Jan. 13, 1948. T. F. ANDERSON ET AL 2,434,342

PAPER TOWEL OR PAPER NAPKIN DISPENSING DEVICE

Filed Sept. 29, 1945 3 Sheets-Sheet 1

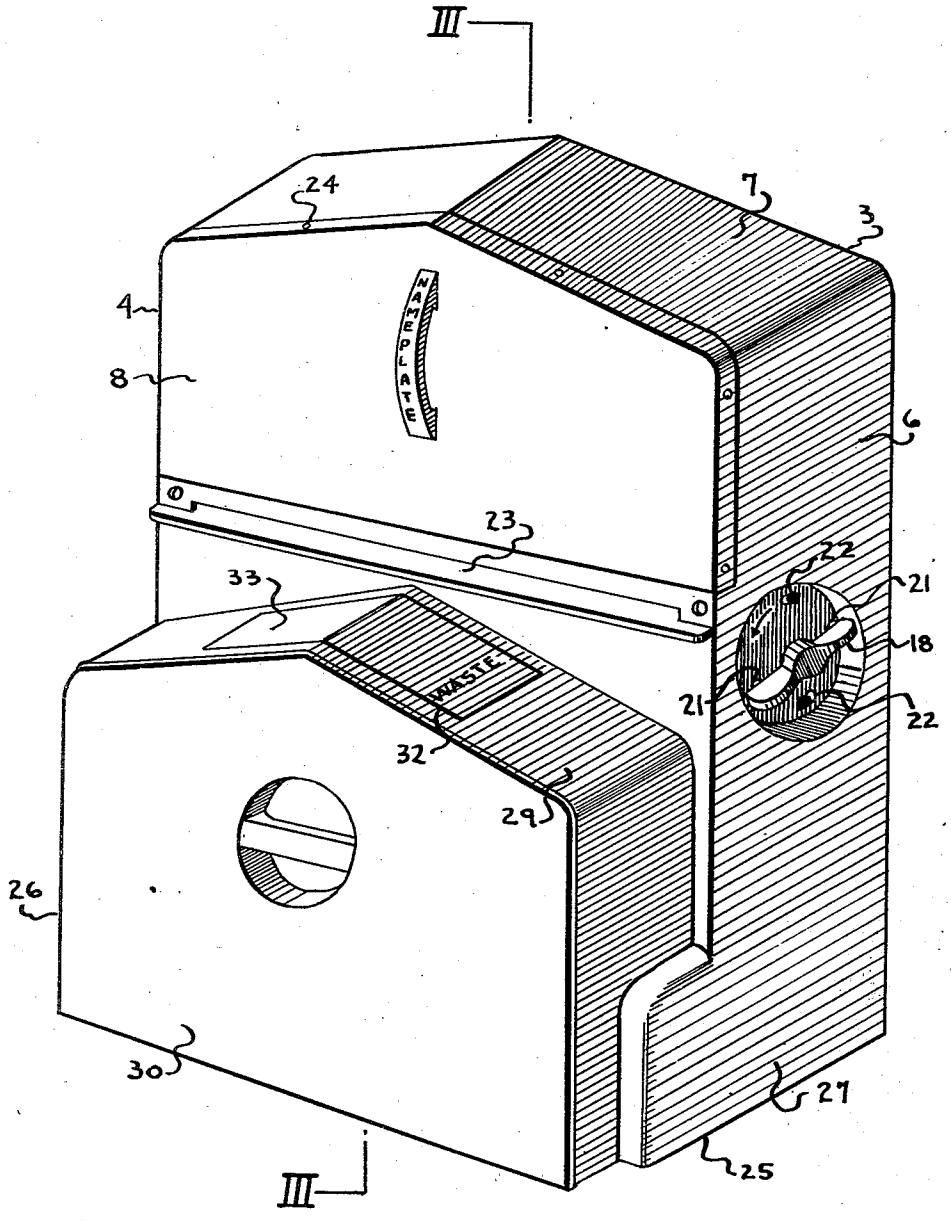


FIG. 1

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PAPER TOWEL OR PAPER NAPKIN DISPENSING DEVICE

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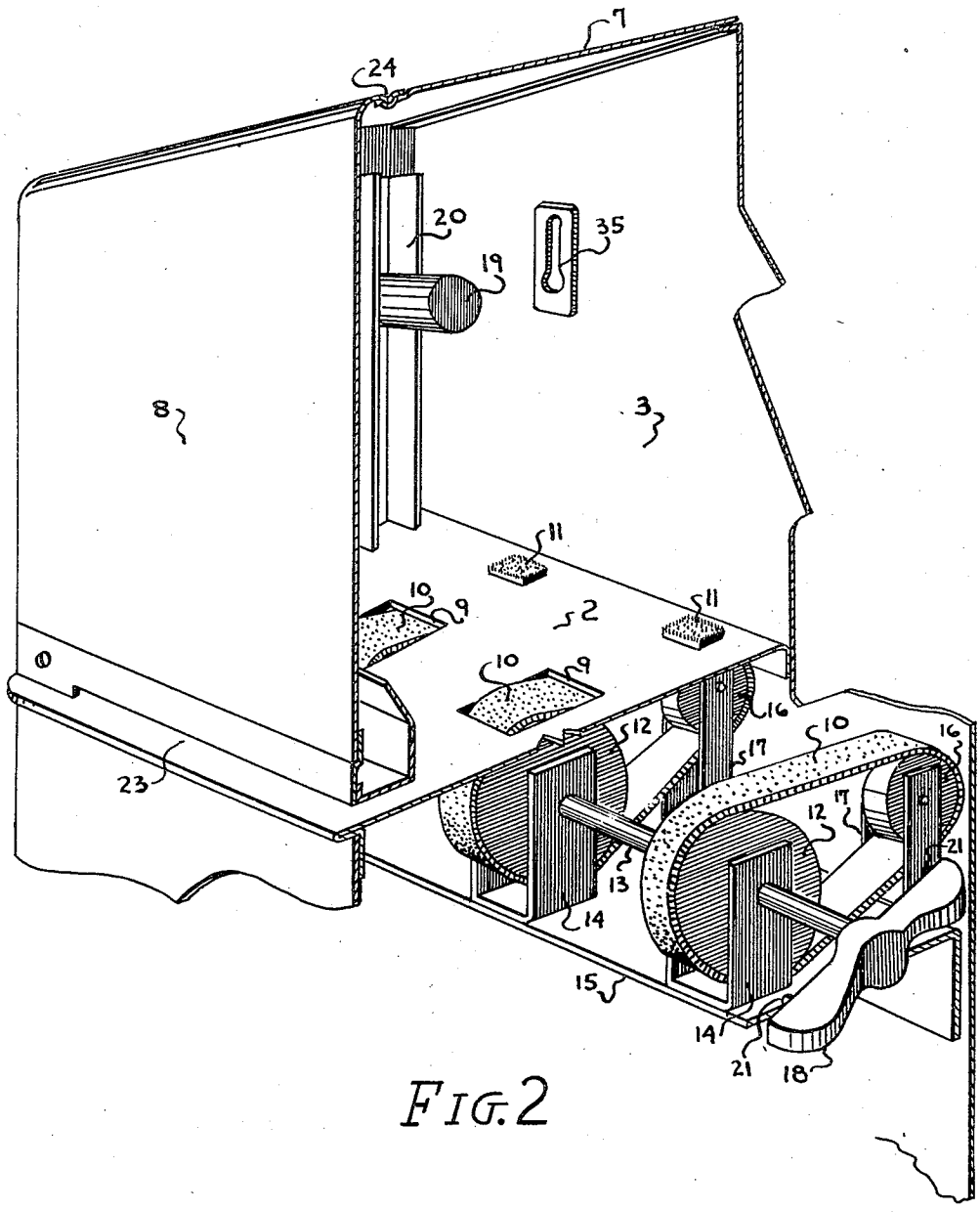


FIG. 2

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PAPER TOWEL OR PAPER NAPKIN DISPENSING DEVICE

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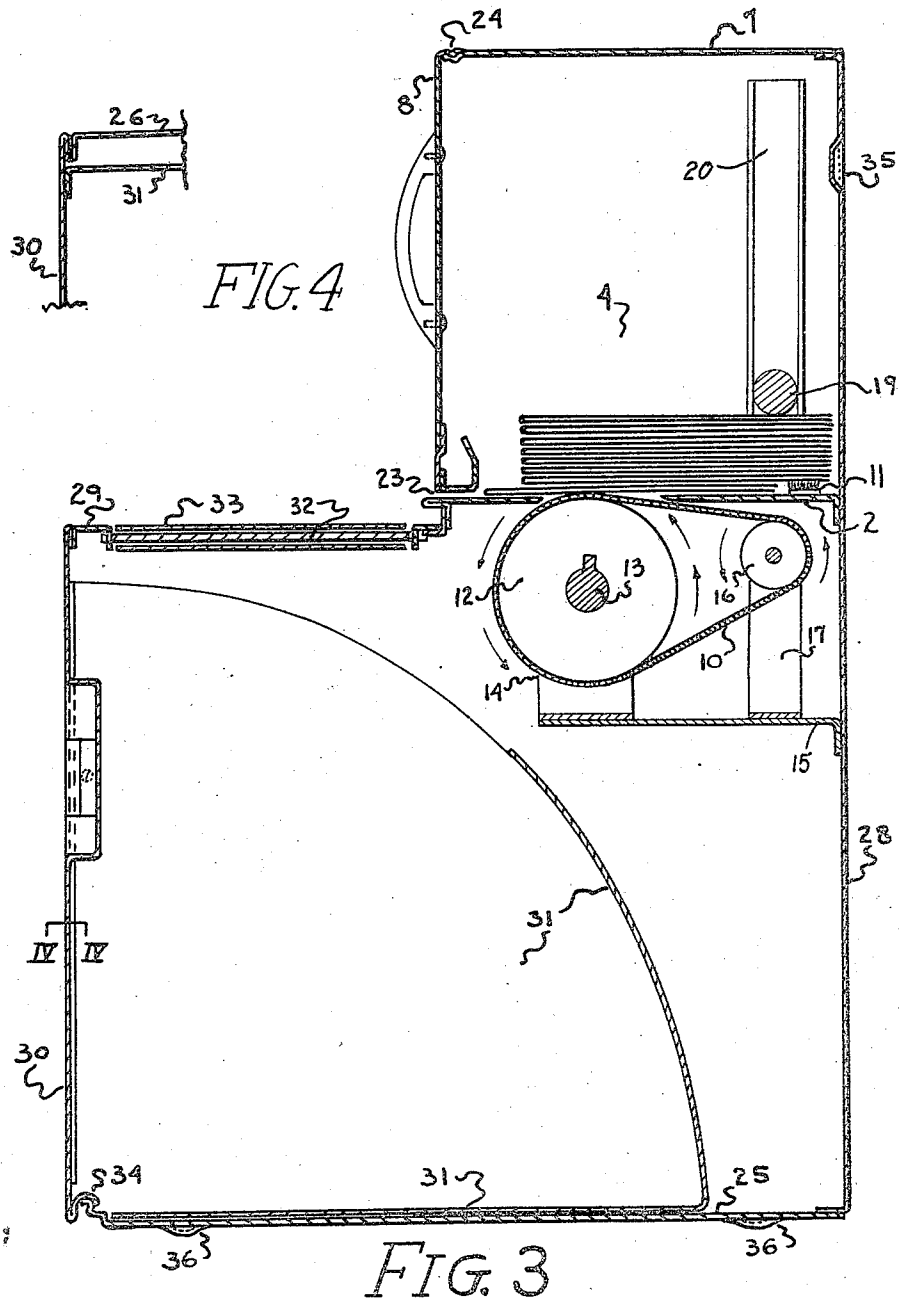


FIG. 4

FIG. 3

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UNITED STATES PATENT OFFICE

2,434,342

PAPER TOWEL OR PAPER NAPKIN DISPENSING DEVICE

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Application September 29, 1945, Serial No. 619,288

2 Claims. (Cl. 312—54)

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This invention relates to a paper towel or napkin dispensing cabinet.

An object of this invention is to provide a cabinet which will place before the user clean and sanitary paper towels or napkins.

Still another object of this invention is to provide a cabinet which will dispense individually folded paper towels or napkins thereby eliminating the necessity and cost of interlacing them.

A further object of this invention is to provide a cabinet which will dispense a single paper towel or napkin for each 180 degree turn of a handle, and will leave no part of the succeeding towel or napkin protruding, thereby eliminating waste and assuring sanitary towels or napkins.

A still further object of this invention is to provide a cabinet which is relatively simple in construction, having but a few parts, and which may, therefore, be manufactured and sold at a relatively low cost.

These and other like aims and objects are accomplished by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawings, forming part of this disclosure, and in which:

Figure 1 is a perspective view of the paper towel or napkin dispensing cabinet.

Figure 2 is an enlarged perspective view of the dispensing mechanism, parts of the cabinet being broken away.

Figure 3 is a section taken on the line III—III of Figure 1.

Figure 4 is a section taken on the line IV—IV of Fig. 3.

As seen in Figures 1 and 3, the upper portion of the cabinet provides storage for clean, dry and sanitary paper towels or napkins and dispenses one single paper towel or napkin at a time by turning a handle, mounted upon the outer surface of the cabinet, part of a complete revolution. This propels mechanism inside the cabinet, dispensing the paper towel or napkin. The lower portion of the cabinet provides a container to receive soiled or used paper towels or napkins. A self-closing cover mounted in an opening in the top of the forwardly protruding lower portion of the cabinet permits the insertion of the soiled or used paper towels or napkins. The soiled or used paper towels or napkins drop into a receptacle attached to the front emptying door in the lower portion of the cabinet.

The cabinet may hang upon a wall or set upon a table. When used in public wash rooms, bathrooms, or kitchens, the wall-hung method is convenient, while restaurants and beauty salons would use the table method.

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Referring now to the drawings more specifically, where the same characters are used to indicate the same element in all the figures, the dispensing portion of the cabinet consists of a bottom 2, a rear wall 3, a left side wall 4, a right side wall 6, a top 7 and a removable front wall 8, held to the top and side walls by catches 24.

The bottom 2, is arranged to slope downwardly at a slight angle toward the rear wall, the reason for which will appear later. A slot 23 is provided immediately above the forward portion of the bottom 2. Said bottom 2 has a plurality of openings 9 in the forward portion thereof, and a plurality of friction pads 11 secured thereto adjacent the rear wall of the cabinet. The friction pads may be made of any suitable rough surfaced material.

A platform 15 is mounted on the rear wall of the cabinet below the bottom 2 of the dispensing portion of said cabinet. Said platform is spaced from said bottom of the dispensing portion and extends approximately parallel thereto. A plurality of aligned U-shaped brackets 14 are mounted on said platform so as to register with said openings 9.

A shaft 13 is rotatably mounted in bearings in said brackets so as to extend parallel to the front wall of the cabinet. A wheel 12 is keyed to the shaft 13 in the crutch of each of said U-shaped brackets so as to protrude slightly through the opening 9 in the bottom of the dispensing portion. The size of each of said wheels 12 is such that its semi-circumference is approximately equal to the width of the folded paper towel or napkin to be dispensed, the reason for which will appear later. A smaller auxiliary wheel 16, rotatably supported by an auxiliary U-shaped bracket 17 is mounted in alignment with each of said wheels 12, and rearwardly thereof, upon said platform 15. An endless friction belt 10, made of garnet paper or any other suitable rough-surfaced material, joins each of said wheels 12 with its corresponding auxiliary wheel 16.

A follower weight, in the form of a cylindrical rod 19 operates in vertical guide channels 20, which are mounted on the side walls near the rear wall within the dispensing portion of the cabinet. The right hand end of the shaft 13 extends through the side wall 6 to the outside of the cabinet and is provided with a turning handle 18.

The handle 18 is provided with diametrically spaced projections 21, adapted to co-operate with

the diametrically spaced cam surfaced depressions 22 provided on the outer side of wall 6 in the circular path of said projections.

A keyhole slot 35 is provided in the upper portion of the rear wall 3, and cushion pads 36 are provided on the base of the cabinet, thus adapting the cabinet for either wall support or table support.

The waste receiving portion of the cabinet includes the space below the platform 15 and the forwardly protruding portion 29 of the cabinet. It is bounded by rear wall 28, side walls 26, 27, bottom 25, front panel 30, platform 15 and the arched top of the forwardly protruding portion 29. The walls 28, 26 and 27 are continuations of walls 3, 4 and 6, respectively, of the dispensing portion of the cabinet. The side walls 26 and 27 are extended forwardly in order to form sides for the forwardly protruding portion of the cabinet. The forwardly extended portions of the side walls 26, 27 may be formed so as to make the forwardly protruding portion of the cabinet of reduced width. This, however, is only for purposes of appearance, and is not essential for the operation of the device.

The arched top of the forwardly protruding portion 29 has a central opening 32 therein. An arched cover plate 33, mounted to swing on a horizontal axis extending transversely and centrally of said opening, keeps said waste receiving portion of the cabinet closed by the influence of gravity and balance, and permits the insertion of waste at either side of said horizontal axis. The front panel 30 is removably hinged to the bottom 25, as at 34. A receptacle 31 is secured to the lower end of the front panel, the weight leverage of said receptacle being such as to keep the front panel normally in closed position without the use of locks or catches.

The use and operation of the device is as follows: The dispensing portion of the cabinet is loaded by removing the front wall 8, raising the follower weight 19, and placing a stack of individually folded paper towels or napkins on the bottom 2 of the dispensing portion of the cabinet with their folded edges to the front. The replaced follower weight and the weight of the stack of towels or napkins will press said paper towels or napkins against the friction pads 11 and endless friction belts 10. The portion of the friction belt 10 protruding through the opening 9 of the bottom 2 presents a considerably larger friction area than that of the friction pad 11.

Since the towel or napkin-contacting area upon the friction belt 10 is greater than that of friction pad 11; and since the frictional force between the friction belt 10 and the towel or napkin is greater than that between two contiguous towels or napkins, therefore, when the handle 18 is turned one half of a complete revolution, the lowermost paper towel or napkin will be propelled by the friction grip of the endless belts 10 through the slot 23. The projections 21 on the handle, engaging the depressions 22 at each half revolution of the handle will stop the rotation of the wheels 12 and the motion of the friction belts 10. Since the length of a half circumference of each wheel 12 is approximately the same as the width of the paper towel or napkin to be dispensed, if the handle 18 is originally positioned with projections 21 engaged with depressions 22, there will be only one paper towel or napkin dispensed between two successive engagements of the projections 21 with depressions 22, i. e. for each half turn of the handle. Thus, there will be no part of a paper towel or napkin left protruding through the slot 23. The cam surfaces in the depressions 22 guide and raise the projections 21 out of the depressions upon turning the handle.

By virtue of the fact that the bottom 2 of the dispensing portion slopes downwardly and rearwardly, the tendency of the stacked paper towels or napkins will be to slide or shear toward the rear wall. This will also aid to minimize the tendency of a plurality of paper towels or napkins being dispensed simultaneously. The friction pads 11 co-operating with the follower weight 19 which engages the paper towels or napkins near their rear edges, will frictionally retain the stack, and as soon as the lowermost paper towel or napkin has been dislodged and propelled far enough by the friction belts 10 to clear the friction pads 11, the remaining stack will be held back by said friction pads co-acting with said follower weight.

Applicants wish it to be understood that the invention is not limited to the details disclosed, but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

Having now described the invention and the manner of its use and operation, what we claim is:

1. A dispenser for individually folded and stacked paper towels or napkins, comprising a front wall, a rear wall, two side walls, a top and a bottom, the bottom having a plurality of openings, a shaft having a plurality of wheels fastened thereon, said shaft being rotatably mounted underneath said bottom with said wheels slightly protruding through said openings, an auxiliary wheel in alignment with each of said shaft fastened wheels, an endless belt joining each of said shaft fastened and auxiliary wheels and having a friction surface exposed through one of said openings, a slot at the bottom of the front wall of said dispenser, said shaft protruding through one of said side walls and having turning means thereon, said bottom having a plurality of stationary friction pads adjacent said rear wall, each of said friction pads having a smaller area than that of the exposed surface of said endless belt, said bottom sloping downwardly toward said rear wall of said dispenser, and means pressing said paper towels or napkins against said friction pads and said exposed surface of said endless belt, whereby upon turning said shaft, said endless belt will frictionally propel through said slot only one of said paper towels or napkins at a time.

2. A dispenser for individually folded and stacked paper towels or napkins, comprising a front wall, a rear wall, two side walls, a top and a bottom, the bottom having a plurality of openings, a shaft having a plurality of wheels fastened thereon, said shaft being rotatably mounted underneath said bottom with said wheels slightly protruding through said openings, an auxiliary wheel in alignment with each of said shaft fastened wheels, an endless belt joining each of said shaft fastened and auxiliary wheels and having a friction surface exposed through one of said openings, a slot at the bottom of the front wall of said dispenser, said shaft protruding through one of said side walls and having turning means thereon, and means to press said paper towels and napkins against said endless belt, said shaft fastened wheels being of a size the semi-circumference of which is equal to the width of the folded paper towel or napkin to be dispensed, and

said turning means having projections co-acting with depressions in a circular path in said side walls spaced 180 degrees apart, thereby preventing the protrusion of part of a paper towel or napkin following the one dispensed.

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