Jan. 4, 1966 T. G. HALEY 3,227,340

SHEET DISPENSING PACKAGE WITH RIGID FENDED TEAR EDGE

Filed Jan. 14, 1965 5 Sheets-Sheet 1

Fig.1

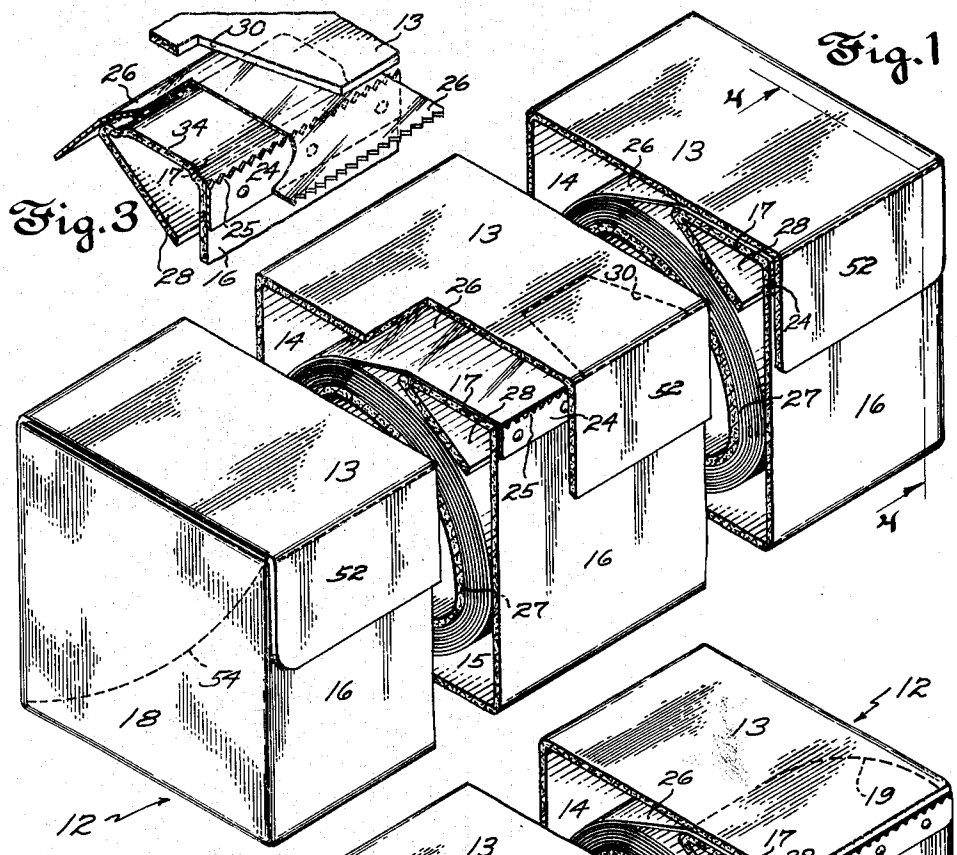


Fig.3

Fig.2

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Fig. 4

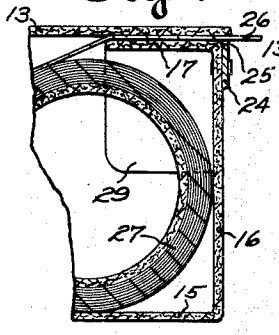


Fig. 5

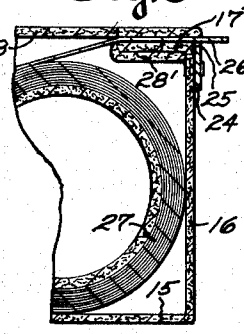


Fig. 6

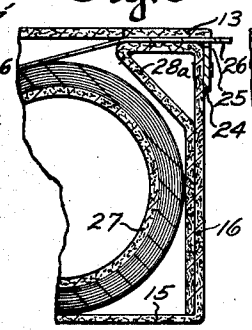


Fig. 7

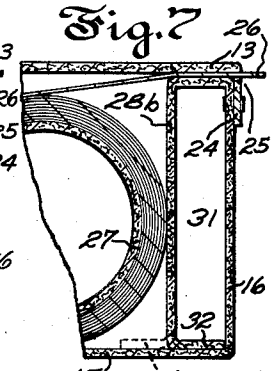


Fig. 8

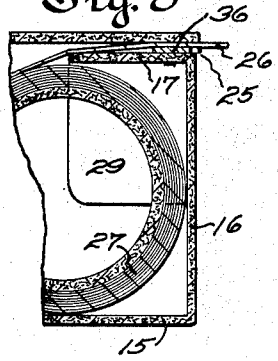
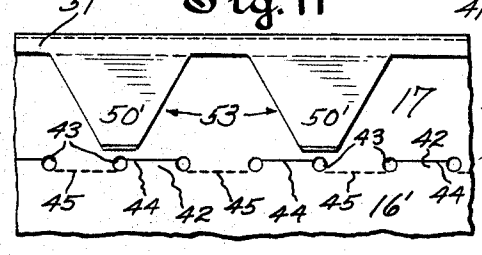


Fig. 11



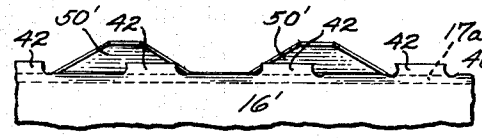


Fig. 12

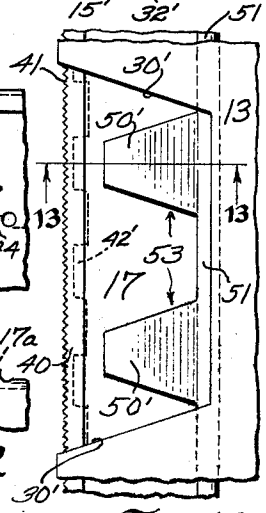


Fig. 9

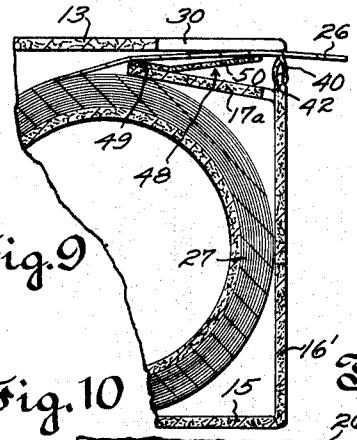


Fig. 14

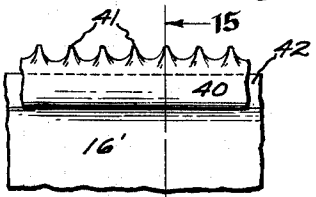


Fig. 10a



Fig. 15

Fig. 10

Fig. 16

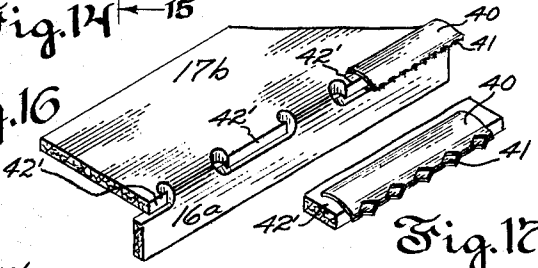


Fig. 17

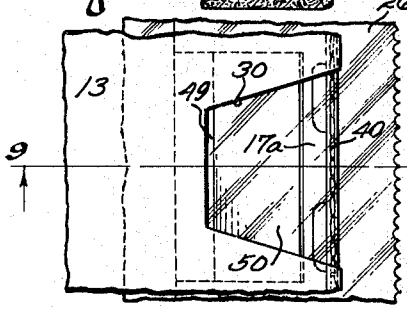
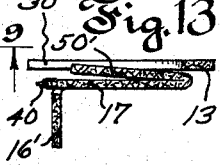


Fig. 13



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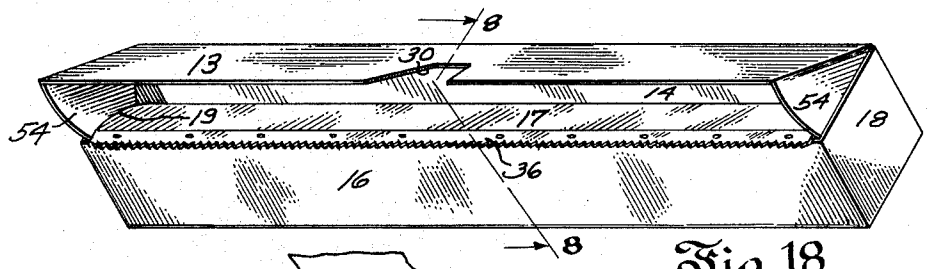


Fig. 18

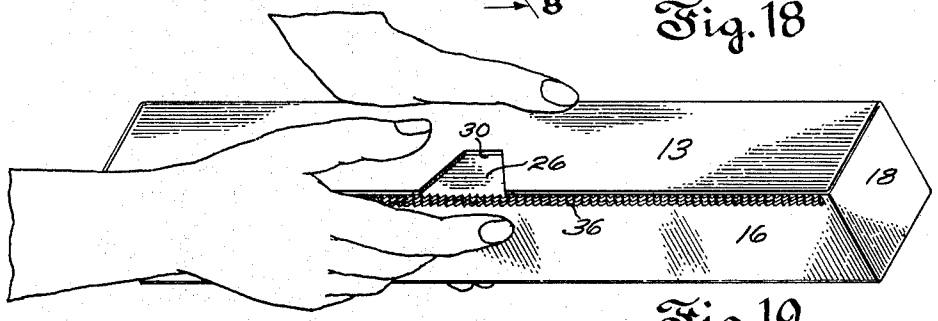


Fig. 19

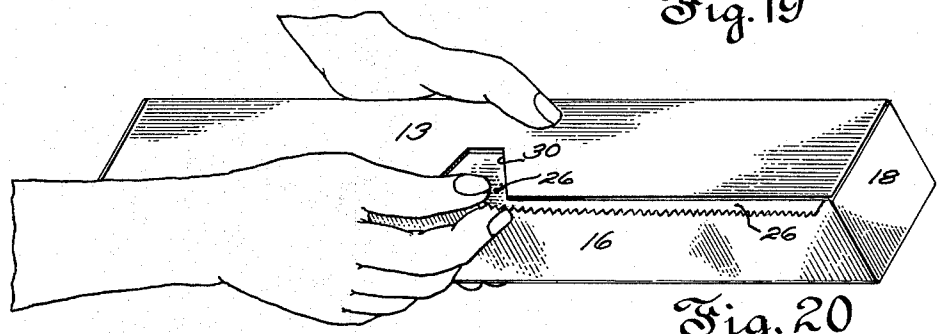


Fig. 20

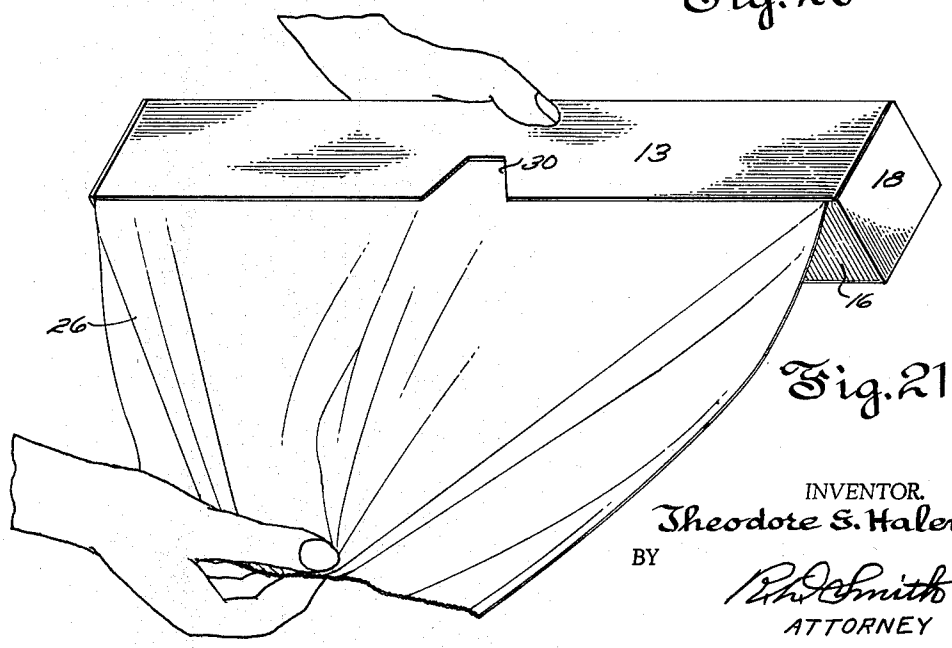


Fig. 21

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SHEET DISPENSING PACKAGE WITH RIGID FENDED TEAR EDGE

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Fig.22

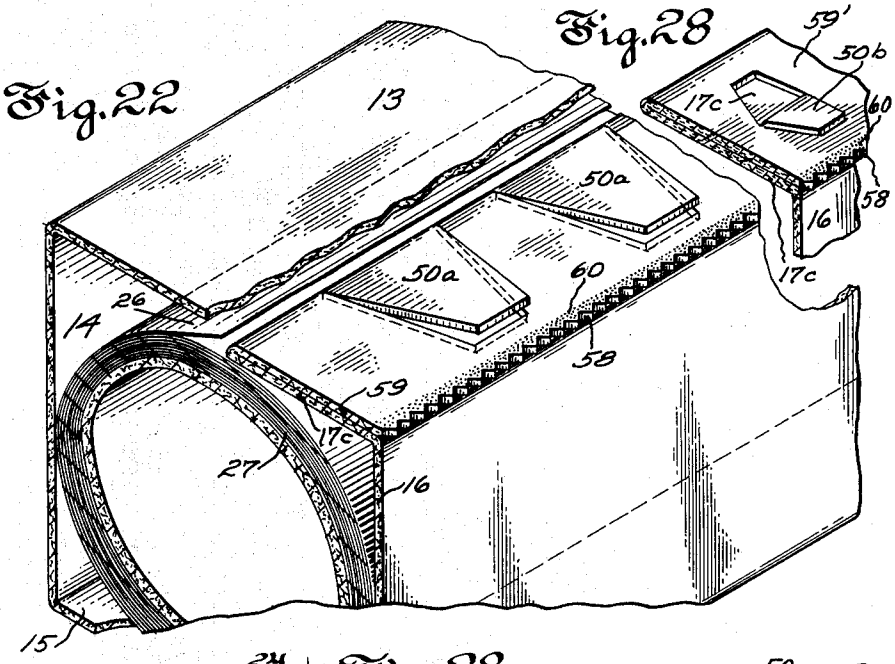
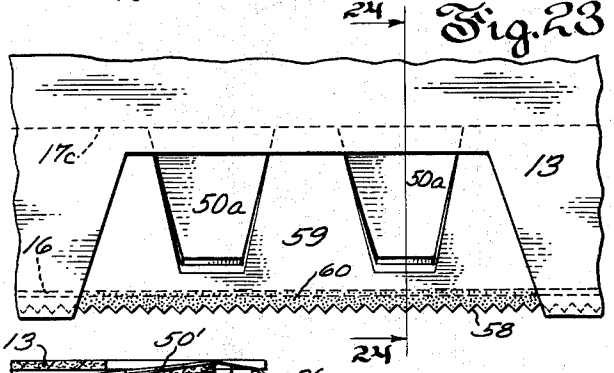


Fig.28

Fig.23



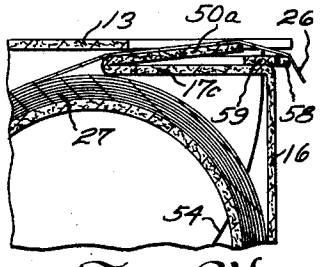


Fig.24

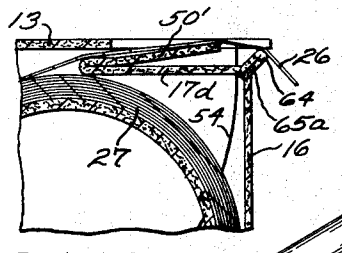


Fig.26

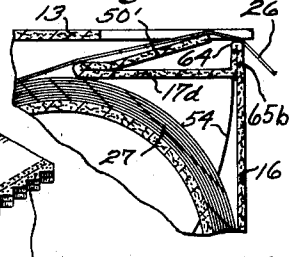


Fig.27

Fig.25

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Filed Jan. 14, 1965 5 Sheets-Sheet 5

Fig. 29

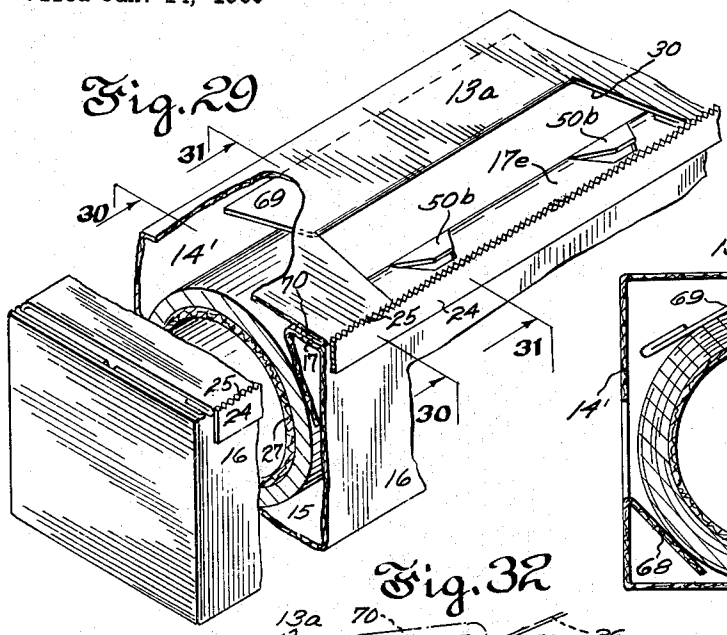


Fig. 30

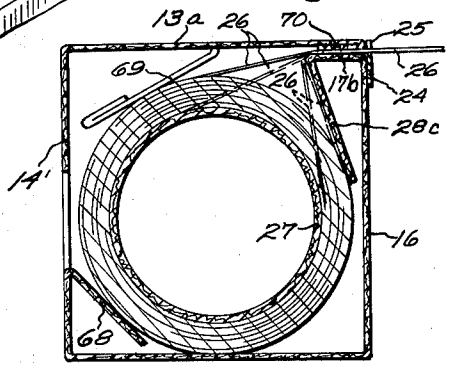


Fig. 32

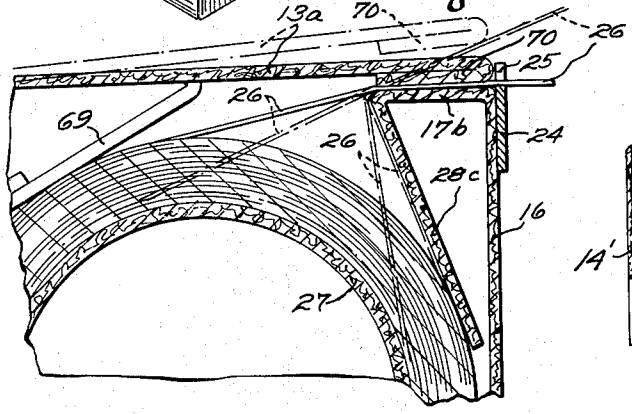


Fig. 31

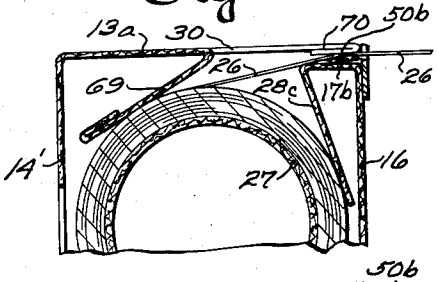


Fig. 34

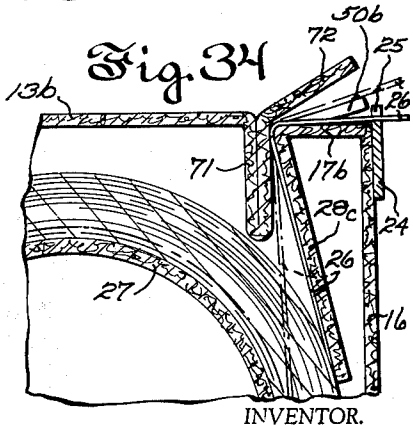
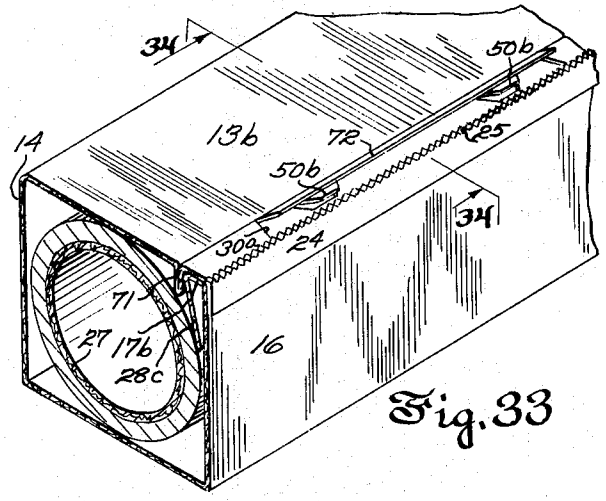


Fig. 33



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United States Patent Office 3,227,340 Patented Jan. 4, 1966

3,227,340

SHEET DISPENSING PACKAGE WITH RIGID FENDED TEAR EDGE

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Filed Jan. 14, 1965, Ser. No. 426,707
19 Claims. (Cl. 225—19)

This application is a continuation-in-part of my copending application, Serial No. 244,976, filed December 17, 1962.

This invention relates to improvements in container boxes for dispensing and tearing off sheet material from a box contained roll of the material while the box is held in the hand of the user. Such boxes are usually equipped with a sharp tear edge crosswise of which the sheet material is withdrawn from the box and against which the withdrawn sheet is then ripped to sever it.

Boxes for this purpose are usually small enough in girth to be encompassed by the hand of the user and are relatively long to accommodate the length of the contained roll of the sheet material. When made of cardboard, bent in fold-about manner, the girth of the box can be made of a single blank of the cardboard stock bent along parallel lines to form, aside from end walls of the box, a base panel, a rear panel, a swingable lid and a fixed front wall of the box, said front wall having a free edge that is substantially met by the swingable lid completely to encompass the box space. In such boxes the lid usually is extended to form a flap which, as the box is delivered to the user, is bent to extend downward outside of the front wall of the box. When put into use, however, the flap is shifted and tucked inside the box just at the back of the front wall.

In boxes of this nature it has been proposed to mount on some part of the front wall of the box a metallic strip having a sheet severing tear edge usually at or near the discharge outlet from the box through which the sheet material is withdrawn.

Problems confronting the users of such boxes have included the necessity for careful handling to avoid accidental cutting of the hands of the user on the sharp and usually saw-toothed tearoff edge which has heretofore been exposed. Also it has been a problem to exclude dust and foreign matter from entering the box because the front wall of the box heretofore has been sufficiently limber to gap forward and away from the lid and its tuck flap. In boxes where the tear edge has been located other than at the discharge outlet of the box a residual margin of the sheet material has objectionally been left dangling outside the box after the tearing off of that portion of the sheet intended to be used.

An object of the present improvements is to solve all of the aforementioned problems and others without increasing complexity of structure or cost of production, which is important to avoid because the box is usually thrown away after its contained roll is used up.

Another object is so to construct a dispensing box of the type mentioned that the same box will dispense, with superior ease and equal efficiency, various kinds of sheet materials now commonly sold in dispensing boxes for specialized uses, for example, polyethylene sheet, slippery surfaced aluminum foil, relatively thick, springy, so called "freezer" paper, wax paper, and especially the super-thin, clingy, so called "saran" wrap.

The widely different physical properties of these sheet materials as to thickness, tensile strength, resilience, flexibility, slipperiness, tendency to cling etc. has made it impossible heretofore for a single kind of box construction to dispense and sever the sheet with equal ease and success.

The present solution to these problems resides in improved principles of box construction, various embodiments of which are described as follows with reference to the accompanying drawings wherein:

FIG. 1 is a contracted perspective view of a dispensing and tear-off box incorporating the present improvements showing its condition as handled by the trade and delivered to the consumer, portions being broken away to expose details of the construction.

FIG. 2 shows the box of FIG. 1 conditioned for use by the consumer by tearing away certain portions of the lid of the box.

FIG. 3 is a fragmentary perspective view taken in section on the plane **3—3** in FIG. 2 looking in the direction of the arrows.

FIG. 4 is a view taken in section on the plane **4—4** in FIG. 1 looking in the direction of the arrows and shows one of several means for supporting the newly provided shelf wall of the box against finger pressure.

FIGS. 5, 6 and 7 show modified constructions for supporting the shelf wall of the box.

FIG. 8 is a fragmentary view like FIG. 4 showing a modified disposition of the tear strip at the junction of the front wall and the shelf wall of the box sectioned on the planes **8—8** in FIG. 18.

FIG. 9 is an enlarged view taken in section through a box of modified construction wherein a spring lip keeps the sheet to be dispensed lifted above a tear strip of modified construction.

FIG. 10 is a fragmentary plan view looking downward on FIG. 9.

FIG. 10*a* shows a modification of the tear strip and lifter fingers of FIG. 10.

FIG. 11 is a fragmentary plan view of the cardboard blank from which the box of FIG. 10*a* is made in its portion where scored for bending backward to form the shelf wall.

FIG. 12 is an elevation of the front wall of the box after the blank of FIG. 11 has been pierced and bent backward to form the shelf wall in a manner that produces upstanding fins on which the modified tear strip of FIG. 9 may be clinched.

FIG. 13 is a view taken in section on the plane **13—13** in FIG. 10*a* looking in the direction of the arrows.

FIG. 14 is a greatly enlarged front view of the tear strip shown in FIG. 9 mounted on the cardboard fins of FIG. 12.

FIG. 15 is a view taken on the plane **15—15** in FIG. 14.

FIG. 16 shows the tear strip and its supporting fins of FIGS. 12 and 13 projecting forward in the plane of the shelf wall instead of upward in the plane of the front wall of the box.

FIG. 17 is an enlarged view of a short portion of the tear strip and fins of FIGS. 10*a* and 16.

FIG. 18 is a perspective view of a whole box of which FIG. 8 is a fragmentary cross section, the box lid being raised to expose the shelf construction which newly firms the support of the tear strip.

FIGS. 19, 20 and 21 show three stages respectively in the handling of the box of FIG. 18 for withdrawing and tearing off a length of sheet from the contained roll.

FIG. 22 shows the doubled forward portion of the shelf wall of FIG. 4 extending sufficiently far forward to enable its front edge to overhang the front surface of the front wall of the box and thereat be notched to form tear teeth, the lifter fingers being cut out from such doubled forward portion of the shelf wall so as to spring upward.

FIGS. 23 and 24 are views similar to FIGS. 10*a* and 13, respectively, showing the tear teeth produced from the cardboard of the box as in FIG. 22.

FIG. 25 shows a modification of the construction in

FIG. 16 wherein the bend of the continuous run of cardboard that forms both the shelf wall and the front wall of the box is such that a forwardly projecting fin results from a narrow doubling over of the cardboard at such bend and such fin is notched to form the tear teeth.

FIG. 26 shows the notched fin of FIG. 25 directed upward at a slant as well as forward from the front wall of the box.

FIG. 27 shows the same notched fin directed straight upward in the plane of the front wall of the box and notched at its top to form the tear teeth.

FIG. 28 shows another way of producing uplift lips better to serve the purpose of those in FIG. 22.

FIG. 29 is a perspective contracted view of a modified box construction with parts of the box broken away to expose a different fending relationship of lid to tear edge.

FIG. 30 is a view in section on the plane **30—30** in FIG. 29 showing also that the cardboard stock of the box can be bent inward in a manner to bear against and orient the roll from which the dispensed sheet is drawn.

FIG. 31 is a similar view but taken in section on the plane **31—31** in FIG. 29.

FIG. 32 is an enlarged detail of a corner of the box shown in FIG. 30.

FIG. 33 is a perspective view like FIG. 29 showing a still different modification of box construction.

FIG. 34 is a fragmentary view taken in section on the plane **34—34** in FIG. 33 drawn on the scale of FIG. 32.

While the present improvements can be incorporated in boxes having a variety of constructions and made of various materials I prefer to follow the well-known custom of forming the box from a flat sheet of suitably stiff cardboard stock scored and bent in fold-about fashion along parallel lines running lengthwise of the box so as to form a swingable lid **13**, a fixed rear panel **14**, a fixed base panel **15**, a fixed front wall **16**, and according to these novel improvements, a shelf wall **17** additional to the said lid and panels and wall. The two said walls preferably have flat or planar external surfaces that are perpendicularly related so that these two walls stiffen each other on the structural principle of an angle iron. Closure tabs **18** may be provided by endwise continuations of the box panels and walls bent to mutually overlap and interlock in a variety of well-known ways (not shown) in a manner to permanently and fully close the ends of the box and firmly maintain the desired angular relationship of the aforesaid panels and walls.

The present invention is more particularly concerned with the front wall and shelf wall, each of which stiffens the other at the bend of the cardboard, and utilizes a novel relationship of such bend to other bends of the box walls and to a tear edge with which the box is provided. It has been customary to provide dispensing boxes with a tear strip having a tear edge, usually of metal or other relatively hard surfaced substance, in a location on the box that offers but flimsy, support, such as at the free edge of the front wall of the box, or in a location requiring a residual length of the dispensed sheet material to be left dangling outside the box after the used portion is torn off at the tear edge.

As an example it has been proposed to equip a dispensing box with a tear strip located at the bend of the cardboard that forms the junction of the above said fixed bottom panel and the above said fixed front wall of the box. With such arrangement it has been proposed to withdraw the sheet from the box at the rim or free edge of the front wall. Therefore, a residual length of the dispensed sheet equal to the entire width of the front wall must always be left dangling outside the box after the sheet to be used has been torn off. Such residual length becomes subject to crumpling and soiling or even contamination in the course of handling and storing the box. This is objectionable because the dispensed sheet material comes in contact with food to be wrapped therewithin.

My improved construction provides needed firmness and stiffness of support for a hard-surfaced fin such as **24**, **36**, **58**, **65**, **65***a* or **65***b* having a sharp exposed tear edge such as **25**, **41**, **58** or **64** which may comprise sawtooth-shaped teeth against which to rip the sheet being dispensed. Such fin may be carried by the front wall of the box as in FIGS. 1–7, 9, 26 and 29–34 or by a shelf wall as in FIG. 8, 15, 22 or 23 hereinafter more fully described. In either case the sharp tear edge projects outward from the box beyond the external surface of the other of said walls yet must enable the sheet material **26** to be pulled from left to right from the box contained roll **27** preferably without menace to the hands of the user.

The present improvements do away with the necessity of leaving exposed to harmful contact by the hand of the user the aforesaid tear-edge. This is accomplished by hinging the swingable lid **13** to the rear panel **14** on its line of junction therewith and making the lid to extend therefrom to such distance that its terminal margin will oscillate, with the swinging of the lid, to and from a position sufficiently close to the tear edge of the fin to deflect the flesh of a user's hand from harmful contact therewith. This protects the hand of the user from being cut when the fingers of the hand grasp the box for withdrawing the sheet and ripping it against the tear edge.

In all figures of the drawings the protective terminal margin of the swingable lid of the box falls close to the tear edge. In FIGS. 1 to 28 it is shown to extend forward sufficiently far to overhang the tear edge, while in FIGS. 29 to 34 it serves a similar purpose of protection by nesting directly in back of and close to the tear edge with a thickness substantially equalling or greater than the extent of projection of the tear edge beyond the shelf wall of the box.

The sheet that is being dispensed can be protected from scraping against the tear teeth as the sheet leaves the box by providing the shelf wall **17** with a protuberance **34** which may comprise an embossment of the cardboard of which the shelf is made projecting toward the lid **13**. If used with a dispensed sheet of clingy nature the bump or protuberance **34** may be given a slippery surface in any well-known way, as by coating with "Teflon." A protuberance such as **34** should terminate somewhat to the rear of the tear teeth **25**. After a length of the sheet has thus been withdrawn the sheet is severed by ripping it against the points of teeth **25**.

In FIGS. 1 and 2 the shelf wall **17** has a reverse bend at a distance from the front wall **16** so as to form an extension **28** directed toward the latter and bearing frictionally against the surface of roll **27** with a tendency to spring downward and toward the rear of the box. In FIG. 4 it is shown that the shelf wall **17** can be provided with downward bent flanges **29** one edge of which abuts against the inside surface of front wall **16** to act as a bracing stop that helps maintain perpendicular relationship of the shelf wall **17** to the front wall. This resists downward flexing of shelf wall **17** by finger pressure applied inward of the box against the sheet to be dispensed when reached through the opening **30** in lid **13** for urging the residual sheet forward after a preceding length of it has been torn off. The bend of the shelf wall which produces the extension **28** also provides a smoothly rounded linear abutment over which the sheet is slightly flexed on its way from the roll to the outlet of the box. In boxes where the flanges **29** are omitted, as in FIGS. 5 to 7, the shelf **17** may have quarter rounded ends as indicated at **19** in FIGS. 2 and 18. This tends to avoid snubbing of the edges of the sheet against the end of the box opening and such avoidance can be promoted by giving the whole length of the inner edge of the shelf a convex arcuate curvature.

FIG. 5 shows a modified extension **28'** of the shelf wall **17'** in which the former is doubled back to fully underlap the latter and reaches into tight edgewise abutment against the front wall **16** whereby to act as a support resisting downward flexure of the shelf wall beyond its perpendicular relation to the front wall.

FIG. 6 shows a further modified shelf extension **28*a*** in which the length of such extension is prolonged downward to reach into edgewise abutment against the base panel **15** of the box and lie in face-to-face contact with the inner surface of the front wall **16** of the box.

FIG. 7 shows a still differently modified form of the shelf extension **28*b*** in which the extension reaches straight down into contact with the base panel **15** and is bent forward at its bottom to form the flange **32** whose edge abuts against the front wall **16** forming a hollow chamber **31** between the extension **28*b*** and the front wall **16**. Instead the flange **32'** may be turned rearward as indicated by broken lines in FIG. 7 and glued to the base panel **15** of the box.

In FIG. 8 the tear strip **36** is mounted on the shelf wall **17** instead of on the front wall **16** and projects slightly beyond the plane of the outside surface of said front wall so that the sheet being dispensed can be severed by ripping it downward against the teeth **25** of the tear strip **36**.

FIGS. 9 to 15, inclusive, show a modified form of tear strip **40** illustrated in enlarged detail in FIGS. 14 and 15 and also show a modified means for maintaining the sheet **26** lifted above the level of the tear teeth **41** of strip **40**. Tear strip **40** is made by folding on its longitudinal center liner a thin metallic strip so that its free edges can straddle and clinch fins **42** produced by the bend in the cardboard stock where the front box wall **16'** meets the shelf wall **17*a***. To produce the cardboard fins **42** the cardboard blank is pierced with holes at **43** and slit at **44** between alternate pairs of holes **43** and scored at **45** between the other pairs of holes, instead of merely being scored continuously along the line of bend. When the bend takes place along the intermittent scores **45** in FIG. 11 the fins **42** upstand above the surface of the shelf wall as shown in FIG. 12 and are ready to have clinched thereto the tear strip **40** of FIGS. 14 and 15 as best shown in FIG. 15.

The aforementioned modified means for maintaining the dispensed sheet normally elevated above the tear teeth **41**, to avoid scraping the sheet against the teeth, is shown in FIGS. 9 and 10, and may be a hinged tab **48**. A narrow margin **49** of tab **48** is fixedly and permanently secured to the top surface of the shelf **17*a*** so that the remainder of the width of the tab acts as a lip **50** depressibly inclined upward away from the shelf wall. Resilience in the substance of the lifter tab **48** at the hinge where the mounted margin **49** of the tab joins the lip portion **50** of the tab is sufficient to uphold the weight of the dispensed sheet **26**. Also it offers sufficient resistance to the downward pressure of the user's thumb in the opening **30** to afford a frictional grab of the user's thumb against the surface of the sheet to be dispensed whereby to urge it outward to its position in FIG. 9 where it can be grasped for further withdrawal from the box between the thumb and a finger of the user's hand as shown in FIGS. 20 and 21. In FIGS. 10*a*, 11 and 12 there are two spaced apart, up sprung lips **50** formed by doubling over against its own top surface the cardboard stock of the shelf wall in its rear marginal portion **51**. The space **53** between the sheet lifter lips **50'** affords more ready access for the forefinger of the user's hand to the under surface of the sheet being dispensed as the thumb presses downward and draws forward upon the sheet.

In my improved box construction the lid **13** may initially have at its free end a flap **52** bent down over the front wall **16** and removably attached in overlapping relation thereto as by spot gluing. This makes a sealed closure for the box as shown in FIG. 1 until it comes to the hands of the user. The bend at the junction of flap **52** and lid **13** is pierced or line perforated so that the former can easily be torn off from the latter at said bend when the box is put into use. When this has been done the box is conditioned as shown in FIG. 2 where it also is seen that the pierced outline of an opening **30** in lid **13** has resulted in tearing out of the lid a portion thereof that leaves such opening.

Whereas FIG. 18 shows the lid **13** lifted to expose the shelf **17** and equipped with end wings **54** that tuck into the box, such lid will normally remain locked down in its position shown in FIGS. 19, 20 and 21 by any suitable binding engagement of wings **18** with the end walls **18** of the box. Pressure of the thumb downward on the lid **13** in FIG. 21 will increase the frictional drag of the lid against the portion of the sheet **26** that occupies the space between the lid and the shelf wall **17** before a payed out length of the sheet has been torn off. This resists further payout of sheet while tearing.

FIGS. 19, 20 and 21 illustrate the use of the box. In FIG. 19 the only portion of the sheet accessible for contact by the user's hand is the small area exposed in the opening **30**. The user's thumb is pressed against the sheet in this opening with a forward rubbing movement which withdraws a sufficient marginal extent of the sheet from the box opening to be grasped between the thumb and forefinger of the hand as shown in FIG. 20, after which any desired length of the sheet can be pulled from the box as shown in FIG. 21 and torn off by flexing it downward against the tear edge of strip **36** which may or may not be toothed.

I have discovered that the cardboard from which the shelf wall and front wall of the box is made can by suitable treatment be serrated to form adequate tear teeth that will satisfactorily take the place of tear teeth such as **25** or **41** formed on a metallic strip attached to the cardboard. Such cardboard teeth can be hardened to a point where they are durable in service and capable of cleanly severing even aluminum foil and heavy weight, so called "freezer" paper by the application of a suitable hardening agent preferably of such consistency that the cardboard to some extent can absorb the treating agent before hardening takes place. For this purpose I have found it satisfactory to coat the cardboard serrations with a one-stage alkaline reacted straight phenolic resin of syrupy consistency, reacted to a point where it will set by air drying but capable of faster setting by the application of heat, say at about three hundred degrees Fahrenheit for 10 seconds, more or less.

FIGS. 22, 23 and 24 show that a cardboard edge so serrated and treated to form the tear teeth **58** can be afforded by doubling the shelf wall **17*c*** forward upon itself to form the overlapping portion **59** which extends sufficiently far forward to cause its front edge to overhang the front wall **16** of the box whereat said edge is serrated to form the tear teeth **58**. Preferably the shelf wall **17*c*** and its doubled over portion **59** will be securely glued together in face-to-face contact. Stippling **60** represents the marginal region of the cardboard where the aforesaid hardening treatment is applied.

FIGS. 22, 23 and 24 further show that resilient, sheet lifting lips **50*a*** can be struck up from the cardboard of the doubled over portion **59** of shelf wall **17*c*** for performing the same function as lips **50'** in FIGS. 10*a* and 13. FIG. 28 shows a different way of producing modified uplift lips **50*b*** from the cardboard of the shelf portion **59'** that will have a strong uplifting force and preserve without interruption the full strength of the entire bight of cardboard constituting the rear edge of the shelf wall **17*c***.

Still another way of utilizing the cardboard of the box to constitute the tear teeth **64** is shown in FIGS. 25, 26 and 27. In this construction the bend in the cardboard that joins the shelf wall **17*d*** to the front wall **16** of the box is such as to pinch together said walls at said bend and form the fin **65** in FIG. 25 or the fin **65*a*** in FIG. 26

or the fin **65***b* in FIG. 27. Such fin thus is composed of a bight of the cardboard that makes the fin consist of two plies of continuous cardboard that are glued firmly together throughout their areas of mutual surface contact. The tear teeth **64** can then be notched in the bight of the fin to any suitable depth.

The fin of two-ply cardboard thus formed can be oriented so as to project straight forward in over hanging relation to the front wall **16** of the box as shown in FIG. 25, or so as to project diagonally upward and forward from the bend thus to stand out from the planes of both the front wall **16** and shelf wall **17***d* as shown in FIG. 27. In the constructions of FIGS. 25, 26 and 27 the same hardening may be used also as the adhesive that bonds together the two plies of cardboard of the fin.

As a modified construction for fending the sharp tear edge **25**, which need not in all cases be serrated to form teeth, FIGS. 29–32 show the box lid **13***a* provided with a two-ply, doubled-under terminal margin **70** that moves with swinging of the lid to a position wherein it is nested in a space just at the rear of and close against the tear edge **25** of fin **24**, thus padding said space while flanking that part of the tear edge which projects above the shelf wall **17***b* and with sufficient closeness to deflect the flesh of a user's hand and prevent injurious contact of said tear edge therewith. FIG. 32 indicates in broken lines a slightly lifted position to which terminal margin **70** of the lid can yield to permit withdrawal of the dispensed sheet **26** in a somewhat upward direction to clear the tear edge **25**. When the desired length of sheet is withdrawn, progressive pulling downward on the withdrawn sheet will cause it to be ripped or severed against the tear edge.

FIGS. 29–32 also show in full and broken lines alternate paths for the sheet when being drawn from the top or the bottom of a nearly ful lor nearly depleted roll on the core tube **27**. Thus in FIGS. 29–32 the sheet can be withdrawn from a roll placed in the box to be rotated either clockwise or counterclockwise by the pulling off of the sheet. FIGS. 29–32 further show the tongue **69** of cardboard stock that was struck inward from the lid to produce the notch or aperture **30**, bent rearward and slanted downward to bear resiliently on the sheet **26** as it is being withdrawn from the roll. This tongue acts as a yieldable brake to prevent overrunning rotation of the roll if the sheet is yanked out of the box abruptly. FIG. 30 illustrates how additional tongues such as **68** can be struck inward from one or more other panels of the box in a choice of locations to help orient the roll to positions in the box from which it will most easily pay off the sheet being dispensed. Also in FIGS. 29–34 the sheet lifting lips **60***b* lie within and are exposed by the notch or cutout **30** in the lid as in FIG. 23.

In case the folded-under terminal margin **70** of the box, as shown in FIGS. 29–32, fails to possess a desirable degree of longitudinal stiffness, greater stiffness can be imparted to the lid by suitable ribbing, for instance a depending, two-ply doubled-over, flange-like fold or bight **71**, the terminal margin **72** of which can be manually pressed down against the sheet passing over shelf wall **17***b* or can be left free to incline upwardly as shown in FIGS. 33 and 34 in the region of the shallow notch or cutout **30***a*. Manually pressing downward on margin **72** with the fingers of one hand while withdrawing the sheet with the other hand imparts selective braking resistance to withdrawal of the sheet.

The several and varied embodiments of the structural features herein disclosed to illustrate the invention may be used in the combination herein shown or may be combined otherwise, and the claims which follow are intended to cover all such combinations as well as fair equivalents of the shapes and arrangements of the individual components of the box that come within a broad interpretation of the terms by which the invention is defined.

What is claimed is:

1. A sheet tear-off dispensing package with rigidly supported and fended tear strip comprising, a box formed from cardboard having a rear panel and a base panel rigidly interconnected and a substantially uniplanar lid, said cardboard being bent to form a front wall and a shelf wall having angularly related external planar surfaces so that the bend at the junction of said walls causes each of said walls to stiffen the other wall at said bend, and a row of relatively hard surfaced tear teeth extending along one of said mutually stiffened walls sufficiently sharp to pierce the sheet being dispensed and projecting outward of the box beyond the external surface of the other of said walls at said junction, said box lid covering said shelf wall and terminating at an edge substantially confined to the plane of said lid in overlapping relation to said tear teeth and sufficiently close thereto to positively fend said tear teeth from harmful contact with the person of a user, whereby a withdrawn portion of the sheet after being pulled out from said box in a direction to traverse the surface of said shelf wall while said lid is closed can be severed by deflecting said sheet from said direction in a manner to rip the sheet against said tear teeth at said bend.

2. A sheet dispensing package as defined in claim **1**, together with means to brace the said shelf wall with respect to the said front wall in a manner to maintain substantially constant the angle formed by the said planar external wall surfaces at the said bend.

3. A sheet dispensing package as defined in claim **1**, in which the said means to brace the said shelf wall comprises an inward extension of the cardboard of said shelf doubled under with respect to said shelf and extending toward the said front wall of the said box.

4. A sheet dispensing package as defined in claim **1**, together with a protuberance on the said shelf wall elevated from the surface thereof facing the said lid to at least the extent of projection of the said tear teeth beyond said surface of one of the said walls, together with an aperture in the said lid exposing said protuberance and affording access for a finger of the user to contact and impel the said sheet.

5. A sheet dispensing package as defined in claim **4**, in which the said protuberance is spaced backward from the said tear teeth by a gap sufficiently wide to enable the said withdrawn sheet to be ripped against the said tear teeth.

6. A sheet dispensing package as defined in claim **4**, in which said protuberance comprises an embossment of the cardboard of the said shelf wall in the direction of the said lid.

7. A sheet tear-off dispensing package with fended and rigidly supported tear edge comprising, a box formed from cardboard to provide a base panel rigidly connected to a rear panel and a substantially uniplanar lid swingable about a line of meeting with said rear panel and terminating at an edge substantially confined to the plane of said lid, said cardboard being bent to form also front and shelf walls having angularly related external flat surfaces whereby the bend at the junction of said walls causes each of said walls to stiffen the other of said walls at said bend, and a relatively hard surfaced fin extending on one of said mutually stiffened walls along said bend having a tear edge projecting outward from the box beyond the external surface of the other of said walls, said lid being swingable about its said line of meeting with said rear panel into overlapping relation to said shelf wall with said edge of said lid positioned sufficiently close to said tear edge to deflect the flesh of a user's hand for protection against injurious contact with said tear edge when manipulating the box.

8. A sheet tear-off dispensing package as defined in claim **7**, in which the said edge of the said lid stuffs the space directly back of said outward projecting tear edge and is sufficiently thick to flank and fend the same.

9. A sheet dispensing package as defined in claim **7**, in which the said tear edge comprises the edge of a strip

affixed to the said external surface of the said front wall of the box.

10. A sheet tear-off dispensing package as defined in claim **7**, together with a reinforcing ridge on the said lid projecting therefrom inward of the box at the rear of the said shelf wall in a manner to increase the lengthwise stiffness of the said terminal margin of said lid.

11. A sheet tear-off dispensing package as defined in claim **7**, in which the ends of the said shelf wall are extended lengthwise and bent at right angles to the said flat surface thereof in a manner to abut edgewise against the inner surface of the said front wall of the box.

12. A sheet tear-off dispensing package as defined in claim **7**, together with a protuberance on the said shelf wall elevated from the surface thereof facing the said lid to at least the extent of projection of the said tear edge beyond said surface of one of the said walls, together with an aperture in said lid exposing said protuberance and affording access for a finger of the user's hand to contact and start withdrawal of the sheet to be dispensed.

13. A sheet tear-off dispensing package as defined in claim **12**, in which the said protuberance is a depressible hinged lip normally and resiliently inclined in uplifted relation to the surface of said shelf wall.

14. A sheet tear-off dispensing package as defined in claim **12**, together with a tongue stemming from an edge of the said aperture extending therefrom into a position within the said box to bear tangentially against the box contained sheet to be dispensed.

15. A sheet dispensing package as defined in claim **12**, in which the said protuberance comprises two lips spaced apart edgewise, and resiliently biased normally to assume and return to a sheet lifting position in angular relation to the said shelf wall.

16. A sheet tear-off dispensing package as defined in claim **15**, in which a portion of the said shelf wall is

doubled forward upon itself, and the said two lips are cutout sections of said doubled forward portion of the cardboard of said shelf wall bent outward and forward with respect thereto.

17. A sheet tear-off dispensing package as defined in claim **7**, together with fins at the said junction of the said front and shelf walls comprising struck-out portions of the cardboard of which at least one of said walls is made projecting in the plane of said one of said walls beyond the bend of said cardboard at said junction.

18. A sheet tear-off dispensing package as defined in claim **17**, in which the said tear edge comprises outward pointed projections of a length of thin folded sheet metal straddling and clinched to the said fins.

19. A sheet tear-off dispensing package as defined in claim **7**, in which a portion of the said shelf wall of the box is doubled forward upon itself sufficiently far to terminate in a front edge overhanging the said front wall of the box, and said front edge is serrated to form tear teeth.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,227,340 January 4, 196

Theodore G. Haley

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 8, line 28, for the claim reference numeral "1" read -- 2 --.

Signed and sealed this 26th day of July 1966.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNE
Commissioner of Patents