April 19, 1966 H. GALBRAITH 3,246,937

PAPER ROLL DISPENSER

Filed Nov. 29, 1963

FIG. 1.

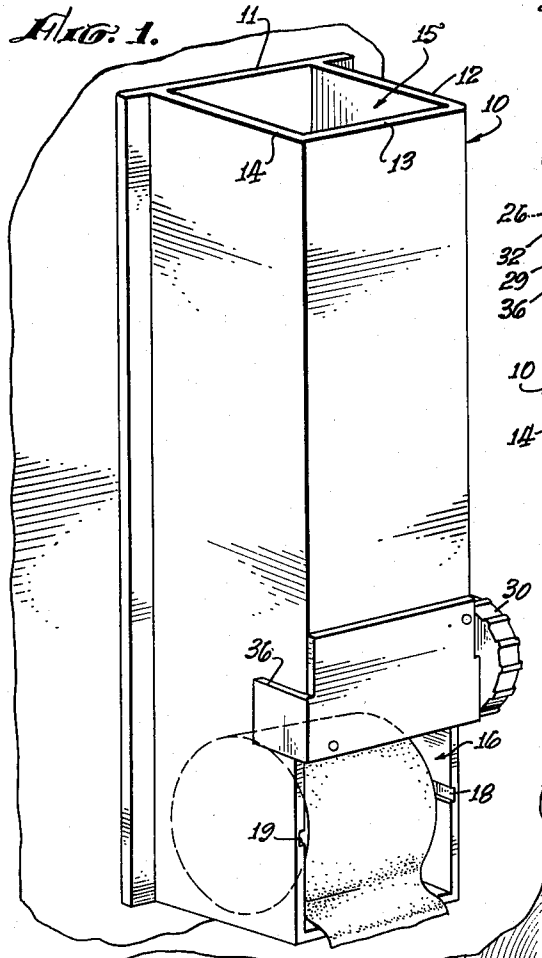


FIG. 2.

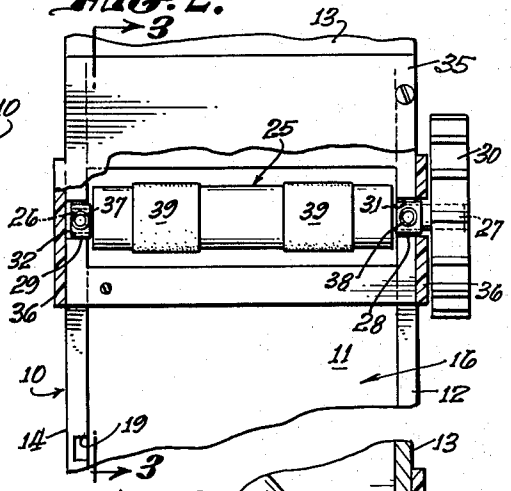
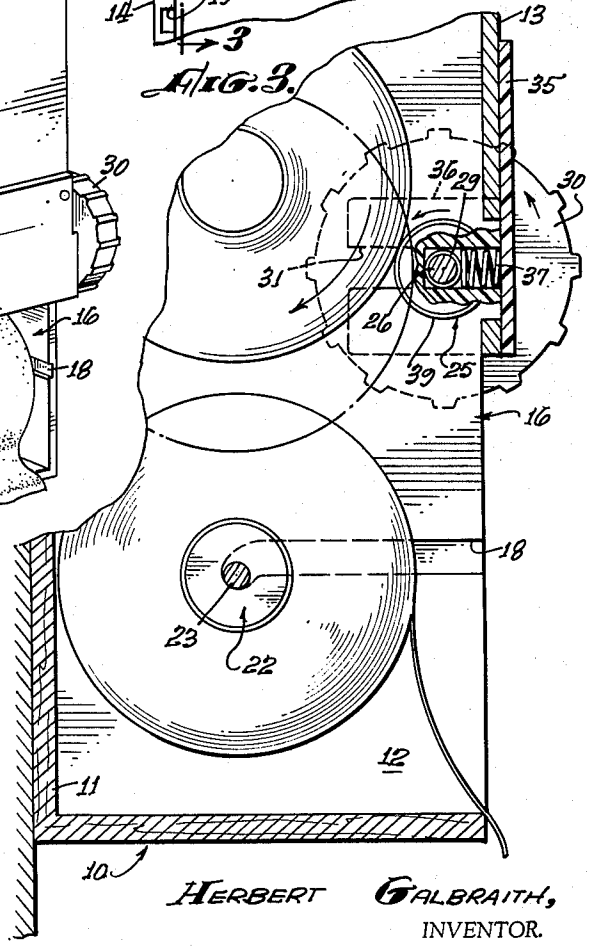


FIG. 3.



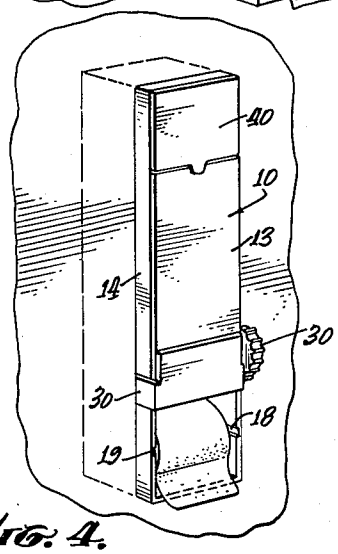


FIG. 4.

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United States Patent Office 3,246,937
Patented Apr. 19, 1966

3,246,937

PAPER ROLL DISPENSER

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Filed Nov. 29, 1963, Ser. No. 326,753
2 Claims. (Cl. 312—40)

This invention relates in general to storage and dispensing devices, and more particularly to a storage and dispensing container for toilet paper rolls.

There are a number of commercial devices adapted to hold more than one roll of paper in order to avoid a situation wherein the supply is exhausted before an attendant is notified to replenish the supply. Generally such devices are designed to hold two rolls in tandem relationship. They usually do not supply a true storage facility, and seldom are they assurance of use of one roll only before the second is started.

It is an object of this invention to provide a convenient storage housing for toilet tissue rolls, which housing will permit obtaining a new roll to replace an exhausted roll without need to go to a remote storage area.

A further object of this invention is to provide convenient wall storage facilities for toilet tissue rolls.

For a full understanding of the invention, a detailed description of the preferred embodiment of the paper roll dispenser will now be given in conjunction with the accompanying drawings and the features forming the invention will then be specifically pointed out in the appended claims.

FIGURE 1 is a perspective view of a wall-mounted storage and dispensing device embodying the features of this invention;

FIGURE 2 is a partial front view of the device, with parts broken away to reveal the nature of a gate and dispensing means;

FIGURE 3 is a partial sectional view taken substantially along the line 3—3 of FIGURE 2; and

FIGURE 4 is a perspective illustration of an alternate wall-recessed embodiment.

In FIGURE 1, a wall mounted embodiment of the invention is illustrated by a housing **10** having a back wall **11** suitable for attachment to a building wall by any suitable means, but none has been illustrated. The balance of the housing is formed by side walls **12**, **13**, and **14**, which jointly define a channel guide means for holding paper rolls in a longitudinal path with the axes of the rolls disposed transversally to said path. That is, the housing **10** has side walls which provide guide surfaces dimensioned to provide a longitudinal chamber in which toilet tissue rolls may be disposed with the axis of each roll oriented laterally of the axis of the chamber. It is a longitudinal through passageway dimensioned to receive toilet paper rolls at one end and dispense them from the other end. The most common roll size is one having a 4½" axial length, and a 4½" diameter. Thus, the passageway will be square in cross section.

The top of the housing thus defined is open for the purpose of receiving the paper rolls, and the front wall **13** is foreshortened to provide an opening **16** from which the rolls may be dispensed.

Usually, the housing **10** will be employed jointly as a storage device for several rolls, and a dispensing holder for a single roll, as opposed to the concept of dispensing an entire roll from the opening **16**, although mere storage and full roll dispensing are fully within the concepts of this invention.

A groove **18** in the wall **12**, and a similar groove **19** in the wall **14**, as best seen in FIGURE 3, provide a means to insert and retract a roller **22**. Roller **22** has end spindles **23** to fit into the grooves **18** and **19**. Thus, a paper roll may be provided having a central open core

in the conventional manner, and may be held upon the roller **22** as a spindle support. Thus, the roll can rotate about its central axis while being withdrawn in useable portions.

Additional rolls are held in the housing by means of a combination gate and dispensing means for causing the rolls of paper to pass thereby. Actually, the gate serves the purpose of blocking the passageway in such a manner that a roll of paper will not pass by of its own weight, and must be driven past the gate by a dispensing action.

The gate roller is indicated by a reference character **25**. Roller **25** is mounted on end spindles **26** and **27** and carried by bearings **28** and **29**. A hand drive wheel **30** is secured to the spindle **27** to provide a manual drive means for the gate roller **25**.

Notches **31** and **32** in the side wall **12** and **14** respectively are dimensioned to receive the bearings **28** and **29**. A cover plate **35** is secured over the face of the housing, and provides a removable enclosure for the gate roller **25**, and also provides an end closure for the notches **31** and **32**. Side shields **36** cover the scars made by the notches **31** and **32**, and provide an additional enclosure for the notches, thus causing each notch to be a closed receptacle on three sides with the roller itself closing the fourth side.

Thus, a spring **37** may reside in the notch **32**, and a spring **38** in the notch **31** and together will urge the gate roller to a position within the housing as deep as the dimension of the notches **31** and **32** will permit.

In this deep position within the housing, as best illustrated in FIGURE 3, there is not enough space in the through passageway of the housing to permit to normal roll of toilet tissue to drop past this roller **25**, and hence the roller serves as a gate means to prevent passage of rollers until the gate is open.

The roller **25** is provided with a tread surface, and the preferred embodiment illustrates two such areas as indicated by the reference characters **39**.

Therefore, as the hand wheel **30** is rotated in the direction of the arrow, the roller **25** will rotate in the same direction and cause the roll of paper in contact therewith to rotate in the opposite direction.

The paper roll is not confined to an axis of rotation. Therefore, upon drive movement of the roller **25** the paper roll will tend to wedge between the back wall **11** of the housing and the spring urged roller **25**. This wedge action will force the roller **25** to compress the springs **37** and **38**, to allow the roller to move away from the deepest path restriction area. Furthermore, rolls of toilet tissue are compressible. The central core is hollow and the paper is quite soft. Hence, the paper roll takes on an elliptical form, which together with the movement of the gate roller **25**, will permit the paper roll to drop past the gate and into the bottom of the housing. Thus, the roll may be taken from the opening **16** to a separate dispensing mount where it is to be used, or may be mounted in the grooves **18** and **19** as provided in this housing.

Although viewing means may be employed to determine when the rolls have been completely dispensed from the container, the lack of a resistant "feel" through the wheel **30** after a roll has been dispensed will indicate that another roll has not engaged the roller **25**, and therefore it is time to refill the housing.

An alternative means of using the housing, in new construction particularly, is to mount the housing into the walls between studs. If the particular partition wall into which the housing is to be mounted is typical framing dimension, the container may project somewhat into the room, but not to an appreciable distance. Otherwise, a wall may be made sufficiently thick to accept a properly dimensioned housing if desired. Such an alternate construction and mounting is shown in FIG. 4. Substantially, the

only alteration to this use is to provide a closed top to the container and a decorative closing lid 40 for the top opening of the housing.

While the instant invention has been shown and described herein in what is conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention which is therefore not to be limited to the details disclosed herein but is to be afforded the full scope of the claims.

What is claimed is:

1. A storage and dispensing means for toilet paper rolls, comprising:

a housing chamber defining a longitudinal through passageway having a longitudinal axis having a first and second end adapted to receive toilet paper rolls at one said end and dispense them from the other end;

a drive roller rotatably positioned across said housing adjacent one side thereof on resilient mounting means;

said mounting means including coil spring means urging said roller towards said longitudinal axis to provide a seat upon which the rolls may rest, said roller being yieldably held by said mounting means for movement toward and away from said longitudinal axis, said mounting means including bracket means for slidably receiving said roller, said bracket means having a channel portion for receiving said roller for sliding movement towards and away from said longitudinal axis; and

means to rotate said roller;

whereby, a paper roll will lie in said chamber blocked against passage by said roller until said roller is rotated in a direction to cause a roll to wedge between said roller and the chamber housing, thereby retracting the roller against said mounts and forcing the roll to pass thereby.

2. In a storage and dispensing container for paper rolls, vertical channel guide means for guiding a plurality of paper rolls therealong, said guide means having a longitudinal axis and a lower portion, a plurality of cylindrical paper rolls movably positioned within said guide means, each of said rolls having a cylindrical surface and a central axis disposed transversely of the longitudinal axis of said guide means, and gate and dispensing means for blocking free passage of said rolls along said guide means and for driving said rolls along said lower portion of said guide means, said gate and dispensing means movably mounted transversely of said longitudinal axis of said guide means adjacent said lower portion thereof, said gate and dispensing means including movable drive surface means for drivingly contacting said cylindrical surface of one of said rolls for driving the same along said lower portion of said guide means, said drive surface means resiliently movably mounted for movement toward and away from said longitudinal axis of said guide means upon movement of said one of said rolls along said portion of said guide means, said gate and dispensing means further including resilient means for urging said drive surface means toward said longitudinal axis.

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