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NAPKIN DISPENSER

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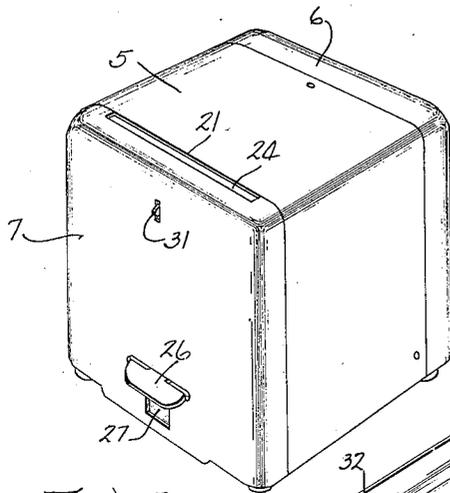


Fig. 1.

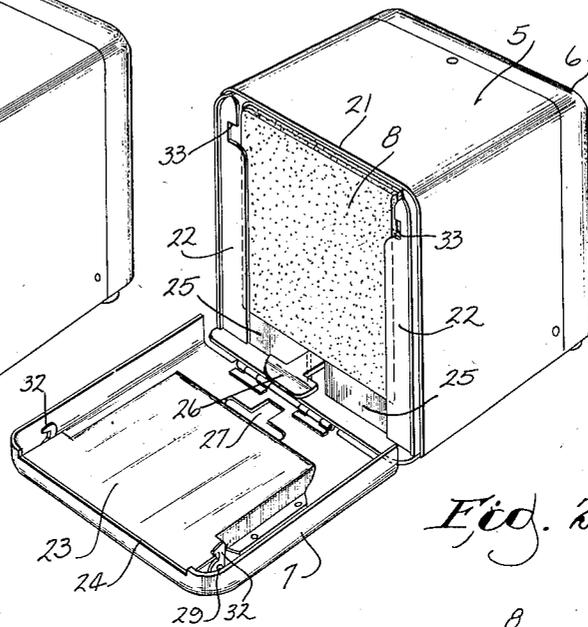


Fig. 2.

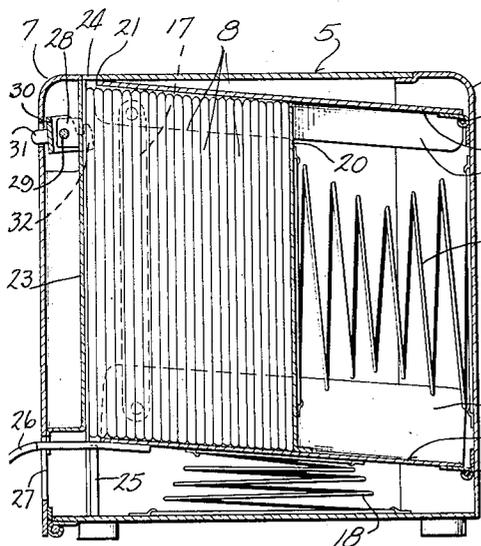


Fig. 3.

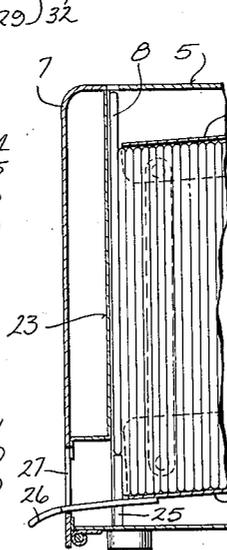


Fig. 4.

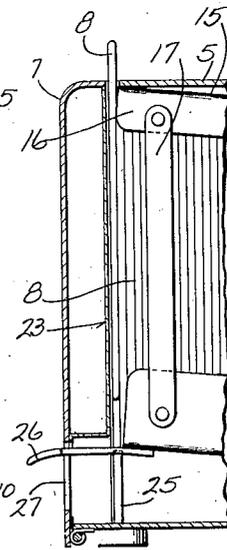


Fig. 5.

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NAPKIN DISPENSER

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10 Claims. (Cl. 312-62)

This invention relates to improvements in napkin dispensers.

It is the primary object of the invention to provide a novel, simple, and inexpensive and sanitary device for mechanically projecting a single paper napkin from a stack of such napkins which is otherwise fully housed and protected from contact with the fingers of the user.

In the past, napkin dispensers operating mechanically have usually involved relatively complex mechanisms including cams, rollers, and frequently gears and the like. It is an important object of the present invention to provide a structure which is so simple as to include practically nothing to get out of order and to accomplish the discharge of a single napkin accurately without danger of clogging and yet without requiring a single roller or cam for its operation.

It is a further object of the invention to provide a novel and improved dispenser which will satisfactorily dispense a square folded napkin. Most dispensers require for their operation that the napkin be folded into oblong form with projecting edges, folds or corners, to enable the napkin to be grasped by the operator. The present dispenser may be made practically as cheaply as a dispenser in which the napkins are delivered purely manually and yet it enables the use of the desirable quarter folded napkin without any corners or edges exposed to the grasp.

Other objects will be apparent to those skilled in the art upon study of the following disclosure of the invention.

In the drawing:

Fig. 1 is a view in perspective of our improved napkin dispenser as it appears when closed and in condition for use.

Fig. 2 is a view of the dispenser in perspective as it appears with the front cover lowered to expose its content of napkins.

Fig. 3 is an enlarged detail view in cross section through the dispenser from front to rear.

Fig. 4 is a view similar to Fig. 3 showing the first step in the process of dispensing a napkin.

Fig. 5 is a view similar to Figs. 3 and 4 showing the first napkin of the stack projected from the container in a position to be grasped by the operator.

Like parts are identified by the same reference characters throughout the several views.

The dispenser comprises a case 5 provided with a back 6 and a correspondingly shaped front wall at 7 which is hinged to constitute a door through which access may be had to the interior of the case for replenishing the supply of napkins 8 therein.

Hingedly connected at 9 to the back 6 of the case is a channel-shaped false bottom 10 having upstanding flanges at 11 spaced to receive and

support the quarter folded napkins 8 which stand on edge therein in the usual manner.

Hinged to the back at 14 is a channel-shaped false top 15 having depending flanges at 16 aligned with flanges 11 to receive the top edges of the napkins 8 comprising the stack within the dispenser. One or more links 17 connect the flanges 11 of the false bottom 10 with the flanges 16 of the false top 15 whereby the false bottom and the false top move in unison upon their respective hinges 9 and 14. A compression spring at 18 between the bottom of the case and the false bottom 10 supports the false bottom and its charge of napkins 8 in the raised position in which the parts are illustrated in Fig. 3 and Fig. 4.

Another compression spring at 19 exerts a forward thrust on the conventional follower plate 20 which impels the napkins 8 toward the front of the cabinet.

Connected with the case 5 and spaced forwardly from the margin 21 of its top are the stop plates 22 at either side of the case having bearing surfaces against which the side margins of the napkins 8 are pressed by the follower plate 20 under pressure of spring 19. The space intervening between the stop plates 22 is normally spanned by a plate 23 carried by the front wall or door 7 of the cabinet which may lie against or between the stop plates 22 when the door is closed, thereby presenting a substantially continuous or only slightly offset smooth surface across the front of the cabinet against which the first napkin 8 rests.

The front wall or door of the cabinet 7 has a notch at 24 in which the marginal flange of the door is so spaced from the margin 21 of the case as to provide a dispensing slot approximately equal in width to the thickness of a quarter folded napkin 8. Directly beneath this slot and in the lower portion of the cabinet is a bar or wall 25 which extends across the cabinet between the stop plates 22 and just within the vertical space occupied by such plates, said bar preferably being notched to accommodate a handle 26 which projects from the false bottom 10 through a slot 27 in the front wall or door 7. The slot 27 is preferably T-shaped so that the door clears the handle 26 when opened or closed and yet clearance is afforded for the vertical movement of the handle.

It will be noted in Fig. 3 that the false bottom 10 does not reach the plane of the bar or wall 25 or that in which the inner bearing surfaces of the stop plates 22 and 23 are located. Consequently, in the downward movement of the false bottom 10, it readily clears the bar 25.

While any desired means may be employed for

latching the front or door of the cabinet in its normally closed position, I have found it convenient to provide ears 28 on the plate 23 within the front or door of the cabinet, and a rod 29 extending through such ears supports a pivoted yoke 30 which is provided at 31 with a manually operable lever and is provided at 32 with hooks engageable with the edges 33 of the stop plates 22 which are provided by notching the stop plates.

The operation of the mechanism is as follows:

With a stack of quarter folded napkins 8 mounted between the false bottom 10 and the false top 15 and under pressure of a follower plate 20, the foremost napkin of the stack will be pressed by the stack against the stop plates 22 of the case and the intervening stop plate 23 of the door 7. The stop plates 22 and 23 are smoothly finished interiorly so as to minimize frictional resistance of the stop plates to the sliding of the folded napkins thereon. Consequently substantially the only vertical support to prevent the foremost napkin of the stack from sliding down is provided by the frictional contact of the foremost napkin with the second napkin of the stack, the second napkin being supported on the false bottom 10.

When the operator presses downwardly on the handle 26, the false bottom and the false top, connected by the link 17, move downwardly in unison, carrying the stack of napkins bodily in a downward direction. Since the coefficient of friction of the stop plates 22 and 23 is very low, the first napkin would readily move downwardly so far as the stop plates are concerned, but the upper margin of the stationary bar 25 is engaged by the first napkin, causing such napkin to remain approximately stationary while the rest of the stack moves downwardly between the spring supported false bottom and the false top linked thereto.

The stop plates 22 and the inset door plate 23 cooperate to form a thrust bearing member or wall against which the folded napkins are pressed by the spring actuated follower plate 20 to feed them forwardly and hold them in a substantially upright position, with the leading napkin in registry with the slot or notch 24, between the slot and the displacement bar or wall 25. The false bottom 10 and the false top 15, with their pivotal connections and linkage, constitute a reciprocatory carrier for napkins or similar articles and hold such articles in such a position that the follower plate presses the leading article against the thrust bearing member or wall, with its flat front surface in contact with the wall, the article being thus held in registry with the delivery slot.

When the operator releases the lever 26 or permits it to move upwardly under pressure of the spring 18, the false bottom and the false top, connected by link 17, carry the entire stack upwardly including the first napkin which is now somewhat above the level of the remainder of the stack and remains in its relatively elevated position because of the fact that its frictional engagement with the second napkin of the series is much more tenacious than the frictional resistance offered by the relatively smooth stop plates 22 and 23.

As a result, the upward movement of the stack carries with it the somewhat elevated first napkin 8, thereby projecting the first

napkin through the dispensing slot as shown in Fig. 5.

It will be apparent that many changes can be made in the specific design of the parts without deviating from the essence of the invention as herein disclosed.

It is immaterial in a broad sense whether the support for the stack of napkins moves bodily or hingedly in the manner disclosed. It is likewise immaterial in a broad sense whether the dispensing slot is above or below, since the device will function in either direction. Many changes in the specific design of the cabinet and its parts will suggest themselves to those skilled in the art.

We claim:

1. The combination with a slotted cabinet member having a bearing surface adjacent one side of the slot, and an article supporting member within said cabinet member spaced from said surface and receiving an article to be dispensed through said slot, means connecting one of said members to the other for relative movement forth and back from a predetermined relative position toward which the member so connected is biased, a follower plate biased and guided for movement across said supporting member toward said surface, whereby to urge toward said surface a stack of articles to be dispensed, the foremost article being dependent for its position respecting said surface upon frictional engagement with the second article on said supporting member, and a displacement element opposite the slot and with respect to which said supporting member is relatively movable, said displacement element having a connection to said cabinet member and being engageable by the foremost article of said stack, whereby such article is displaced from the contiguous article on said supporting member during relative movement of said members in one direction and projected through said slot in the other direction of relative movement between said members.

2. The combination with a slotted cabinet and a bearing surface adjacent one side of the slot, of a support for a stack of folded napkins disposed on edge on said support, said support being spaced from said surface, means mounting said cabinet and support for relative movement forth and back from a predetermined relative position, a spring pressed follower plate urging the napkins on said support toward said surface, the foremost napkin being dependent for its position upon its frictional engagement with the second napkin on said support, and a displacement member opposite the slot and connected for relative movement respecting said support, said displacement member being engageable by the foremost napkin in one direction of relative movement between the support and the cabinet, whereby to displace said foremost napkin toward said slot, said napkin being delivered through said slot by frictional engagement of the second napkin on said support in the other direction of relative movement between said support and cabinet.

3. A dispenser of the character described, comprising the combination with a cabinet provided with a vertically opening slot and an interior vertical wall surface adjacent said slot, of a support within the cabinet spaced from said wall surface, means mounting said support and cabinet for relative vertical movement, said support being adapted to receive on edge a stack of articles to be dispensed through said slot, a follower plate biased toward said wall surface for im-

5 pelling successive articles thereto, the foremost article being free of said support and dependent for its position on frictional contact of the second article therewith, said support and cabinet being subject to relative bias toward a position in which said support is contiguous to the slot of said cabinet, and a displacement element in the path of movement of the first article aforesaid in the course of relative movement of said support respecting said cabinet from said position, whereby to displace said first article relative to the other articles on said support in the course of relative movement of said support in one direction from said position, said first article being propelled by frictional engagement of the next article on said support therewith in the direction of said slot and dispensed therethrough in the course of the relative return movement of said support respecting said cabinet.

10 4. A napkin dispenser comprising the combination with a cabinet having a slotted wall and a bearing surface leading to the slot, of napkin guide means mounted for relative movement within the cabinet in spaced relation to the bearing surface toward and away from said slotted wall and biased for movement in one direction, and a displacement element distant from said slot in a plane which includes the leading napkin and the slot and is adjacent the path of movement of said guide means, said guide means being provided with a follower plate biased toward said surface whereby to propel a stack of articles on said guide means toward said surface, the foremost article being supported frictionally from the second article of said stack and displaceable for movement through said slot upon the relative movement of said guide means and said cabinet.

15 5. A dispenser for folded paper articles comprising the combination with a cabinet having a slotted top wall and means providing a bearing surface leading to said wall, of a channel-shaped false bottom and a channel-shaped false top respectively pivoted to said cabinet at the rear thereof, link means connecting said false bottom and false top and providing a guideway therebetween for folded paper articles arranged in a stack transversely of said guideway, a follower plate movable along said guideway and provided with a spring biasing it for movement toward said surface, said false bottom and false top being spaced from said surface for a distance at least equal to the thickness of a single article, a spring supporting said false bottom and false top, whereby yieldably to maintain them normally in proximity to the top wall of said cabinet, a handle projecting from said cabinet for the depression of said false bottom, and a stop element in the path of the foremost article of said stack between said false bottom and said surface whereby to displace said article vertically in the course of the downward movement of said false bottom.

20 6. A dispensing cabinet having a wall provided with a delivery slot, in combination with a wall provided with an interior bearing wall leading to said slot, means securing said bearing wall against movement toward the slot, means for reciprocating a stack of flat articles such as folded napkins away from and toward said slot, with the leading article having one flat face in sliding pressure contact with said bearing wall, and a displacement element in the path of said leading article when receding from the slot, the friction

of said article on the bearing wall being less than that of the articles upon each other, whereby a leading article partially separated from the stack by said displacement element during movement of the stack away from the slotted wall may be projected through the slot while the stack is approaching such wall.

7. A dispensing cabinet as set forth in claim 6, in which the cabinet is provided with a door from the front wall of which said bearing wall is inwardly offset and said bearing wall is composed of fixed marginal elements and an intermediate movable element supported from the door.

15 8. A dispensing cabinet for articles such as napkins, comprising the combination with a cabinet wall having an exit slot, of an interior bearing plate in a plane which is adjacent one margin of the slot, a reciprocable article holder provided with a spring actuated follower plate adapted to urge articles in the holder in the direction of said bearing plate, said holder being spaced from the bearing plate a distance substantially equal to the thickness of the leading article and to the width of the slot, said holder being adapted to engage the top and bottom margins of the following articles to require their movement with the holder during its reciprocation, means for reciprocating the holder alternately away from and toward the slotted wall, and a fixed displacement element in the plane of the leading article and slot and spaced from the slotted wall a distance equal to the length of the article in said plane, whereby the leading article may be fixedly held against the bearing plate by the pressure of the following articles during movement of the holder away from the slotted wall and ejected through the slot by friction during movement of the holder in the direction of said slotted wall.

20 9. A dispensing cabinet for napkins and the like having a wall provided with an outfeeding slot, in combination with an interior bearing plate in a plane adjacent one side margin of the slot, a reciprocable holder for articles deliverable through said slot, means associated with the holder for pressing the articles against said bearing plate with the leading article in a plane which includes the slot, means for preventing reciprocation of the leading article, and means for reciprocating the holder and the following articles away from and toward the slotted wall to eject the leading article by the friction of the following articles thereon when the holder is approaching said slotted wall.

25 10. A dispensing cabinet having a wall provided with an outfeeding slot and an interior bearing plate having a bearing surface in a plane which is adjacent one side of the slot, movable means on the other side of the slot for supporting and reciprocating a package of articles to be dispensed in alternate movements away from and toward the slotted wall with the leading article in the package in pressure contact with the bearing plate, and means for barring reciprocation of said leading article in a direction away from the slotted wall, whereby it may be partially displaced from the package during retraction of the movable means and projected through the slot by the following article on the return stroke independently of contact with any movable part of the cabinet.

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