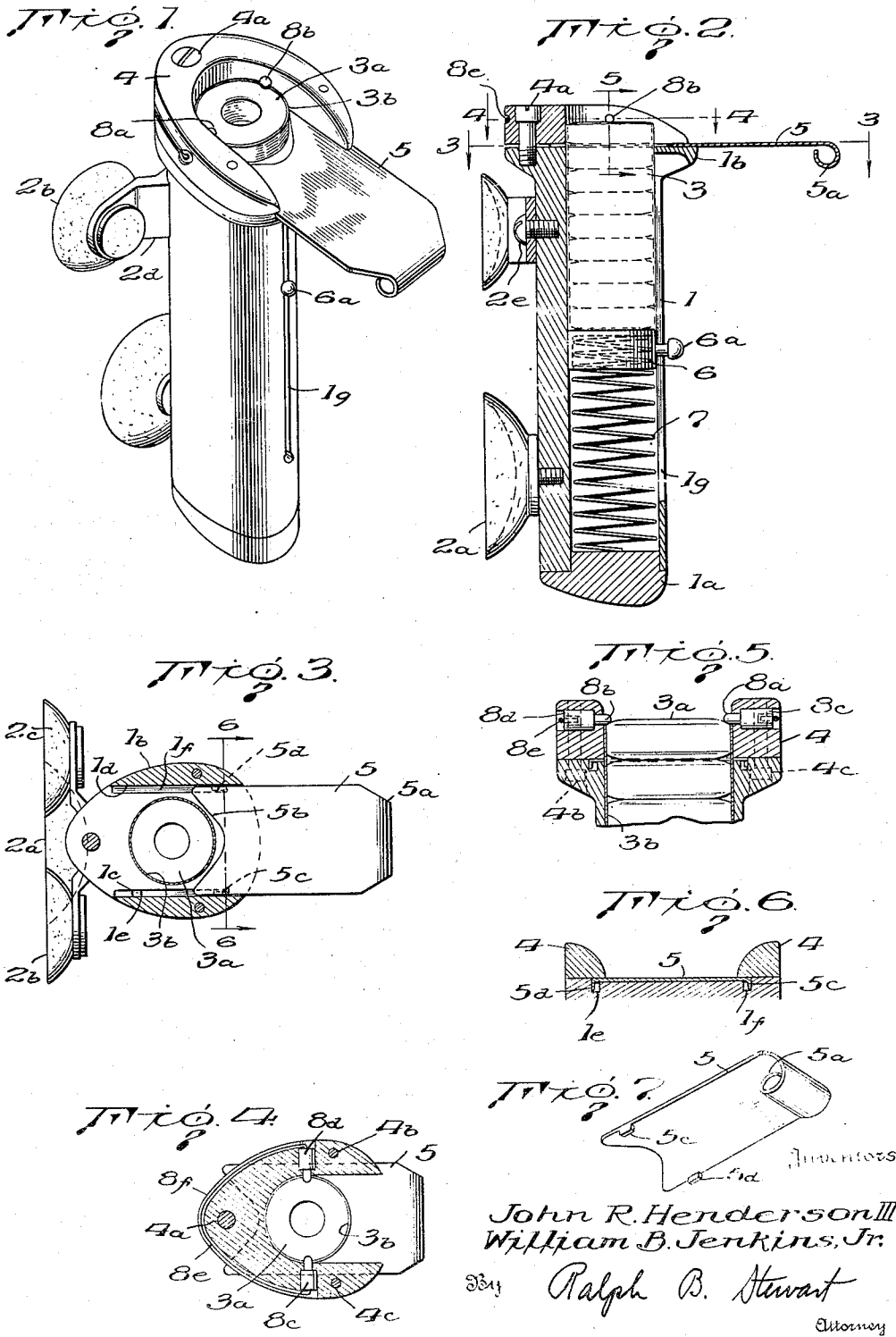


J. R. HENDERSON, 3D., ET AL

DISPENSING DEVICE

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DISPENSING DEVICE

John R. Henderson, III, and William B.
Jenkins, Jr., Fredericksburg, Va.

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This invention relates to a dispensing device and in particular to a device for dispensing individual articles from a wrapped package, such as wrapped peppermint candy rings commonly known as "Lifesavers."

Dispensing devices have already been proposed for dispensing tablets, wafers, discs, and the like, but in these prior devices the tablets or wafers are placed in the dispensing device in an unwrapped condition and are ejected or dispensed from the device simply by moving each individual piece out of the device at the point of discharge. In our invention, the articles to be dispensed are placed within the dispenser in a wrapped package in the same condition as they are purchased, and provision is made in the dispenser for severing the wrapper and for releasing an individual article from the dispenser along with a severed part of the wrapper. With such an arrangement, the articles remain in the original package and are not touched by the hand until they are ready to be eaten. Furthermore, our dispenser can be operated by only one hand and is especially convenient for use while driving an automobile.

One embodiment of our invention is illustrated in the accompanying drawing in which:

Figure 1 is a perspective view illustrating the dispenser of our invention with the cutting blade in open or withdrawn position ready for the cutting stroke;

Figure 2 is a vertical sectional view of the dispenser shown in Figure 1;

Figures 3, 4 and 5 are sectional views taken along lines 3—3, 4—4 and 5—5 of Figure 2.

Figure 6 is a sectional view taken along line 6—6 of Figure 3; and

Figure 7 is a perspective view of the lower side of the cutting blade of our dispenser.

Referring to the drawing, the dispenser is formed of a tubular casing or container 1 having the lower end thereof closed by a bottom piece 1a which may be separable from the casing 1 or may be permanently secured thereto. The casing 1 could be of cylindrical shape, but in the modification illustrated, the back wall of the casing is thicker than the front wall, and supporting devices for the dispenser are secured to the thick portion of the wall. Any suitable supporting device may be employed, but for the purpose of illustration, we have shown rubber vacuum cups for this purpose. For example, a vacuum cup 2a is secured near the lower

end of the dispenser by a suitable screw, and two smaller cups 2b and 2c are mounted upon a bracket 2d which in turn is secured to the thick portion of the wall of casing 1 by a suitable screw 2e. The vacuum cups permit the dispenser to be mounted upon any smooth surface, such as the instrument board of an automobile or the glass panels of the windshield or doors of an automobile.

The inner bore or space of the casing 1 has a shape to conform to the articles to be dispensed, and in the illustrated embodiment, the bore is of cylindrical shape conforming to a package of mint rings or "Lifesavers" indicated at 3 and consisting of a number of rings 3a wrapped in a foil wrapper 3b.

The tubular casing 1 is provided at its upper end with an enlarged flange 1b which may be formed integral with the casing wall or may be formed as a separate piece attached to the casing. A U-shaped headpiece 4 is mounted upon the enlarged flange 1b and is secured to the flange 1b by suitable screws 4a, 4b and 4c, the screw 4b passing through the yoke portion of the head 4 from above and having threaded engagement with flange 1b, while the screws 4b and 4c pass through the flange 1b and are threaded into the legs of the headpiece 4. The inner wall at the yoke portion of the headpiece 4 conforms to the shape of the bore in casing 1, and the two legs of the headpiece are spaced apart to form a chute through which a severed ring 3a may be moved transversely between the legs of the headpiece 4. The upper surface of flange 1b is recessed between lines 1c and 1d (Figure 3) for the purpose of providing a guiding channel for cutting blade 5 arranged to reciprocate transversely of casing 1 between the flange 1b and the headpiece 4. The cutting blade 5 is preferably formed of a thin plate of stainless steel, the rear end being curled as at 5a to provide a convenient handle portion for operating the blade, and having a cutting edge 5b at the other end of generally V shape, the two straight portions of the cutting edge being substantially at right angles to each other and being joined by a rounded center portion as shown. Two depending lugs or ears 5c and 5d are formed on opposite sides of blade 5 near the forward end thereof as shown in Figure 7, and these lugs are arranged to move within a pair of channel recesses 1e and 1f formed on opposite sides of the blade recess 1c—1d. Channels 1e and 1f do not extend entirely to the edge of flange 1b, as shown in Figure 3, and the end walls of these channels serve

to limit the travel of blade 5 in both directions by cooperation with the lugs 5c and 5d.

A cylindrical follower 6 is arranged within casing 1, and a helical spring 7 cooperates with the follower 6 to press the follower 6 against the lower end of the mint package 3 and tends to force the package out of the open end of the dispenser. A pair of retractile detents 8a and 8b are mounted in headpiece 4 on opposite sides of the bore of the dispenser and project into the path of the wrapped package, thus serving to limit the upward movement of the package under the action of the spring 7 to a position where one mint wafer or ring can be severed by the cutting blade 5. The detents 8a and 8b are mounted upon sliding plungers 8c and 8d arranged in transverse cylindrical bores formed in opposite arms of headpiece 4, and these two plungers are urged towards each other by a U-shaped wire spring 8e arranged within a groove 8f formed in headpiece 4 and extending around the rear side thereof. In the preferred construction, detents 8a and 8b are formed integral with sliding plungers 8c and 8d, although these detents might be formed separately and suitably supported upon the plungers. The ends of spring 8e are bent at right angles and engage in hollow centers of plungers 8c and 8d. Any other suitable form of biasing means may be employed to urge detents 8a and 8b into the path of the package.

In using our dispenser, we prefer to remove the usual printed paper wrapper which surrounds the foil wrapper, leaving only the foil wrapper on the package. It will be understood, however, that our dispenser is not limited to use on a package having only one wrapper or having a foil wrapper. In loading the dispenser, the cutting blade 5 is withdrawn to the position shown in Figures 1 and 2, and the wrapped package of "Lifesavers" may be inserted in the open end of the container by applying sufficient pressure on the package to cause the rounded detents 8a and 8b to be retracted or pressed back against the action of spring 8e. An easier method of loading the dispenser is to place the end of the package on the upper surface of blade 5, then move the package on the upper surface of blade 5 into position over the bore of the dispenser, and then press the package straight down until the upper end of the package moves beyond detents 8a and 8b. Detents 8a and 8b will prevent the package from being forced out of the container by spring 7.

When it is desired to sever a mint from the package, the blade 5 is grasped by the handle 5a and forced into its closed position (see Figure 4), thus severing the foil between the uppermost mint and the second mint in the package. The blade is allowed to remain in its closed position, and the severed mint may be withdrawn from the dispenser by engaging the mint with either the thumb or forefinger and sliding the mint over the upper surface of the blade 5. When another mint is wanted, the blade is reciprocated through another cycle. As soon as the blade is moved to open position, the spring 7 forces the package upwardly until a mint projects above the plane of the blade 5 and is in position to be severed by again forcing the blade into closed position.

The follower 6 is provided with a handle 6a having a stem which passes through a vertical slot 1g formed in the front part of the casing 1, and the stem of the handle 6a has threaded engagement with follower 6. If desired, the stem of the handle 6a may have flattened sides which cooperate with slot 1g to prevent unscrewing of

the handle, except when the handle lies adjacent the enlarged portion of the slot 1g at the bottom thereof. The handle 6a for follower 6 not only serves the purpose of providing a means externally of the casing 1 for moving the follower by hand, but it also serves as an indicator to indicate the approximate number of mints contained within the dispenser.

While the dispenser of our invention has been described and shown with the open end thereof in the upper position, it will be understood that the dispenser may be mounted in any desired position. In fact, the dispenser may be mounted in inverted position, in which case the biasing spring 7 may be omitted, and the weight of the package will then serve to bias the package to its lowermost position so that the lowermost mint extends beyond the plane of the cutting blade 5 when the blade is in open position. Where the dispenser is used in inverted position, detents 8a and 8b will prevent a severed mint from dropping out of the dispenser when the blade 5 is moved to closed position, but the severed mint can be easily removed by sliding the mint transversely along the surface of the blade 5.

One advantage of the construction embodying the U-shaped headpiece 4 and the retractile detents 8a and 8b is that the two legs of the headpiece 4 provide a discharge chute for withdrawing a severed mint from the dispenser simply by pressing the end of the thumb or forefinger in contact with the outer surface of the severed mint and sliding the mint along over the surface of blade 5. Thus, the discharge end of the dispenser is entirely open, except for the slight obstruction of stops 8a and 8b which do not interfere with the removal of a severed mint by the finger as described above.

The arrangement of the retractile stop pins 8a and 8b not only permits the dispenser to be loaded without removing any part of the device, but also permits the dispenser to be readily unloaded without severing the individual articles, and without taking the dispenser apart, by simply moving the blade 5 to open position and pressing upwardly on handle 6a with sufficient pressure to force pins 8a and 8b out of the path of the package. This is made possible by the fact that the ends of pins 8a and 8b are rounded at the point where they engage the package, and by applying sufficient pressure to the package it will force the pins back in their sockets.

Various modifications may be made in the construction shown and described without departing from the spirit of the invention. While we prefer to use the U-shaped cutting edge on blade 5, as shown, the invention is not limited to this particular shape of cutting edge, except as specifically recited in the appended claims. It will also be understood that in the appended claims, expressions such as "means tending to move said package out of said open end" and similar expressions, are intended to be interpreted broadly to cover arrangements wherein a spring, such as spring 7, provides the biasing force, or an arrangement wherein the dispenser is inverted and the biasing force is supplied by the weight of the wrapped package.

While our dispenser is especially adapted for dispensing "Lifesavers," it will be understood that it is not limited to use in connection with this type of article, but may be applied for dispensing articles of any description and for any purpose where the articles are of uniform size.

What we claim is:

1. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container being closed at one end and having a flanged surface surrounding the opposite open end, a U-shaped headpiece mounted upon said flanged surface surrounding said open end and providing a transverse discharge chute adjacent said open end, a flat cutting blade supported between said flanged surface and said headpiece and adapted to reciprocate across the open end of said container, and stop means supported on said headpiece for holding said wrapped package in a position where the outermost article is positioned between the arms of said headpiece and above the plane of said blade.

2. A device for severing individual articles from a wrapped package comprising, in combination, a tubular casing for holding said package, said casing having an open end and embodying means tending to move said package out of said open end, a U-shaped headpiece mounted on said casing adjacent the open end thereof and positioned to receive the outer end of said package between the arms thereof, a cutting blade supported between said casing and said headpiece and arranged to reciprocate across the open end of said casing, and stop means adjacent said open end for engaging the advancing end of said package and holding the same between the arms of said headpiece in position for said blade to sever the foremost article from said package.

3. A device according to claim 2 wherein said stop means is retractile from the path of said package whereby said package may be inserted into said device through said open end.

4. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container having an open end and embodying means tending to move said package out of said open end, a pair of retractile detents mounted on opposite sides of said open end and projecting into the path of said package, the said detents being positioned to stop said package in a position with the foremost article of said package extending beyond said open end, means mounted on said container for severing the foremost article from said package, and means forming a discharge chute for withdrawing the severed article from said device transversely of said casing.

5. A dispensing device comprising a tubular container for receiving a plurality of articles to be dispensed, said tubular container having an open end and embodying means tending to move said articles out of said open end, a U-shaped headpiece mounted adjacent said open end and forming a discharge chute for removing the foremost article from said container transversely thereof, a pair of retractile stops mounted on opposite arms of said headpiece and having rounded ends for engaging the edge of said foremost article on opposite sides thereof, said stops being positioned to stop said articles with the foremost articles positioned opposite said chute, whereby the foremost article may be engaged by the finger and shifted transversely through said chute and removed from said container.

6. A dispensing device comprising a tubular container for receiving a plurality of articles to be dispensed, said tubular container having an open end and embodying means tending to move said articles out of said open end, means forming a discharge chute adjacent said open end for

removing the foremost article from said device transversely of said container, a pair of retractile stop pins mounted on opposite sides of said chute and having rounded ends for engaging the edge of said foremost article on opposite sides thereof, said stop pins being positioned to stop said articles with the foremost article positioned opposite said chute, whereby the foremost article may be engaged by the finger and shifted transversely through said chute and removed from said device.

7. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container having an open end and embodying means tending to move said package out of said open end, a U-shaped headpiece mounted adjacent said open end and providing a transverse discharge chute, a cutting blade arranged to reciprocate transversely of said container between said container and said headpiece, a pair of retractile stops mounted on opposite arms of said headpiece and having rounded ends for engaging the edge of said package on opposite sides thereof, said stops being positioned to stop said package with the foremost article therein positioned opposite said chute, whereby when the foremost article is severed, it may be engaged by the finger and shifted transversely through said chute and removed from said device.

8. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container being closed at one end and having a flanged surface surrounding the opposite open end, a U-shaped headpiece mounted upon said flanged surface surrounding said open end and providing a transverse discharge chute adjacent said open end, a cutting blade supported between said flanged surface and said headpiece and adapted to reciprocate across the open end of said container, a spring-pressed follower within said container tending to move said package out of said open end, a handle secured to said follower and extending to the outside of said container through a longitudinal slot formed therein, a pair of retractile stops mounted on opposite arms of said headpiece and having rounded ends for engaging the edge of said package on opposite sides thereof, said stops being positioned to stop said package with the foremost article therein positioned opposite said chute, whereby when the foremost article is severed, it may be engaged by the finger and shifted transversely through said chute and removed from said device.

9. A device according to claim 2 for severing articles from a wrapped package of round cross-section, and wherein the cutting edge of said blade is V-shaped with the straight portions thereof arranged substantially at right angles to each other.

10. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container having an open end and embodying means tending to move said package out of said open end, a U-shaped headpiece mounted adjacent said open end and providing a transverse discharge chute, a cutting blade arranged to reciprocate transversely of said container between the arms of said headpiece, said blade being positioned between said container and said headpiece and serving as the bottom of said chute, a stop mounted on said headpiece and being positioned

to stop said package with the foremost article therein positioned between the arms of said headpiece and above said cutting blade, whereby when the foremost article is severed, it may be engaged by the finger and shifted along said chute on the upper face of said blade and removed from said device.

11. A dispensing device comprising a tubular container for receiving a wrapped package of articles to be dispensed, said container having an open end and embodying means tending to move said package out of said open end, a U-shaped headpiece mounted adjacent said open end and providing a transverse discharge chute, a cutting blade arranged to reciprocate trans-

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versely of said container between said container and said headpiece, a retractile stop mounted on said headpiece and being positioned to stop said package with the foremost article therein positioned opposite said chute and above said cutting blade, whereby when the foremost article is severed, it may be engaged by the finger and shifted transversely through said chute and removed from said device, said retractile stop being positioned to be moved into retracted position by inserting a package of articles into said chute and pressing the package against said stop.

JOHN R. HENDERSON, III.
WILLIAM B. JENKINS, JR.