

APPARATUS AND METHOD FOR HOLDING PRODUCTS

I. CROSS-REFERENCE TO RELATED APPLICATION

This application claims the benefit of U.S. Provisional Application No. 62/740,931, filed October 3, 2018, which is hereby incorporated by reference in its entirety.

5 II. FIELD OF INVENTION

An embodiment of the invention pertains to apparatuses and methods for holding products, including storing, dispensing, and/or displaying products.

III. SUMMARY OF INVENTION

10 An embodiment of the invention is directed to apparatuses and methods for holding products. For example, an embodiment can include a case, container or other support structure, such as a humidor, with a system for storing, dispensing, and/or displaying a product being located within, connected to, or otherwise associated with the case, container, or other support structure.

IV. BACKGROUND

15 Cigars are often sold in boxes, tubos, or other forms. A tubo is cylindrical container (usually made of glass or a metal such as aluminum) which contains a single cigar. In box form, tubo form, or otherwise, cigars are often stored or otherwise held in humidors, which can provide favorable humidity and temperature levels for storing cigars.

20 In a retail environment where cigars are sold, such as a grocery store, a tobacco store, a bar, or a restaurant, space is often at a premium. It is often important that the

space devoted to something (e.g. a product), especially large amounts of space, is profitable and/or drives customer experience which leads to sales.

Traditionally, cigars have predominantly been displayed in their boxes in humidors. The boxes often either lie flat on shelving, or at a slight angle, with the lid of the box open to display the product to consumers. A challenge with storing cigars either flat or nearly flat is that the space above the shelf is essentially “dead air,” and is valuable space that is lost.

V. BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is a top front right exploded perspective view of an embodiment described herein.

Figure 2 is a top front right perspective view of an embodiment described herein.

Figure 3 is a top front right perspective view of an embodiment described herein.

Figure 4 is a front view of an embodiment described herein.

Figure 5 is a front view of an embodiment described herein.

Figure 6 is a top front right exploded perspective view of an embodiment described herein.

Figure 7 is a top front right perspective view of an embodiment described herein.

Figure 8 is a bottom front right perspective view of an embodiment described herein.

Figure 9 is a top front left exploded perspective view of an embodiment described herein.

Figure 10 is a bottom front right exploded perspective view of an embodiment described herein.

Figure 11 is a front exploded view of an embodiment described herein.

Figure 12 is a back exploded view of an embodiment described herein.

Figure 13 is a top exploded view of an embodiment described herein.

Figure 14 is bottom exploded view of an embodiment described herein.

Figure 15 is a left side exploded view of an embodiment described herein.

5 Figure 16 is a right side exploded view of an embodiment described herein.

Figure 17 is a top front right exploded perspective view of an embodiment described herein.

Figure 18 is a front view of an embodiment described herein.

Figure 19 is a back view of an embodiment described herein.

10 Figure 20 is a top view of an embodiment described herein.

Figure 21 is a bottom view of an embodiment described herein.

Figure 22 is a left side view of an embodiment described herein.

Figure 23 is a right side view of an embodiment described herein.

Figure 24 is a top front right perspective view of an embodiment described herein.

15 Figure 25 is a top front left perspective view of an embodiment described herein.

Figure 26 is a top back left perspective view of an embodiment described herein.

Figure 27 is a top front left perspective view of an embodiment described herein.

Figure 28 is a top back left perspective view of an embodiment described herein.

20 Figure 29 is a bottom front left perspective view of an embodiment described herein.

VI. DETAILED DESCRIPTION

As required, detailed embodiments of the present invention are disclosed herein.

However, it is to be understood that the disclosed embodiments are merely exemplary of the invention, which can be embodied in various forms. As such, any feature(s) used in

one embodiment can be used in another embodiment. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriately detailed structure.

5 Further, the terms and phrases used herein are not intended to be limiting, but rather, to provide an understandable description of the invention. While the specification concludes with claims defining the features of the invention that are regarded as novel, it is believed that the invention will be better understood from a consideration of the following description in conjunction with the drawing figures, in which like reference
10 numerals are carried forward.

Alternate embodiments may be devised without departing from the spirit or the scope of the invention. Additionally, well-known elements of exemplary embodiments of the invention will not be described in detail or will be omitted so as not to obscure the relevant details of the invention.

15 Before the present invention is disclosed and described, it is to be understood that the terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting. The terms “a” or “an,” as used herein, are defined as one or more than one. The term “plurality,” as used herein, is defined as two or more than two. The term “another,” as used herein, is defined as at least a second or more.
20 The terms “including” and/or “having,” as used herein, are defined as comprising (i.e., open language). The terms “connected” and/or “coupled,” as used herein, are defined as connected, although not necessarily directly, and not necessarily mechanically.

Relational terms such as first and second, top and bottom, and the like may be used solely to distinguish one entity or action from another entity or action without necessarily requiring or implying any actual such relationship or order between such entities or actions. The terms “comprises,” “comprising,” or any other variation thereof
5 are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. An element preceded by “comprises . . . a” does not, without more constraints, preclude the existence of additional identical elements in the process,
10 method, article, or apparatus that comprises the element.

As used herein, the term “about” or “approximately” applies to all numeric values, whether or not explicitly indicated. These terms generally refer to a range of numbers that one of skill in the art would consider equivalent to the recited values (i.e., having the same function or result). In many instances these terms may include numbers
15 that are rounded to the nearest significant figure.

Herein various embodiments of the present invention are described. In many of the different embodiments, features are similar. Therefore, to avoid redundancy, repetitive description of these similar features may not be made in some circumstances. It shall be understood, however, that description of a first-appearing feature applies to the
20 later described similar feature and each respective description, therefore, is to be incorporated therein without such repetition.

Described now are exemplary embodiments of the present invention. Referring now to the drawings, beginning with Figs. 1 to 7, an exemplary embodiment of a product

holding apparatus 10 is shown. In an embodiment, the product holding apparatus 10 can include a humidor 12. One or more pusher mechanisms 14 can be located in the humidor 12. A pusher mechanism is shown, for example, in Figs. 8 to 24.

In an embodiment, the pusher mechanism 14 can include a channel 16. In some
5 embodiments, the channel 16 has a width 18 (see Figs. 4 and 5) that can be adjusted, which, for example, can be used in order to allow the channel to accommodate products of varying widths. For example, as shown in Fig. 4, the width 18 of the channel 16 has been adjusted to have a larger width (e.g. 1.150 inches). In comparison, in Fig. 5, the width 18 of the channel 16 has been adjusted to have a smaller width (e.g. .700 inches).
10 In an embodiment, the width 18 of the channel 16 is adjustable from a width of about 1.150 inches (29.21 millimeters) to a width of about .700 inches (17.78 millimeters).

As shown in Figs. 2, 3, and 7, in an embodiment the product holding apparatus 10 can hold products 20, such as cigars, tubos containing cigars, tobacco accessories, or other products. In an embodiment, tobacco accessories can include items such as butane
15 cylinders, lighters, cigar cutters, matches, or other accessories. As used herein, holding products can include holding, displaying, and/or dispensing products. In the embodiment depicted in Fig. 2, a humidor 12 is shown which contains multiple tubos 22 of various widths. In Figs. 3 and 7, in addition to tubos 22, the products shown also include butane cylinders 24.

20 Referring to Figs. 1 and 8 to 24, the pusher mechanism 14 can include a first side member (e.g. left side member 15) and a second side member (e.g. right side member 17), with the space between the left side member 15 and the right side member 17 defining the channel 16. The pusher mechanism 14 can also include a channel width

adjustment mechanism 26, which can be used to adjust the width 18 of the channel 16. The channel width adjustment mechanism 26 can include one or more series of ridges and grooves 28 on the left side member 15, and one or more series of ridges and grooves 28 on the right side member 17. In an embodiment, when the pusher mechanism 14 is assembled (see e.g. Figs. 8 and 18 to 24), ridges and grooves 28 on the right side member 17 can engage with complimentary ridges and grooves 28 on the left side member 15 in a ratcheting manner, thus allowing the width 18 of the channel 16 to be adjusted by moving the left side member 15 and the right side member 17 towards each other or away from each other.

The channel width adjustment mechanism 26 can also include slits 30 on the left side member 15, and complimentary pins 32 on the right side member 17. In embodiments where the pusher mechanism 14 is assembled, the pins 32 engage with the slits 30, with the pins 32 traveling through the slits 30 as the width 18 of the channel 16 is adjusted. In an embodiment, the slits 30 and corresponding pins 32 can prevent the width 18 of the channel 16 from being adjusted beyond a certain maximum width, since when the pin 32 reaches the end of the slit 30 (as shown e.g. in Fig. 21), the pin 32 contacts the end of the slit 30 and thereby prevents the left side member 15 and the right side member 17 from being moved any further apart from each other.

In an embodiment, the pusher mechanism 14 can include a spring loaded pusher system that can be used to push products 20 from the rear of the channel 16 towards the front of the channel 16. For example, referring to the embodiments depicted in Figs. 1 and 9 to 29, the pusher mechanism 14 can include a pusher tab 34 that is slidably engaged with a track 36, such that the pusher tab 34 can slide along the track 36 between the front

38 of the track 36 and the rear 40 of the track 36. In the embodiments depicted in Figs. 1, 20, 24, and 28, the pusher tab 34 is located near the front 38 of the track 36. In the embodiments depicted in Figs. 6, 9, 13, 17, 25, and 26, the pusher tab 34 is located near the rear 40 of the track 36. A spring 42 (shown in Figs. 19 and 25 to 29) can be engaged
5 between the pusher tab 34 and the track 36, such that the force exerted by the spring 42 biases the pusher tab 34 to slide towards the front 38 of the track 36.

Referring to Figs. 19 and 25 to 29, the spring 42 can be a variable force coil spring. A first end of the spring 42, along with a coiled portion of the spring 42, is housed in a cavity 44 in the rear side of the pusher tab 34. From there, as the spring 42
10 uncoils, the spring 42 first travels through an aperture 46, and then extends along the top surface of the track 36. As the spring approaches the front 38 of the track 36, the spring passes through an opening 47 in the top surface of the track. The spring 42 then extends along the bottom surface of the track 36 to a point where the second end of the spring 42 attaches to a mounting post 48 that is secured to the bottom surface of the track (as shown
15 in Fig. 29).

In an embodiment, the spring 42 can be a variable force spring, such that the force exerted by the spring 42 decreases as the pusher tab 34 moves towards the front 38 of the track 36. For example, in operation, each time a product 20 is removed from the channel 16, the amount of products 20 that remains within the channel 16 is decreased (and
20 therefore the combined weight of the products 20 within the channel 16 is reduced). The variable force spring 42 can account for the reducing weight of the products 20, since the force exerted by the spring 42 is reduced as products 20 are removed from the channel 16 and the pusher tab 34 moves towards the front of the channel 16. In an embodiment, the

spring 42 can be removed from the pusher mechanism 14 and replaced with a stronger or weaker spring in order to accommodate heavier or lighter products 20 that may be housed within the channel 16.

In an embodiment, the pusher mechanism 14 can include a ramp 50 at the end of the track 36 that can force a product 20 in an upward direction as the product 20 is moved towards the front 38 of the track 36. The pusher mechanism can also include guide ribs 52 on the left side member 15 and the right side member 17, which can assist in guiding a product 20 as it slides through the channel 16. The guide ribs 52 can also allow irregular shaped products 20, such as a tubo with a cylinder diameter of e.g. 1.0 inches and a cap diameter of e.g. 1.1 inches, to slide through the channel 16 with the guide ribs 52 contacting the cylinder portion of the tubo and thereby providing clearance space between the left side member 15 and the right side member 17 for the wider cap portion of the tubo.

In an embodiment, such as an embodiment where one or more pusher mechanisms 14 are located within a humidor 12, a mounting plate 54 can be secured to the shelf of a humidor 12, for example with screws 56. One or more pusher mechanisms 14 can be aligned and secured within the humidor 12 by placing the pusher mechanism 14 onto the mounting plate 54, such that the vertical tab 58 of the mounting plate 54 rests in and engages with a slot 60 of the pusher mechanism 14. The humidor 12 can also include an angled platform 62, which can be used, for example, to display a box of cigars within the humidor 12 by placing a box of cigars on the angled platform 62. As shown in Figs. 1, 2, and 7, the humidor 12 can also include a banner attachment 64 which can be

secured to a shelf of the humidor 12. In an embodiment, the banner attachment 64 can be used to display advertising or other marketing materials.

In an embodiment, the humidor 12 can include one or more sensors for detecting certain conditions, and can include the capability communicating with a remote location via wired or wireless communication means. For example, the humidor 12 can include sensor(s) which can determine the amount of product 20 remaining in the humidor, and can transmit a signal to a remote location in the event that the amount of a product 20 remaining in the humidor 12 dips below a preset level. As another example, the humidor 12 can also include sensor(s) which can monitor the level of humidity in the humidor 12, and can transmit a signal to a remote location in the event that level of humidity within the humidor moves above or below certain preset levels.

In operation of an embodiment, a humidor 12 is fitted with multiple pusher mechanisms 14 by securing the slot 60 of the pusher mechanism to the vertical tab 58 of the mounting plate 54. For example, as shown in Fig. 2, 8 pusher mechanisms 14 are secured to the bottom shelf of the humidor 12, 17 pusher mechanisms 14 are secured to the middle shelf of the humidor 12, and 16 pusher mechanisms are secured to the top shelf of the humidor 12. A variety of products 20, for example tubos 22, are then selected to be housed within the humidor 12. For example, in Figure 2, four different types (e.g. brands) of tubos 22 have been selected for the bottom shelf of the humidor 12. Starting from the left, the first type of tubos 22 are housed within the first and second pusher mechanisms 14, the second type of tubos 22 are housed within the third and fourth pusher mechanisms 14, the third type of tubos 22 are housed within the fifth and sixth

pusher mechanisms 14, and the fourth type of tubos 22 are housed within the seventh and eighth pusher mechanisms 14.

On the bottom shelf of Fig. 2, each type of tubo 22 has a width that is different from the other three types. Prior to placing the tubos 20 within the channel 16 of a given pusher mechanism 14, the width 18 of the channel 16 is adjusted (as described above) to account for the width of the particular type of tubo 22 that will be housed within the channel 16. Similarly, the width 18 of the channels 16 of the remaining pusher mechanisms 14 is adjusted to account for the width of the particular types of tubos 22 that will be housed within those channels 16. A series of tubos 22 (e.g. 20 tubos) of the same type are then loaded into the channel 16 of a given pusher mechanism 14, with the series of tubos 22 being arranged vertically in a line from the front 38 of the track 36 towards the rear 48 of the track 36, with the last (i.e. rear) tubo 22 in the line being in contact with the pusher tab 34. In such an arrangement, the spring 42 – via the pusher tab 34 – biases the entire line of tubos 22 towards the front 38 of the track. In operation, as a user (e.g. a customer, employee, or other individual) removes the first (e.g. front) tubo 22 in the line from the channel 16, the pusher tab 34 pushes the remaining tubos 22 in the line towards the front 38 of the track 36 until the next tubo 22 in the line is forced up the ramp 50 and reaches the front end of the track 36. By this process, in an embodiment, tubos 22 will always be positioned at the front end of the track 36 (and therefore will be displayed as close as possible to the front of the humidor 12), until the last tubo 22 in the line is removed from the channel 16.

The foregoing description and accompanying drawings illustrate the principles, exemplary embodiments, and modes of operation of the invention. However, the

invention should not be construed as being limited to the particular embodiments discussed above. Additional variations of the embodiments discussed above will be appreciated by those skilled in the art and the above-described embodiments should be regarded as illustrative rather than restrictive. Accordingly, it should be appreciated that

5 variations to those embodiments can be made by those skilled in the art without departing from the scope of the invention.

CLAIMS

I claim:

1. An apparatus for holding a product comprising:
 - a) a humidor;
 - b) a pusher mechanism located within said humidor, said pusher mechanism having a width adjustable channel; and
 - c) a plurality of cigar tubos located within said channel,wherein said pusher mechanism further comprises a first side member and a second side member, with a space between said first side member and said second side member defining said channel, said first side member and said second side member each comprise a least one ridge and at least one groove, said ridge of said first side member being engaged with said groove of said second side member, and said ridge of said second side member being engaged with said groove of said first side member.
2. The apparatus for holding a product of claim 1 wherein said pusher mechanism further comprises a channel width adjustment mechanism.
3. The apparatus for holding a product of claim 1 wherein said first side member comprises a slit and said second side member comprises a pin, said pin being slidably engaged with said slit.
4. The apparatus for holding a product of claim 3, wherein said slit further comprises a slit end, such that a contact of said pin with said slit end provides a limit to a width of which said channel is capable of being adjusted.
5. The apparatus for holding a product of claim 1 wherein said first side member comprises a first guide rib, and said second side member comprises a second guide rib.

6. The apparatus for holding a product of claim 1 wherein said pusher mechanism further comprises a track, said track extending along a length of said channel.
7. The apparatus for holding a product of claim 6 further comprising a ramp at an end of said track.
8. The apparatus for holding a product of claim 6 further comprising a pusher tab, said pusher tab being slidably engaged with said track.
9. The apparatus for holding a product of claim 8 further comprising a variable force coil spring, said variable force coil spring being engaged with said pusher tab.
10. The apparatus for holding a product of claim 9 wherein said variable force coil spring biases said plurality of cigar tubos towards an end of said track.
11. The apparatus for holding a product of claim 10 wherein a force exerted by said variable force coil spring on said pusher tab decreases as said pusher tab moves towards said end of said track.
12. The apparatus for holding a product of claim 1 wherein said plurality of cigar tubos are oriented vertically in said channel.
13. The apparatus for holding a product of claim 12 wherein said plurality of cigar tubos are oriented in a substantially straight line in said channel.
14. An apparatus for holding a product comprising:
 - a) a humidor; and
 - b) a pusher mechanism located within said humidor, said pusher mechanism having a channel, said channel being configured to hold a plurality of cigar tubos,

wherein said pusher mechanism further comprises a first side member having a first guide rib, and a second side member having a second side rib

15. The apparatus for holding a product of claim 14, wherein a width of said channel is adjustable.