the paper on the lower roll, the paper core is stripped away, thus permitting the upper roll to drop down to dispensing position.

While dispensing devices of the type described above have certain desirable features, they are subject to certain disadvantages. Particularly the provision of an inner rib involves added expense and tends to interfere with the use of such rolls on conventional dispensing devices. Also such ribs are subject to damage, with the result that the roll may not rotate freely upon the stud, or may not be properly held in place.

In general it is an object of the present invention to provide an improved dispensing device of the above type, which avoids the use of retaining ribs or like means on the paper cores of the rolls.

Another object of the invention is to provide a dispenser of the above character which has improved means for retaining the rolls in place.

Additional objects and features of the invention will appear from the following description in which the preferred embodiment has been set forth in detail in conjunction with the accompanying drawing.

Referring to the drawing:

FIGURE 1 is a side elevational view showing a dispensing device in accordance with the present invention.

FIGURE 2 is a side elevational view in section and illustrating the principal operating parts.

FIGURE 3 is an enlarged cross sectional detail illustrating suitable locking means carried within the lower end portion of the stud.

Referring to FIGURES 1 and 2, the dispenser illustrated consists of a housing 10, having its lower end open, and having a back wall 11 suitable for attachment to a wall 12 or other support. The top wall 13 of the housing serves to mount the upper end of a depending stud or mandrel 14. In practice, this stud can be made of metal tubing. When in operation two rolls 16 and 17 may be accommodated upon the stud 14, the upper roll 16 being largely enclosed within the housing 10. When all of the paper has been consumed from the lower roll 17, the tubular paper core of this roll is stripped away thus permitting the upper roll 16 to drop down for use. A hinged plate 18 is urged by spring means (not shown) to yieldably engage the lower roll to prevent free unrolling of the paper.

As previously stated, in the past it has been common with such devices to provide the hollow core of each roll with an internal rib which serves in conjunction with locking means for retaining the lower roll upon the stud. Instead of such means, I make use of a tube 21 (FIGURES 2–3) which is dimensioned to loosely slide over the stud 14. The outer diameter of this tube is less than the opening through the paper rolls, whereby the tube can be freely inserted through the rolls. The lower end of this tube is provided with a flange 22



adapted to engage the lower end of the bottom roll. Intermediate its ends the tube is grooved to form the annular internal rib 24. This rib is adapted to engage the projected members 26 of locking means carried by the lower portion of the stud.

A variety of locking mechanisms can be used to provide the retractable members 26. The means shown (schematically) for this purpose consists of a member 27, which has inclined or tapered grooves 28, within which the members 26 operate. Members 26 are in the form of balls which are accommodated within the openings 29 provided in opposite wall portions of the stud 14, and openings 31 formed in the member 32, which is fixed within the mandrel. A stud 33 is attached to member 27, and slidably extends through an opening in member 32. Spring 34 urges the member 27 downwardly, or toward the lower open end of the mandrel. Suitable latch means, such as a lug 36 on stud 33, which may pass through a notch 37, serves to hold the member in such a position as to hold the members 26 projected. Upon turning member 27 manually, by means of a key, lug 36 is brought into alignment with slot 37, thereby permitting member 27 to move downwardly a limited distance sufficient to permit retraction of members 26, with the result that the tube 21 can then be removed. When member 27 is forced upwardly against the spring 34, the dimensioning can be such that when lug 36 is free of the slot 37, the stud 33 rotates a small amount, whereby member 27 is locked in such raised position, and the members 26 locked in their projected positions to hold the tube 21 against downward displacement.

FIGURE 3 shows a paper roll 17, with its inner paper core 38. Note that the lower end of the core 38 rests upon the flange 22, whereby the roll is retained upon the tube 21 but is free for rotation.

Operation of my dispenser is as follows:

The tube 21 is of sufficient length whereby two rolls can be placed upon the same, and thereafter the tube is slipped over the mandrel 14. At that time the latching means is released whereby the rib 24 passes over the locking members 26. While holding the tube in position manually, the operator presses upwardly upon the member 27, whereby this member is latched in locking position, with the members 26 projected to serve as an abutment against which the rib 24 engages. The tube is thus releasably attached to the mandrel, with the result that the rolls are properly held in place, and may be freely rotated in stripping off paper. After consuming all of the lower roll, its inner paper core 38 is stripped away, thus permitting the upper roll to drop down against the flange 22.

The rib 24 forms a convenient means for engagement with members 26, and permits free rotation of the tube about the stud or mandrel 14. Therefore if there should be some binding between a roll and the tube, it does not interfere with free rotation of the roll.

I claim:

1. In a paper roll dispenser, a base support, a stud having one end of the same rigidly fixed to the support, a rigid tube loosely fitted over the stud and having a length greater than the length of one roll, that end of the tube corresponding to the free end of the stud being provided with a flange for engaging one end of an adjacent roll whereby the rolls are retained upon the stud, said stud being hollow, and releasable locking means carried within said stud in that portion of the same normally embraced by said tube for releasably retaining the rigid tube on the stud, said locking means having a moveable portion accessible through the flanged end

of said tube for releasing said locking means, the combined length of the stud and tube in the retained position of the same being such as to extend through a plurality of aligned paper rolls disposed end to end upon the same.

2. A dispenser as in claim 1 in which the releasable locking means includes an inwardly projecting circumferential annular rib on the rigid tube, and radially moving members mounted on said stud, said members being moveable into engagement with said rib for loosely retaining the tube on the stud.



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