

Sept. 28, 1965

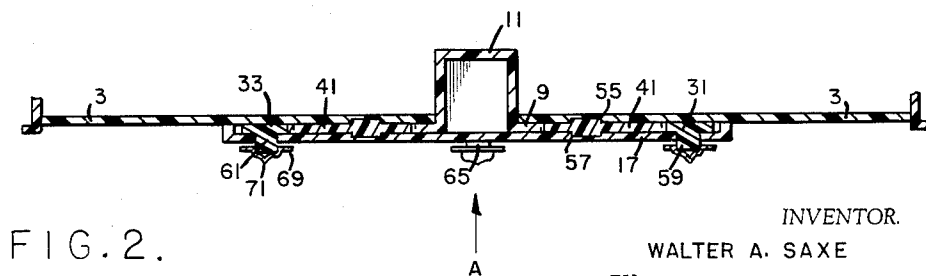
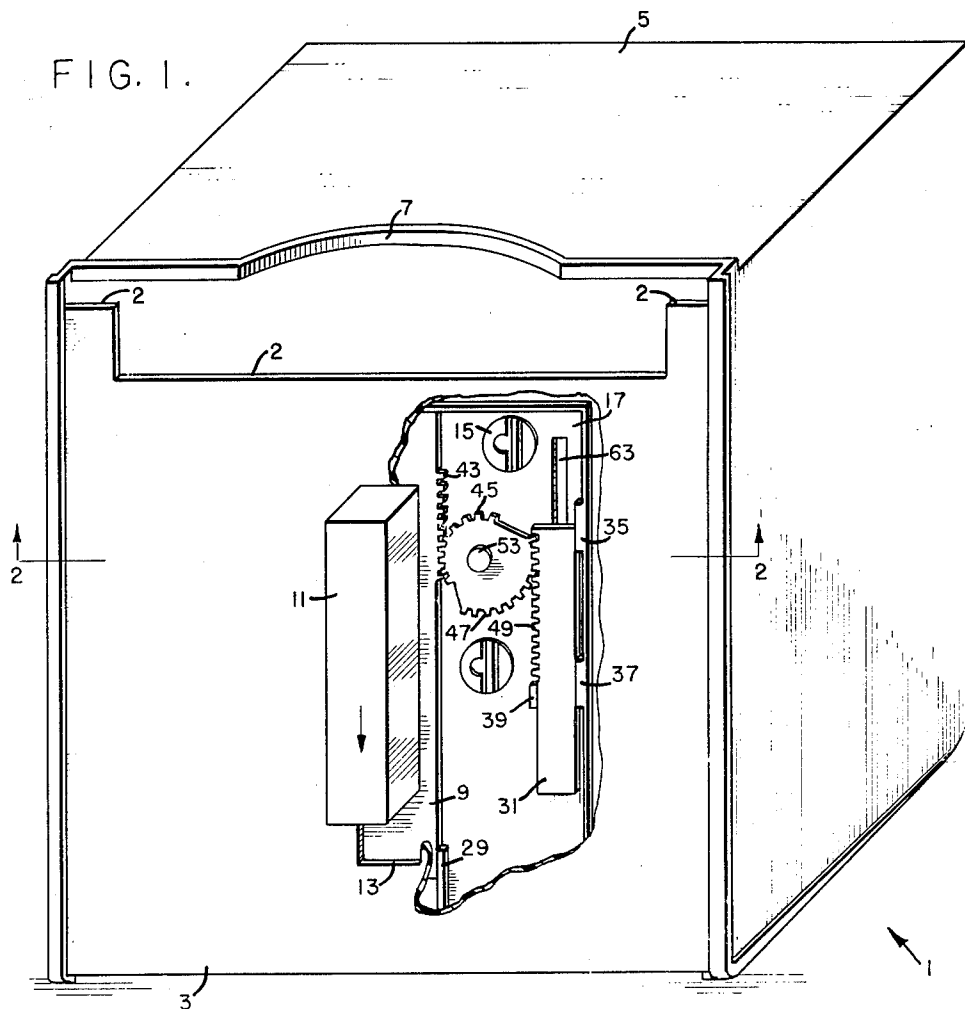
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3,208,634

RECIPROCATING MEMBER NAPKIN DISPENSER

Filed April 11, 1963

2 Sheets-Sheet 1



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FIG. 3.

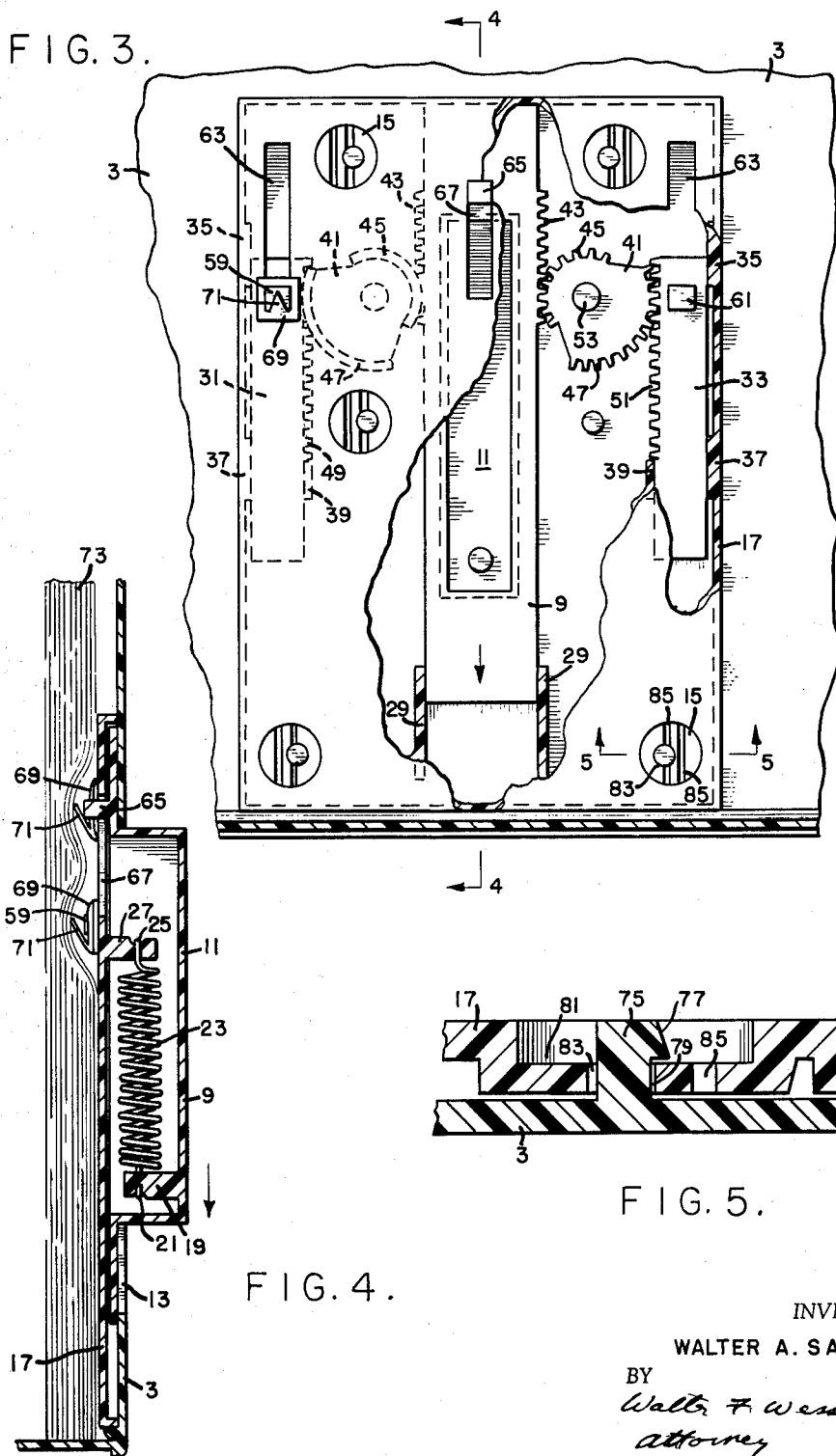


FIG. 5.

FIG. 4.

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RECIPROCATING MEMBER NAPKIN DISPENSER

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This invention relates to a reciprocating napkin dispenser for dispensing paper napkins one at a time from a napkin holder in which are emplaced paper napkins.

The problems in the prior art with which this invention is concerned for purposes of solving same is the need for an assembly of a reciprocating member in cooperative and operative combination with the front cover plate of the napkin holder to dispense napkins one at a time from the supply of napkins contained in the napkin holder; the need for the assembly of a reciprocating member in cooperative and operative combination with the front cover plate of the napkin holder such that the reciprocating member thereof may be manipulated to dispense a napkin without the need for holding the napkin holder upon dispensing same; the need for a napkin dispenser that will dispense one napkin at a time and which at the time of dispensing will hold firm on the table or structure upon which the dispenser is located; and the need for a napkin dispenser to dispense napkins one at a time which is durable of construction, cheap to manufacture and easy to assemble.

Therefore, it is an object of this invention to provide an assembly of a reciprocating member in cooperative and operative combination with the front cover plate of the napkin holder to dispense therefrom napkins one at a time.

Another object of the invention is to provide an assembly of a reciprocating member in cooperative and operative combination with the front cover plate of the napkin holder such that the reciprocating member thereof may be manipulated to dispense a napkin without the need for holding the napkin holder upon dispensing same.

A further object of this invention is to provide a napkin dispenser that will dispense one napkin at a time and which at the time of dispensing will hold firm on the table or structure upon which the dispenser is located.

A still further object of this invention is to provide a napkin dispenser to dispense napkins one at a time which is durable of construction, cheap to manufacture and easy to assemble.

These and other objects of the invention should be appreciated from the detailed specification taken in conjunction with the drawings, in which like reference numerals refer to similar parts throughout the several views, in which:

FIG. 1 is a perspective view of a napkin holder with an exposed view of a portion of the reciprocating member assembly;

FIG. 2 is a sectional view taken along the line 2-2 of FIG. 1;

FIG. 3 is a partially exposed view of the reciprocating member assembly as viewed from the rear of the front cover plate;

FIG. 4 is a sectional view taken along the line 4-4 of FIG. 3;

FIG. 5 is a sectional view taken along the line 5-5 of FIG. 3.

Reference numeral 1 generally refers to the invention shown in FIG. 1. The napkin holder shown is the same napkin holder for which Eliot Saxe was granted Patent Number 3,066,825 on December 4, 1962, for Napkin Holder.

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The only modifications and structural differences in this invention over the granted patent lie in the front cover plate 3 and top member 5.

The arcuate notched portion 7 of this invention is similarly formed in the forward periphery of the top member 5 in symmetrical arrangement and disposition therewith. The forward periphery of the top member 5 is set back from the front cover plate 3 of this invention. The purpose for these structural differences is to permit the housewife to remove up to six napkins from the napkin holder independently of any function and operation of the reciprocating member assembly.

The front cover plate 3 along with the snap cover 17 of this invention functions also to house the reciprocating member assembly. The front cover plate 3 of this invention also differs structurally from the front cover plate of the granted patent in the absence of the notched-out portion. In this invention the removed portion 2 exists only in the upper part of the front cover plate 3, as shown.

Other than these noted structural differences the napkin holder of the instant invention comprises the same structural elements of the napkin holder of the granted patent and functions in the same manner.

A reciprocating member 9 has integrally formed therewith a raised rectangularly configured handle 11 which is received in an elongated slot 13 formed in the front cover plate 3. Slot 13 is slightly greater in width than the dimensional width of handle 11. Slot 13, as shown, has a greater length than the dimensional length of handle 11 to permit movement of handle 11 in slot 13.

Snap lock assemblies 15, as shown and will hereinafter be described, are utilized to secure snap cover 17 against the interior side of the front cover plate 3 and in abutting relationship therewith.

Extending transverse to handle 11 formed integral therewith is a spring post 19 having a portion 21 removed therefrom, as shown, to receive the tail of the tension spring 23. The other tail of spring 23 is received in the removed portion 25 of spring post 27 extending transverse to snap cover 17 and formed integral therewith. After release of handle 11 upon downward movement of same, handle 11, by the restoring force of spring 23, will return to its inoperative position as shown in FIG. 4.

Adjacent the lower end of reciprocating member 9, two longitudinal guides 29 raised upon front cover plate 3 guide thereat member 9 in its reciprocation.

Two racks 31 and 33 are emplaced, as shown, on front cover plate 3. Guides 35, 37 and 39 raised from the front cover plate 3, as shown, guide thereby racks 31 and 33 in their reciprocation. Interposed between and in operative relationship with reciprocating member 9 and racks 31, 33 are the sector gears 41. Teeth 43 formed on each side of reciprocating member 9 are engaged by teeth 45 of the sector gears 41. Teeth 47 of the sector gears 41 engage the teeth 49 and 51 formed, respectively, on racks 31 and 33. The teeth 45 are of three-quarter inch pitch diameter and the teeth 47 are of one and one-eighth inch pitch diameter. The sector gears 41 have integrally formed therewith stub shafts 53 that are journaled in complementary recesses 55 and 57 formed, respectively, in the front cover plate 3 and snap cover 17.

Formed on the ends of the racks 31 and 33, respectively, are square shaped carriers 59 and 61 extending through elongated slots 63, of complementary width, formed in the snap cover 17, as shown, and these slots 63 guide the carriers 59 and 61 in their reciprocations.

A square shaped carrier 65 formed on the upper portion of reciprocating member 9 extends through an elongated slot 67, of complementary width, formed in the

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snap cover 17, as shown, and this slot 67 guides the carrier 65 in its reciprocation.

Received and emplaced on each of the carriers 59, 61 and 65 are fasteners 69. The fasteners 69 have square cut out portions formed there-through which dimensionally are slightly less than the dimensions of the carriers such that the fasteners upon emplacing same will deform and imbed themselves in the peripheries of the carriers. Formed in the fasteners 69 and extending upwardly therefrom at the angle, as shown, are prongs 71. The prongs 71 are utilized to engage a napkin 73 and dispense same upwardly from the napkin holder upon upward movement of the carriers.

The term reciprocating member assembly as utilized herein comprises the reciprocating member 9, the racks 31 and 33, the sector gears 41 and the elements associated therewith.

The snap lock assembly 15, which has utility separate and apart from this invention, is shown more discernably in FIG. 5.

The hook 75 upstanding from the front cover plate 3 is beveled at 77, as shown, and has an undercut portion to form a throat 79. The snap cover 17 has a well 81 formed therein with a hole 83 formed therethrough complementary to the cross section of hook 75 at the throat 79. Two transverse slots 85 are formed in the well 81, as shown. One of the slots 85 intersects the hole 83.

After alignment of hole 83 with hook 75 and upon depressing cover 17 upon hook 75 with sufficient force, the material between slots 85 will be deformed to the extent that hole 83 will move over the beveled portion 77 of hook 75. Upon cover 17 being moved downwardly to the extent shown in FIG. 5, the deformed material will be relieved and restored with the resulting locking of the walls of hole 83 at the throat 79.

All of the foregoing structure may be made of suitable plastic material with the exception of the spring 23. The fastener 69 may be either of metal or plastic.

In the operation of the dispenser, reference is made to FIG. 4 showing a stack of napkins 73 adjacent the snap cover 17. The housewife manipulates handle 11 downwardly which effects upward movement of racks 31 and 33 resulting from drive being transmitted to racks 31 and 33 by sector gears 41. In downward travel of reciprocating member 9 its fastener 69 and prong 71 will slide over the napkin 73. In upward travel of racks 31 and 33 the prongs 71 of their fasteners will engage the napkin 73 and carry same upwardly and a portion thereof outside of the removed portion 2 in the upper part of the front cover plate 3.

Upon release of handle 11, tension spring 23 will restore handle 11 to its original inoperative position. Reciprocating member 9 will move upwardly with the prong 71 of its fastener 69 engaging the napkin 73 further upwardly. Of course, racks 31 and 33 will move downwardly and the prongs 71 of their fasteners 69 will slide over the napkin 73 in downward travel.

The pitch diameter of the sector gears 41 effect an upward movement of the napkin 73 of almost two inches when the handle 11 is initially moved downwardly to its fullest extent. The napkin 73 then may be removed easily from the napkin holder without tearing the napkin 73 inasmuch as the napkin 73 will slide by the prongs 71 in upward travel and without any possibility of the prongs 71 engaging the napkin 73 in such upward travel.

The dispenser in the operation of dispensing a napkin will hold firm on the table and requires only the use of one finger to effect the dispensing of napkins. This arises out of the fact that the handle 11 is moved downwardly with the force component, in the operation of such dispensing, being directed downwardly and normal to the table or surface upon which the dispenser is located.

As utilized in the claims, the term first reciprocating member refers to reciprocating member 9, the term

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other reciprocating member refers to either rack 31 or rack 33, and the term drive means refers to the sector gear 41.

Having thusly described my invention, I claim:

1. In combination with a napkin holder functioning to hold a supply of napkins and urge the supply of napkins in one direction for dispensing of same, a reciprocating member, said reciprocating member having a handle, a front cover plate, said front cover plate having formed thereon longitudinal guides and having a slot formed therein for guiding, respectively, said reciprocating member and its handle, racks arranged and disposed relative to said reciprocating member, said cover plate having further formed thereon guides for guiding said racks in their reciprocation, sector gears disposed between said reciprocating member and said racks, said sector gears having teeth in operative engagement with teeth formed on said reciprocating member and said racks to transmit drive to said racks upon movement of said reciprocating member, fasteners carried by said racks, said fasteners having prongs to engage a napkin for carrying and dispensing same from said napkin holder in one direction of travel of said racks.

2. The subject matter as claimed in claim 1, wherein a snap cover is provided, said snap cover being secured to said front cover plate, a tension spring for return of said reciprocating member to its inoperative position upon release of its handle from movement in one direction, spring posts formed on said cover and on said reciprocating member, said spring posts carrying said tension spring.

3. The subject matter as claimed in claim 2, wherein another fastener having a prong is provided, said another fastener being carried by said reciprocating member for engagement with the napkin for carrying and dispensing same upon return of said reciprocating member to its inoperative position.

4. The subject matter as claimed in claim 3, wherein carriers are provided, said carriers being formed on said reciprocating member and said racks for carrying said fasteners, slots formed in said snap cover, said slots guiding thereby said carriers.

5. The subject matter as claimed in claim 4, wherein are provided stub shafts integral with said sector gears, complementary recesses formed in said front cover plate and said snap cover, said recesses journalling said stub shafts.

6. The subject matter as claimed in claim 1, wherein snap lock assemblies are provided, said snap lock assemblies securing said snap cover to said front cover plate, each snap lock assembly comprising a beveled hook integral with and upstanding from said front cover plate, said hook having an undercut portion forming thereby a throat, a well formed in said snap cover, said well having two transverse slots and a hole formed through said well, said hole being complementary to the cross section of said hook at the throat portion thereof, the material between said transverse slots being deformed upon pressing the walls of said hole downwardly upon said hook non-removably locking the walls of said hole at the throat portion of said hook effected upon relief from deformation of said material between said transverse slots.

7. A snap lock assembly for non-removably locking together two pieces of deformable material, said first piece having a beveled hook integral therewith and upstanding therefrom, said hook having an undercut portion forming thereby a throat, a well formed in said other piece, said well having a bottom portion, said bottom portion having two transverse slots and a hole formed there-through, said hole being complementary to the cross section of said hook at the throat thereof, the material between said transverse slots being deformed upon depressing the walls of said hole downwardly upon said hook thereby non-removably locking the walls of said hole at the throat of said hook upon relief from deformation

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of said material between said transverse slots, said hook and said other piece of deformable material each having top portions, said hook being within said well, and the top portion of said hook being coplaner with the top portion of said other piece.

8. In combination with a napkin holder functioning to hold a supply of napkins and to urge said supply of napkins in one direction for dispensing of same, a front cover plate, a snap cover, a reciprocating member, a tension spring, sector gears and racks; said snap cover being secured to said front cover plate of said napkin holder, said reciprocating member being carried by said front cover plate and said snap cover, said reciprocating member having a handle for manipulation thereof, said tension spring being carried by said reciprocating member and said snap cover, said sector gears being carried by said front cover plate and said snap cover, said racks being carried by said front cover plate and said snap cover, said sector gears being operatively engaged with said reciprocating member and said racks, said racks having prongs carried thereon for engagement with the front napkin of said supply of napkins and for dispensing same thereby from said napkin holder upon upward movement of said racks; all of said recited structure being so co-operatively and correlatively, associated, arranged and constructed such that upon downward movement of said reciprocating member, said racks are moved upwardly, and such that upon release of said handle from the downward movement imposed upon said reciprocating member, said tension spring returns said reciprocating member and racks to their inoperative position.

9. The subject matter as claimed in claim 8, wherein said reciprocating member has teeth formed thereon for engagement by said sector gears.

10. The subject matter as claimed in claim 9, wherein those portions of said sector gears operatively engaged with said racks have a pitch diameter greater than the pitch diameter of those portions of said sector gears operatively engaged with said teeth formed on said reciprocating member.

11. The subject matter as claimed in claim 8, wherein said reciprocating member has a prong carried thereon for engagement with said front napkin of said supply of napkins for further dispensing of same from said napkin holder upon upward return movement of said reciprocating member.

12. The subject matter as claimed in claim 8, wherein said snap cover is permanently secured to said front cover plate by snap lock assemblies, and wherein each one of said snap lock assemblies comprises a beveled hook integral with and upstanding from said front cover plate, said hook having an undercut portion forming thereby a throat, a well formed in said snap cover, said well having two transverse slots and a hole formed therethrough, said hole being complementary to the cross-section of said hook at the throat portion thereof, the material between said transverse slots being deformed upon pressing the walls of said hole downwardly upon said hook non-removably locking the walls of said hole at the throat portion of said hook effected upon relief from deformation of said material between said transverse slots.

13. The subject matter as claimed in claim 12, wherein one of said transverse slots intersects said hole formed through said well.

14. The subject matter as claimed in claim 12, wherein the dimensional height of said beveled hook along its longitudinal axis and measured from its top surface to the inception of its said undercut portion is similar to the depth of said well.

15. In combination with a napkin holder functioning to hold a supply of napkins and to urge said supply of napkins in one direction for dispensing of same, a front cover plate, a snap cover, a reciprocating member, a tension spring, two sector gears and two racks; said snap cover being secured to said front cover plate of said

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napkin holder, said reciprocating member having a handle and a carrier formed thereon, said front cover plate having guides formed thereon to guide said reciprocating member in its reciprocable movements, said front cover plate and said snap cover having slots formed therethrough for receivably mounting said handle and carrier, respectively, of said reciprocating member, said reciprocating member and said snap cover having spring posts formed thereon to carry said tension spring, said sector gears having stub shafts, said stub shafts being journaled in complementary recesses formed in said front cover plate and said snap cover, said racks having carriers formed thereon, said carriers formed on said racks being guided in slots formed in said snap cover, said front cover plate having guides formed thereon to guide said racks in their reciprocable movements, said reciprocating member having teeth formed thereon, said sector gears being operatively engaged with said racks and said teeth formed on said reciprocating member, those portions of said sector gears operatively engaged with said racks having a pitch diameter greater than the pitch diameter of those portions of said sector gears operatively engaged with said teeth formed on said reciprocating member, said carrier formed on said reciprocating member having a prong mounted thereon, said carriers formed on said racks having prongs mounted thereon; all of said recited structure being so cooperatively and correlatively, associated, arranged and constructed such that upon downward movement of said handle said racks are reciprocated upwardly and said prongs carried by said racks engage the front napkin of said supply of napkins and dispense same from said napkin holder, and such that upon release of said handle said tension spring returns said reciprocating member upwardly to its inoperative position and said prong mounted on said carrier of said reciprocating member engages said front napkin and further dispenses same from said napkin holder.

16. The subject matter as claimed in claim 15, wherein said snap cover is permanently secured to said front cover plate by snap lock assemblies, and wherein each one of said snap lock assemblies comprises a beveled hook integral with and upstanding from said front cover plate, said hook having an undercut portion forming thereby a throat, a well formed in said snap cover, said well having two transverse slots and a hole formed therethrough, said hole being complementary to the cross-section of said hook at the throat portion thereof, the material between said transverse slots being deformed upon pressing the walls of said hole downwardly upon said hook non-removably locking the walls of said hole at the throat portion of said hook effected upon relief from deformation of said material between said transverse slots.

17. The subject matter as claimed in claim 16, wherein one of said transverse slots intersects said hole formed through said well.

18. The subject matter as claimed in claim 16, wherein the dimensional height of said beveled hook along its longitudinal axis and measured from its top surface to the inception of its said undercut portion is similar to the depth of said well.

19. A snap lock assembly for permanently and non-removably locking together two pieces of deformable material, said first piece having a beveled hook integral therewith and upstanding therefrom, said hook having an undercut portion forming thereby a throat, a well formed in said other piece, said well having a bottom portion, said bottom portion having two transverse slots and a hole formed therethrough, said hole being complementary to the cross-section of said hook at its throat, the material between said transverse slots being deformed upon pressing the walls of said hole downwardly upon said hook thereby permanently and non-removably locking the walls of said hole at said throat of said hook upon relief from deformation of said material between said transverse slots, said hook and said other

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piece of deformable material each having top portions, said hook being within said well, and the top portion of said hook being coplanar with the top portion of said other piece.

20. The subject matter as claimed in claim 19, where-
in one of said transverse slots intersects said hole formed through said well.

21. The subject matter as claimed in claim 19, where-
in the dimensional height of said beveled hook along its longitudinal axis and measured from its top surface to the inception of its said undercut portion is similar to the depth of said well.

22. In combination with a napkin holder functioning to hold a supply of napkins and to urge the supply of napkins in one direction for dispensing of same through an opening in said holder, a first reciprocating member, a rack and a sector gear; said first reciprocating member having teeth, said sector gear engaging the teeth of said first reciprocating member and said rack, said rack carrying a prong, whereby upon reciprocating said first reciprocating member, drive is transmitted to said rack with its prong engaging a napkin to dispense same through the napkin holder opening.

23. The subject matter as claimed in claim 22, where-
in that portion of said sector gear operatively engaged with said rack has a pitch diameter greater than the pitch diameter of that portion of said sector gear operatively engaged with said teeth of said first reciprocating member.

24. In combination with a napkin holder functioning to hold a supply of napkins and to urge the supply of napkins in one direction for dispensing of same through

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an opening in said holder, a first reciprocating member, two racks and two sector gears; said first reciprocating member having teeth, each one of said sector gears engaging the teeth of said first reciprocating member and the teeth of one of said racks, said racks carrying prongs, whereby upon reciprocating said first reciprocating member, drive is transmitted to said racks with their prongs engaging a napkin to dispense same from the napkin holder opening.

25. The subject matter as claimed in claim 24, where-
in those portions of said sector gears operatively engaged with said racks have a pitch diameter greater than the pitch diameter of those portions of said sector gears operatively engaged with said teeth of said reciprocating member.

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