March 18, 1924. 1,487,130

B. F. WITHERELL

PACKAGE SEVERING DEVICE

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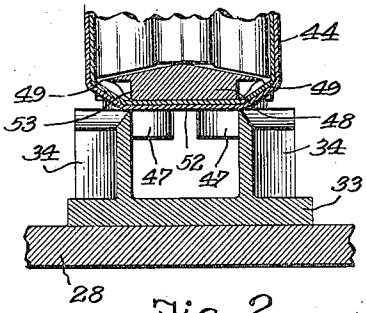

Fig. 2.

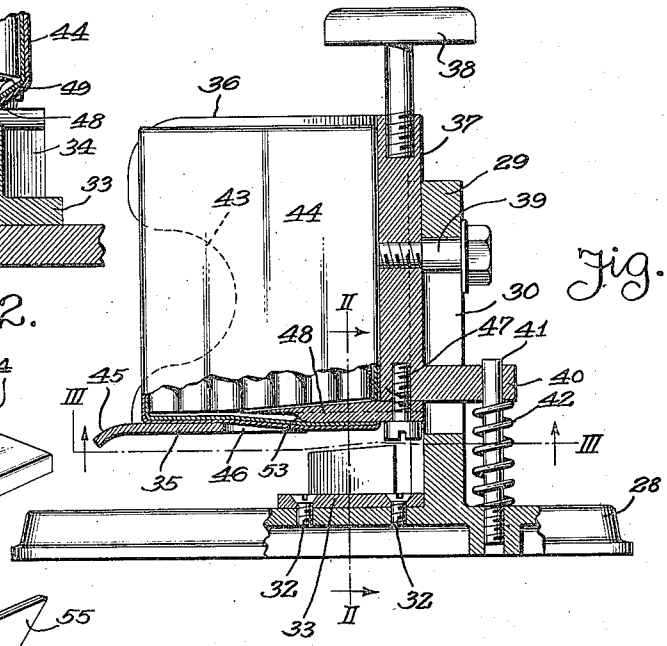

Fig. 1.

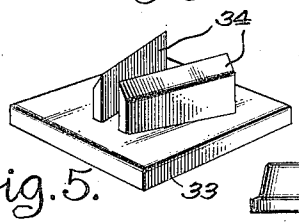

Fig. 5.

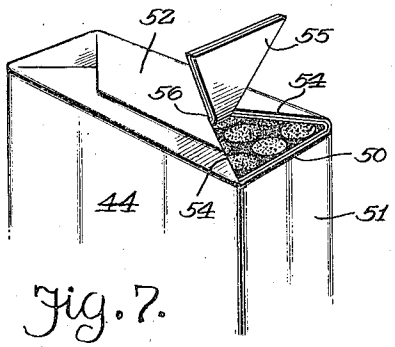

Fig. 7.

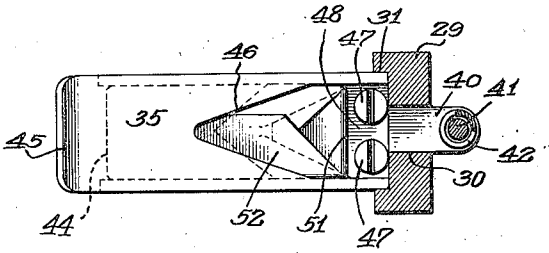

Fig. 3.

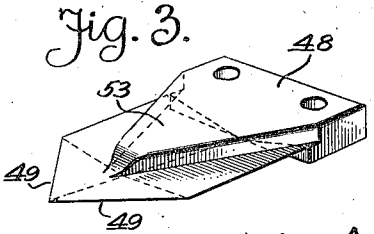

Fig. 4.

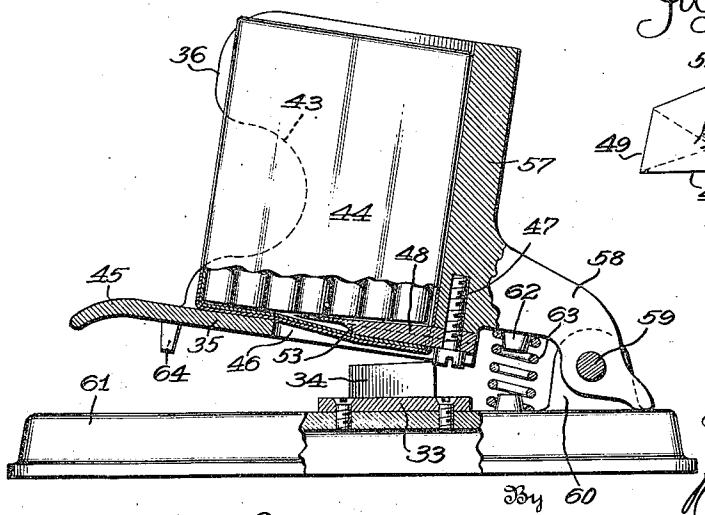

Fig. 6.

Inventor

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Fig. 8.

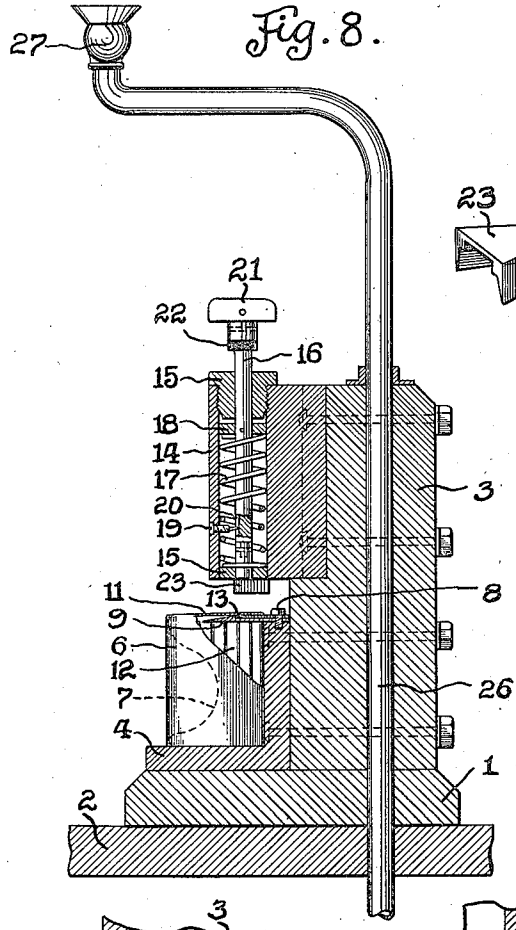
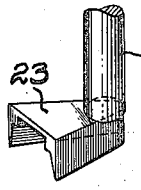


Fig. 10.



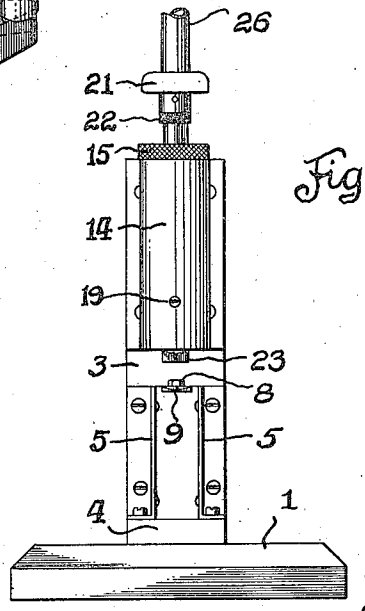
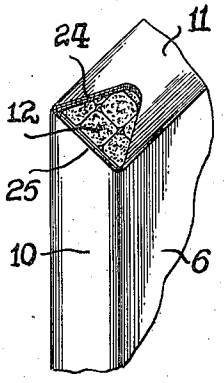


Fig. 9.

Fig. 13.



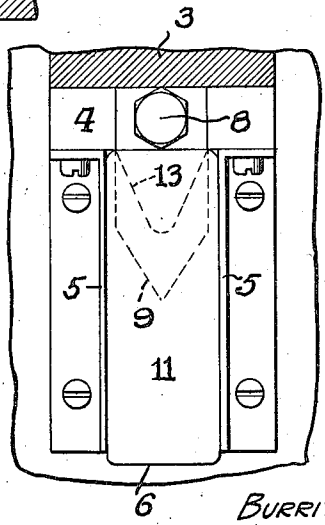


Fig. 12.

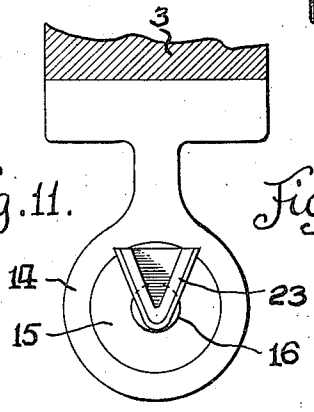


Fig. 11.

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PACKAGE SEVERING DEVICE

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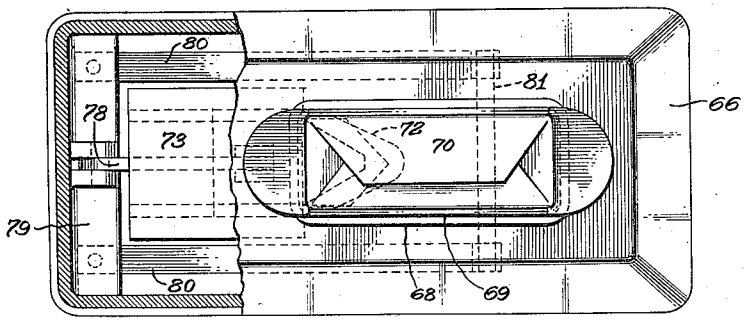

Fig.14.

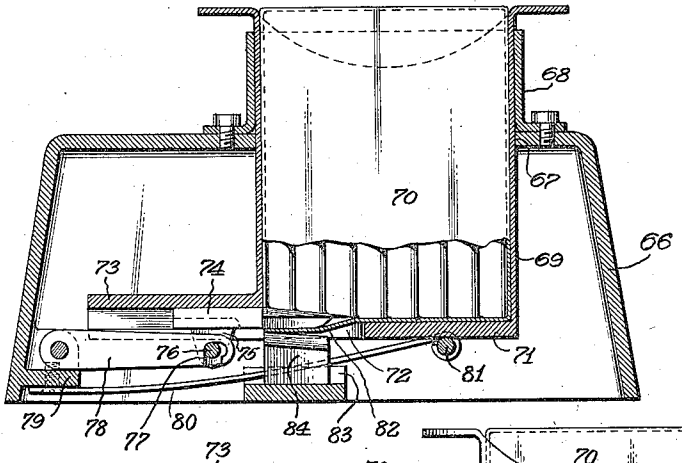

Fig.15.

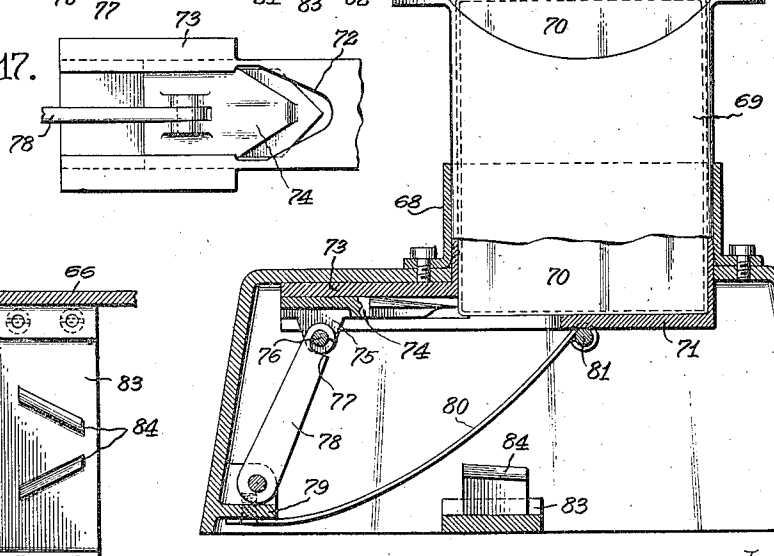

Fig.16.

Fig.17.

Fig.18.

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Patented Mar. 18, 1924. 1,487,130

UNITED STATES PATENT OFFICE.

BURRITT F. WITHERELL, OF DETROIT, MICHIGAN.

PACKAGE-SEVERING DEVICE.

Application filed November 25, 1921. Serial No. 517,815.

To all whom it may concern:

Be it known that I, BURRITT F. WITHERELL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Package-Severing Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

In tearing open the ends of cigarette packages and the like and removing a few cigarettes leaves the package in such condition that it is easily crushed or collapsed with the result that the package is disfigured, cigarettes often injured, and tobacco wasted from the ends of the cigarettes. To eliminate considerable of the tobacco waste and maintain the cigarette package in its original or natural form, I have a package aperturing device by which the end wall of a cigarette package or the like, may be provided with an opening without disrupting the package and from which opening cigarettes may be removed.

The package aperturing device is adapted to be used on a counter or suitable support in cigar stores and at tobacco dispensing stands so that when a package of cigarettes is purchased it may be operated upon by the device and opened to permit of cigarettes being removed therefrom. The device may form part of a store fixture and the device includes means for laterally slitting a package, as the package is placed in engagement with the device, and means for punching and further severing the package so that a portion of the wall thereof is cut and may be removed to afford an aperture through which cigarettes may be removed from the package.

The device may be in various forms and the construction of a few of the preferred forms will be hereinafter described and then claimed, and reference will now be had to the drawings, wherein

Figure 1 is a vertical sectional view of the package aperturing device, showing that form wherein the package holder is reciprocated;

Fig. 2 is a cross sectional view taken on the line II—II of Fig. 1;

Fig. 3 is a horizontal sectional view taken on the line III—III of Fig. 1;

Fig. 4 is a perspective view of a detached blade;

Fig. 5 is a perspective view of a set of stationary blades;

Fig. 6 is a vertical sectional view of another form of package aperturing device wherein the package holder is tiltable;

Fig. 7 is a perspective view of a portion of a cigarette package which has been opened in accordance with my invention.

Fig. 8 is a vertical sectional view of package aperturing device wherein the package holder is stationary;

Fig. 9 is a front elevation of the same;

Fig. 10 is a perspective view of the punching die or knife for the device shown in Fig. 8;

Fig. 11 is an enlarged horizontal sectional view of a portion of the device shown in Fig. 8, illustrating a bottom plan of the punch die;

Fig. 12 is a similar view of a portion of the device shown in Fig. 8 and illustrating a package in the device as having been laterally slitted;

Fig. 13 is a perspective view of a portion of the cigarette package showing a configuration of the aperture made by the device illustrated in Fig. 8;

Fig. 14 is a plan of a further modification of my invention, wherein the lateral cutting blade or knife is shifted;

Fig. 15 is a vertical sectional view of the same, showing the blades or knife shifted;

Fig. 16 is a similar view showing the normal position of the blade or knife;

Fig. 17 is a plan of the slidable blade or knife, and

Fig. 18 is a plan of the stationary blade or knife.

First referring to Figs. 1 to 5 inclusive and Fig. 7, the reference numeral 28 denotes a base having an upright 29 provided with a vertical slot 30 and a front vertical groove 31. Mounted on the base 28 against the upright 29 by screws 32 or other fastening means is a stationary blade holder or die 33 having angularly disposed upstanding blades 34, said blades being disposed at an angle with the front ends thereof converging and the rear ends thereof in proximity to the upright 29, there being a gap between the front ends of said blades.

Slidable in the groove 31 of the upright 29 is a package support 35 having side walls 36 and the rear wall 37 which engages in the groove 31. Connected to the upper end

of the wall 37 is a punch head or handle 38 by which the package holder or support may be conveniently raised and lowered relative to the upright 29, and the wall 37 has a screw bolt 39 extending through the slot 30 to slidably hold said wall relative to the upright. Near the lower end of the wall 37 is a lug 40 which extends through the slot 30 and is slidable on a pin 41, carried by the base 28 adjacent the upright 29. A coiled spring 42 encircles the pin 41, between the base 28 and the lug 40 so that the expansive force of the spring may hold the package support normally elevated, while the lug 40 will limit the downward movement of the package support.

The side walls 36 of the package support 35 are cut away, as at 43, to provide clearance for the fingers of a hand that may insert a cigarette package 44 in the support with the package resting on the bottom of the support, which has a finger piece 45 which may be held while the package is placed in the support, said finger piece also permitting of the package being guided over the bottom of the support.

The bottom of the support 35 has its inner end provided with a substantially V shaped opening 46 and set in said opening and connected to the lower end of the wall 37, by screws 47 or other fastening means is a horizontally disposed blade or die 48 providing angularly disposed cutting edges 49 adapted to provide the narrow side wall 51 of the package 44 with a transfer slit 50 adjacent the end wall 52 of the package as the package is pushed into the support 35.

The blade or die 48 has a tapering boss or enlargement 53 which engages the inner face of the end wall 52 and either depresses said wall or slightly elevates the cigarettes within the package, as shown in Fig. 1. The holder and its package are now in condition for further cutting of the package which is accomplished by lowering the package support or holder. As the package support descends the end wall 52 is brought into engagement with the set of blades 34, which have a shearing action at the sides of the boss or enlargement 53. The wall 52 is slitted, as at 54 with the slits converging from the slit 50 towards the central portion of the wall 52, thus producing a tab 55 which is connected to the wall 52 by a neck portion 56. The tab 55 may be raised and easy access had to the cigarettes after the package is removed from its support, which may be conveniently accomplished after the package support assumes normal position.

In Fig. 6 the same results are attained by a package support or holder 57 provided with a rearward extension 58 pivotally connected, as at 59 to upstanding lugs 60 at the rear end of a base 61. The extension 58 and the base 61 have opposed retaining teats 62 for a coiled expansion spring 63 which holds the package support normally elevated at an inclination to the base 61. The finger piece 45 of the package support may be used for lowering said support so that a package will be severed or apertured, and feet 64 on the support will limit a lowering movement of the same.

Reference will now be had to Figs. 8 to 13 inclusive, and the reference numeral 1 denotes a base adapted to be placed on a counter or other support 2. On the base 1 is an upright 3. In front of the upright 3 and on the base 1 is an angle support 4 provided with parallel outstanding guide plates 5 between which a cigarette package 6 may be placed, said guide plates having the front edges thereof recessed, as at 7, so as to provide clearance for the fingers when manipulating the package 6 relative to the guide plates.

Set in the top of the angle bracket 4 and detachably connected thereto by a screw bolt 8 or other fastening means is the inner end of a lateral outwardly projecting pointed knife 9 which is adapted to enter the side wall 10 of the package 6 directly beneath the end wall 11 of said package and without cutting or injuring the ends of cigarettes 12 within the package. This piercing of the package is accomplished as the same is placed between the guide walls 5, said guide walls cooperating with the angle bracket 4 in supporting a package with the knife or blade 9 therein so that the package may be further operated upon.

The upper face of the knife or blade 9 is recessed to receive a soft filler 13, as lead, fiber or the like, adapted to prevent a punching die, to be hereinafter described, from being unduly injured should the punching die contact with the knife.

Suitably secured to the front side of the upright 3 and overhanging the angle bracket 4 is a punch barrel or cylinder 14 having its upper and lower end closed by guides 15 for a plunger 16 which is reciprocable in the punch barrel. The plunger 16, is supported normally elevated by the expansive force of a coiled spring 17 encircling the plunger within the punch barrel, said spring being interposed between the lower plunger guide 15 and an abutment 18 on the plunger 16 within the punch barrel. Rotation of the plunger is prevented by a barrel screw 19 extending into a longitudinal groove 20 in the plunger, and on the upper or outer end of the plunger is a button or head 21 and a cushion member 22 made of fiber or other yieldable material. This cushion member is adapted to impinge upon the uppermost plunger guide 15 and limit the downward movement of the plunger 16 when the head or button 21 is struck a blow.

On the lower end of the plunger 16 is a

V-shaped die or cutting blade 23 adapted to enter the end wall 11 of a package 6 and provide said end wall with a substantially V-shaped slit 24 which will cooperate with the lateral slit 25 of the wall 10 in permitting a triangular shaped tab or wall piece being removed from a package, to expose the ends of some of the cigarettes 12 within the package, so that the cigarettes can be removed, one at a time, without crushing or disrupting the package. The die or knife 23 is prevented from being injured by the soft filler or pad 13 on the knife 9, and as soon as the die or knife 23 assumes normal position, the package 6 can be removed from the device.

As shown in Fig. 8 the base 1 and the upright 3 may permit of the gas supply pipe 26 passing therethrough to afford a lighter 27 in proximity to the package aperturing device, and this is just an instance of how my device may be built about or in proximity to cigar store or stand fixtures.

Reference will now be had to Figs. 14 to 18 inclusive showing a hollow frustropyramidical shaped base or casing 66 which has its top wall provided with an opening 67 surrounded by an upstanding oblong guide 68 for a reciprocable package holder 69 in which a package 70 may be placed. The package holder or support 69 has its bottom wall 71 provided with a substantially V-shaped opening 72 and a lateral extension or guide 73. Slidable in the extension or guide 73 is a blade or knife 74 having a set of depending lugs 75 connected by a pin 76. Engaging the pin 76 is a lever or arm 78 provided with a bayonet shaped slot 77 which receives the pin 76, and the arm or lever 78 is pivotally mounted on an inwardly projecting bracket 79 carried by the base 66.

Attached to the bracket 79 is a set of resilient arms or springs 80 connected by a transverse rod or pin 81 held normally in engagement with the bottom wall 71 of the package holder or support 69. The resilience of the arms or springs 80 is great enough to support the package holder normally elevated, as in Fig. 16, but the package holder may be depressed against the springs or arms 80 to assume a lowered position, as shown in Fig. 15. When this occurs the blade or knife 74 is shifted towards the package 70 to produce a lateral cut or slit which leaves an end tongue 82 on the bottom of the package with the tongue extending into the opening 72. Initial movement of the package holder 69 starts the blade or knife inwardly until it has made a full stroke, as shown in Fig. 15, when the pin 76 will be in position to ride out of the slot 77 on further depression of the package holder.

In the bottom of the base 66 is a transverse support 83 for stationary blades or knives 84, and further depression of the package holder causes these blades or knives to further cut and slit the bottom of the package 70 so as to leave the tongue 82 connected to the end wall of the package by a neck portion which will permit of the tongue being easily torn from the package.

It is thought that the operation and utility of the package aperturing device will be apparent without further description and while I have herein described the device as being used for aperturing cigarette packages, it is obvious that the angle bracket, holder and guides may be shaped to accommodate various sizes and shapes of packages or containers, so that the same may be apertured or slitted to such an extent as to permit of the contents of the package or container being easily obtained. Such other changes as are permissible by the appended claims may be resorted to without departing from the scope of the invention.

What I claim is:—

1. A device of the type described comprising a movable package support; a knife carried thereby and adapted to slit said package, a set of knives and means supporting said package support so that it may be shifted to cause the package to be further slitted by said set of knives.

2. A device as in claim 1, wherein the knives cooperate in cutting a tab from an end wall of the package, which tab is held by a neck portion of the end wall.

3. Means for aperturing a package containing cigarettes so that the cigarettes may be removed at an end wall of the package, said means comprising knives one of which is adapted to laterally slit the package adjacent the end wall and crowd cigarettes away from said wall, and means supporting the package so that the other knives may engage the end wall of the package to further cut it and form a hinged tab which may be moved to expose cigarettes after the package is removed from its supporting means.

4. Package aperturing means as in claim 3, wherein the package supporting means is shiftable towards the last mentioned knives, and spring supporting means for said package supporting means.

5. A package aperturing device, comprising stationary knives against which a package is shifted to cause said knives to slit said package, and a movable die adapted to cut the package at the slit thereof so that a portion of the package may be removed.

6. A package aperturing device as in claim 5, wherein the movable die is reciprocable at an angle to the direction in which the package is shifted and is held normally retracted.

7. A package severing device comprising a horizontally disposed knife, means for movably holding a package to cause the knife to laterally slit the package adjacent an end wall of the package, and a die in

the path of the movable package adapted to cooperate with said knife in removing a portion of the package.

8. A package severing device as in claim 7, wherein said means includes a reciprocable package holder and a guide for said holder.

9. A package severing device comprising a reciprocable knife, means for supporting a package and said knife so that both may be lowered, and means connected to said knife to cause said knife to enter said package supporting means when said package supporting means is lowered.

10. A package severing device as in claim 9, wherein the last mentioned means includes a pivoted lever disengageable relative to said knife.

11. Means adapted for removing an end portion from a package, said means comprising severing elements, one of which is fixedly held so that a package may be pushed on the cutting element, and the other of which is adapted to be shifted to cooperate with the first cutting element in removing a portion of the package.

12. Package aperturing means comprising a movable package holder, and cutting elements adapted to engage the package one in advance of the other so as to produce a tongue that may be easily removed from the package.

In testimony whereof I affix my signature in presence of two witnesses.

BURRITT F. WITHERELL.

Witnesses:

HENRY WITHERELL,

ANNA M. DORR.