Nov. 18, 1941. J. F. URBANEK 2,263,057

DISPLAY AND VENDING CASE

Filed Sept. 30, 1937 3 Sheets-Sheet 1

Fig. 1.

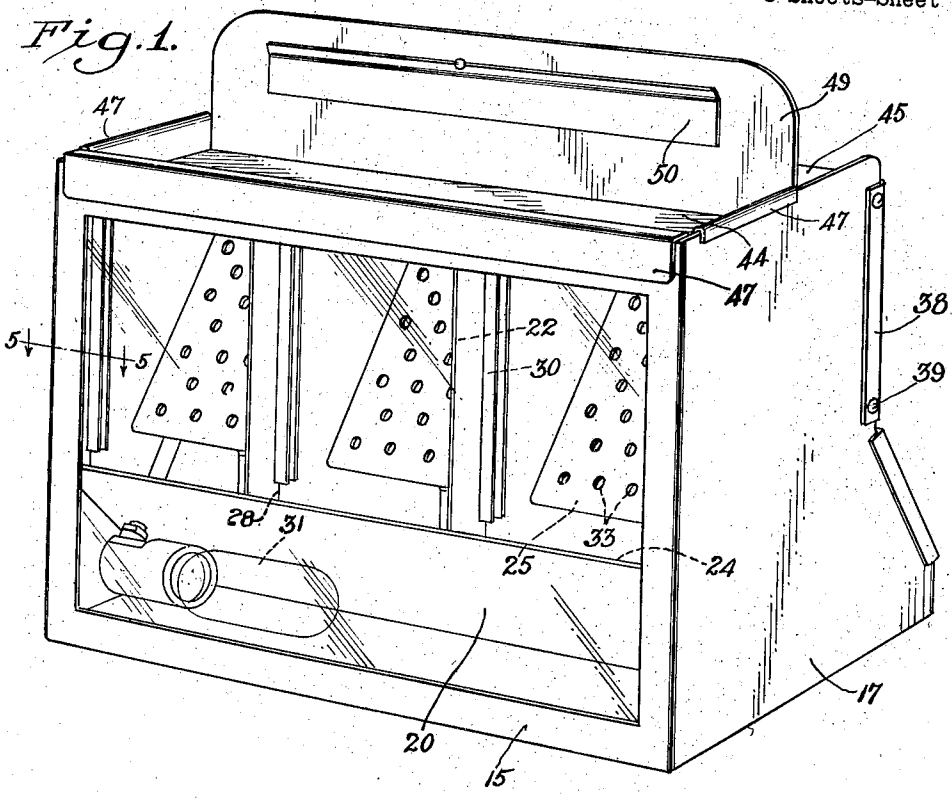
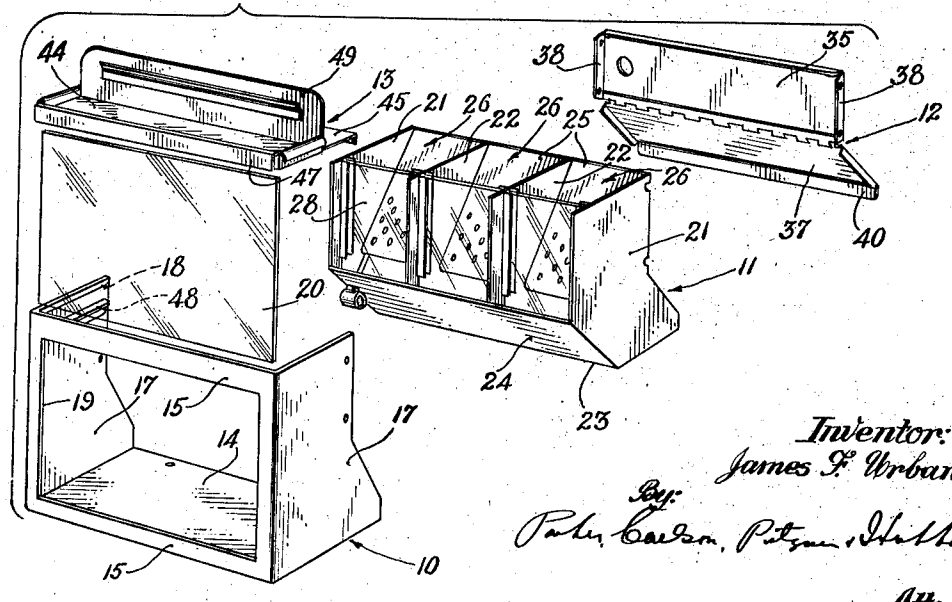


Fig. 2.



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Fig. 3.

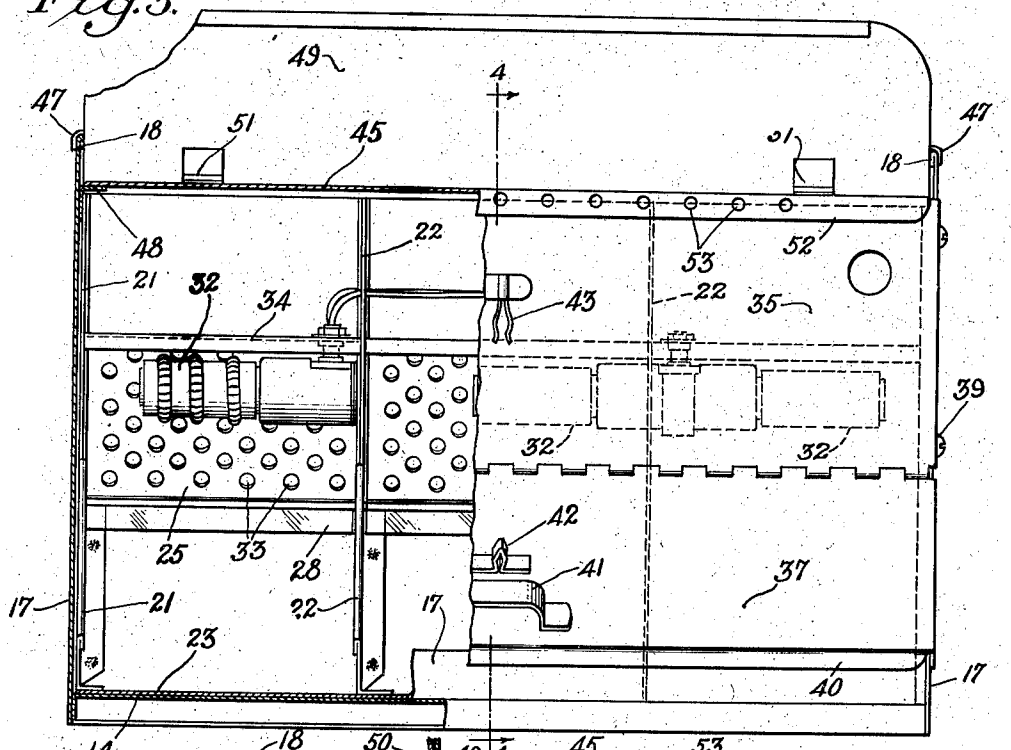


Fig. 4.

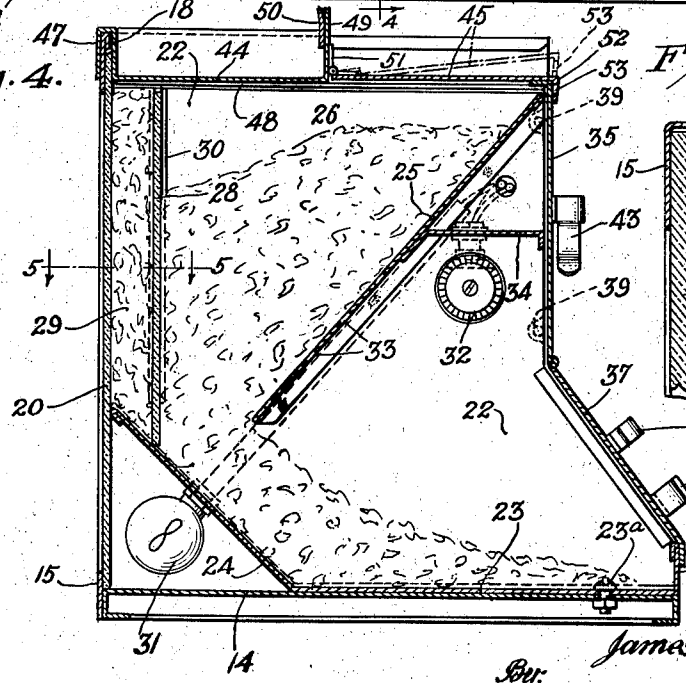
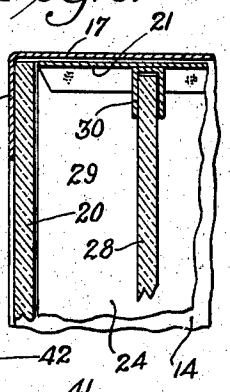


Fig. 5.



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Fig. 6.

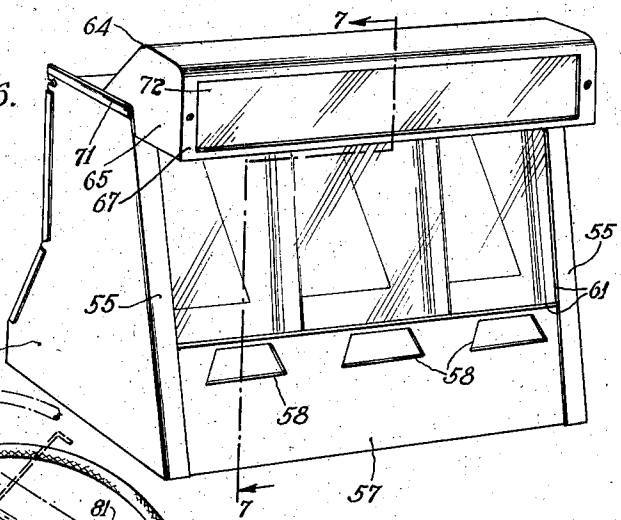


Fig. 7.

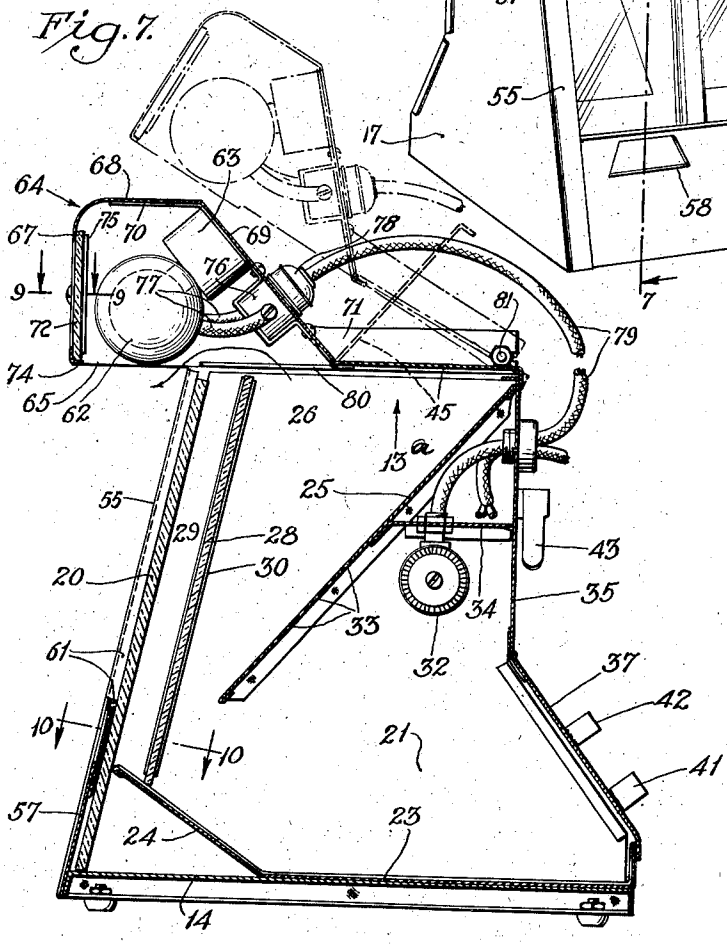


Fig. 8.

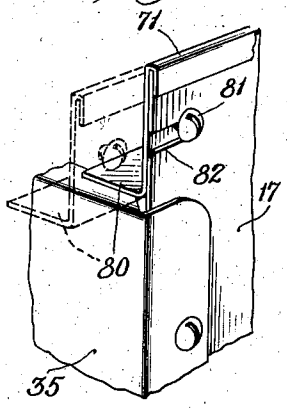


Fig. 9.

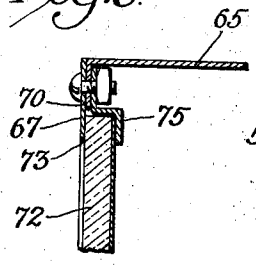
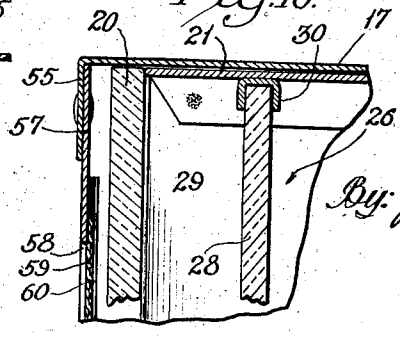


Fig. 10.



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UNITED STATES PATENT OFFICE

2,263,057

DISPLAY AND VENDING CASE

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Application September 30, 1937, Serial No. 166,541

6 Claims. (Cl. 34—88)

This invention relates to improvements in display and vending cases for retail trade and more particularly concerns such a case having a novel hopper construction for the sale of goods in bulk, as for example toasted nuts.

One object of the invention is to provide a new and improved case of this character in which an enclosing casing has confined therein a unitary hopper structure including one or more hopper bins to which access may readily be had through the top of the casing for the purpose of filling the same and through the back of the casing for vending purposes.

Another object is to provide a display case comprising an external casing structure and a hopper unit therein which is readily separable from the casing so that all parts may be easily cleaned.

Another object is to provide such a case in which the enclosure has a display window in the front wall thereof and the hopper structure has means coacting with the window to produce one or more pockets for receiving a portion of the bulk goods to form a constant display separated from the variable contents in the hopper.

Another object is to provide a new hopper type display case including a casing having a large window opening closed by a suitable window pane held in position by the hopper unit within the case.

Another object resides in the provision of an improved case for vending bulk goods such as nuts from a hopper and which includes heat radiating means for warming the nuts in the hopper and especially those that are next to be withdrawn from the case.

A further object is to provide a novel case of this character having a front wall including a large transparent window divided by the hopper structure into two parts, one for displaying the goods for sale and the other for advertising display.

Still another object resides in the provision of a hopper case of this character having a novel top closure construction.

An additional object is to provide a novel display and vending case in which the front wall is of a novel, rearwardly slanting construction and the top closure includes novel means for illuminating the front of said wall and the merchandise behind the window thereof.

Other objects and advantages will become apparent in the following description and from the accompanying drawings in which:

Figure 1 is a perspective view of a display and vending case embodying the invention.

Fig. 2 is an exploded perspective view on a reduced scale showing unassembled the several units which fit together to form the case.

Fig. 3 is a rear elevational view with parts broken away to show details of the interior construction of the case.

Fig. 4 is a transverse sectional view in elevation taken substantially in the plane of line 4—4 of Fig. 3.

Fig. 5 is an enlarged fragmentary sectional plan view taken substantially in the plane of line 5—5 in Fig. 4.

Fig. 6 is a perspective view of a slightly modified form of construction.

Fig. 7 is a sectional view taken substantially along line 7—7 of Fig. 6.

Fig. 8 is an enlarged fragmentary perspective view showing details of one upper rear corner of the case illustrated in Figs. 6 and 7.

Figs. 9 and 10 are fragmentary detail plan views taken in the planes of lines 9—9 and 10—10, respectively, of Fig. 7.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawings and will herein describe in detail, the preferred embodiments, but it is to be understood that I do not thereby intend to limit the invention to the specific forms disclosed, but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

In a preferred form of the invention, a small number of units are constructed to be quickly and easily fitted together in a minimum of assembly operations to produce a compact sanitary and efficient display and vending hopper. Accordingly, a casing shell unit is provided which is open at the top and back and which has a front wall consisting largely of a window. Within the shell is mounted a hopper unit having a plurality of hopper bins, and the top and back of the shell are enclosed by removable top and back units provided with doors through which access is given to the hopper bins for, respectively, filling and vending purposes. An attractive constant display of the goods on sale is maintained within display pockets back of the front wall window independently of the variable bulk of the goods in the hopper bins. In the window below the pockets may be an illuminated advertisement. Although the case is adapted for various kinds of bulk goods it is eminently suitable for retail sale

of nut meats which may be kept in a fresh and appetizing condition by heating the same thoroughly within the case before sale.

Referring more particularly to the drawings, the display and vending case includes generally (Fig. 2) a shell 10 having the top and back thereof open and forming the body unit of the casing for enclosing the case. Within this body shell is mounted an upright hopper unit 11; and the back and top of the shell are enclosed by a back unit 12 and a top unit 13, respectively. All of the several units may be separately fabricated from suitable sheet metal parts which are bent to shape and welded or otherwise secured in the necessary relationships.

The body shell 10 in the present instance serves as the principal supporting means of the case and is provided with a generally rectangular, inverted pan-shaped base 14 from which rise a flat front wall 15 and spaced parallel side walls 17. Preferably the front and side walls are formed of a single U-shaped sheet of metal and an inturned retrovert flange 18 reinforces the top edges thereof. As shown, the side walls 17 may be formed narrower at the top and wider at the bottom, with the upper edge of the wider portion extending forwardly at a slant to meet the rear edge of the narrow portion.

Framed by the front wall is a large window opening 19 which is closed by a window pane 20 lying flush with the inner face of the wall below the reinforcing flange 18 and resting at its lower edge upon the adjoining portion of the base 14.

The hopper unit 11 is dimensioned to fit snugly within the casing shell 10 and includes a plurality of individual compartments or hopper bins in which several varieties of nuts may be stored. In constructing the hopper unit a plurality of similarly dimensioned side wall panels 21 and dividers or partition panels 22 are mounted vertically in equally spaced parallel relation upon a bottom wall 23 to form separated bin spaces. Herein a pair of side walls and a pair of partitions combine to form three equally dimensioned bin spaces, but the number and dimensions of the bin spaces may, of course, be varied to suit requirements.

Throughout its major area, the bottom wall 23 is horizontally arranged to rest upon the base 14 and may be secured thereto by bolts 23a; but a substantial forward portion 24 of the bottom wall is inclined upwardly and forwardly at approximately forty-five degrees to meet the forward edges of the side wall panels 21 and the partition panels 22 in a horizontal plane substantially spaced from the top edges of the panels.

Slanting upwardly and rearwardly in each bin space, substantially perpendicularly from an intermediate point of the inclined bottom portion 24, is a hopper plate 25. Herein this plate has its lower edge in predetermined edgewise spaced relation to the inclined bottom portion and its top edge near the top rear corners of the vertical bin panels between which it is secured.

After the hopper unit 11 is positioned within the body shell 10, it serves to hold the window pane in place. For this purpose the forward vertical edges of the end wall plates 21 and the partition plates 22 and the forward edge of the inclined bottom portion 24 may either or all bear against the inner face of the window pane 20. In this way the window pane will be held against movement backwardly from the front wall 15 or upwardly past the overhanging reinforcing flange 18.

The horizontal forward edge of the inclined bottom portion 24 meets the window pane 20 along a line substantially below the top of the pane and preferably slightly below the horizontal center thereof. Through this arrangement the window pane 20 coacts with the bottom portion 24 to form the front walls of hopper bins 26, the hopper plates 25 forming the rear walls thereof. Bulk nuts are placed into the hopper bins 26 at the top and feed in controlled flow downwardly and rearwardly through the limited space between the edges of the respective hopper plates 25 and the inclined bottom portion 24 in a relatively thin layer onto the horizontal rear portion of bottom wall 23 in the substantial spaces below the hopper plates. The rear portion of the bottom wall 23 forms a tray from which the nuts may be easily scooped up for sale and has a retaining flange or curb 27 along the rear edge thereof.

The nuts stored in each of the hopper bins 26 may be viewed through the window 20. However, as sales are made the quantity of nuts will vary, and the invention therefore contemplates the provision of flat vertical bulkheads such as glass plates 28 mounted in limited rearwardly spaced parallel relation to the window 20 to provide pockets 29 for receiving constant displays of nuts separated from the bulk in the several hopper bins 26. Herein the bulkhead plates 28 are slidably received within opposed vertical channel guides 30 mounted upon the inner faces of the end walls 21 and partition panels 22 of the hopper bins 26 and rest at their lower edges upon the inclined bottom wall portion 24. The display thus provided will be unaffected by variation in the bulk of the nuts behind the bulkheads. When it is desired to remove the bulkhead plates 28 as for removing the nuts in the pockets 29 the plates may easily be slid up in their guides 30, the nuts dropping back into the hopper bins.

A further advantage of the bulkheads 28 is that should the window 20 be accidentally broken or require replacement, the principal bulk of nuts in the hopper bins will not be contaminated or spilled, the only possible loss being of the small quantities of nuts in the display pockets 29. Moreover, the hopper unit 11 may be shifted out of the casing shell 10 and replaced without disturbing the nuts in the hopper bins.

A window space below the meeting edge of the inclined bottom portion 24 may be utilized for display advertising purposes and if desired an electric light 31 may be suitably mounted in the triangular compartment below the inclined portion. Preferably the socket for the light is carried by the inclined bottom portion 24.

Nut meats to be most palatable should be freshly toasted and most kinds of nuts are possessed of the best flavor when warm. Accordingly, a radiant electric heater 32 is mounted below each hopper plate 25 and in such a position that the heat radiating therefrom will be directed in part toward the nuts in the lower portion of the associated hopper plate but primarily downwardly upon the nuts within the tray therebelow, thus assuring that the nuts which are next to be sold will be thoroughly warmed. Because the layer of nuts fed to the bottom tray 23 is fairly thin warming thereof is facilitated. To facilitate passage of heat toward the nuts in the lower portions of the hopper bins 26, the hopper plates 25 may be perforated as shown at 33.

Narrow horizontal shelves 34 mounted below the top edges of the hopper plates 25 support the heaters 32 therebelow. These shelves 34 may have polished under surfaces opposing the heaters 32 for reflecting downwardly upon the nuts in the tray therebelow radiant heat which is directed upwardly from the heaters. The several reflector shelves 34 are alined to provide a partitioned duct thereabove for receiving the necessary electric wires and the like for the heaters.

Following placement of the unit 11 in the assembly, the rear closure unit 12 is secured in position. This closure unit includes an upper section 35 arranged to be mounted fixedly and a hingedly connected lower or door section 37. The upper section has end flanges 38 which embrace and are secured to the vertical rear margins of the side walls 17 by means of screws 39. The door section 37 loosely engages the slanting rear edges of the side walls 17 and has a flange 40 along its lower edge which in closed position overlaps the curb 27. A handle 41 permits the door section 37 to be opened easily to give access to the delivery end of the hoppers, and a detent 42 and a spring clip 43 form a friction catch by which the door section 37 may be held open against the fixed section 35.

The top closure unit 13 completes the assembly and in the present instance comprises connected front and rear portions 44 and 45, respectively, the unit being removably mounted in closing relation to the hopper unit 11. As shown the front portion 44 is dimensioned to provide a tray of substantial depth adapted for receiving packaged merchandise for display. The tray has open retrovert flanges 47 along the front and sides thereof for engaging the upper margins of the front wall 15 and the side walls 17 of the body shell 10, such walls extending sufficiently above the top of the hopper unit 11 for this purpose. If desired, the side walls 17 may be provided with shelf angles 48 which overlie the hopper side wall panels 21 and upon which the bottom of the tray 44 may rest. At the rear, the tray 44 may have an upstanding back plate 49 carrying a price card holding strip 50 on its front face. When it is desired to gain access to the display pockets 29 which open upwardly below the tray 44 the latter may easily be lifted away.

Hinges 51 connect the door portion 45 substantially in the plane of the bottom of the tray 44 so that the door portion may be swung upwardly to give access to the tops of the hopper bins 26 for filling the same.

Along its rear edge, the door portion 45 has a substantially right-angle flange 52 adapted in the fully closed position of the door portion to frictionally overlap the top margin of the fixed back section 35. A series of spaced openings 53 in the flange 52 will be closed in the overlapped position of the flange, but when the rear edge of the door portion is raised will permit ventilation through the openings from the interior of the hopper. As a result of the frictional engagement between the flange 52 and the top margin of the section 35, the flange will be held in ventilating position as indicated in broken outline in Fig. 4, when the door 45 is first dropped toward closed position and until the flange is forced into the overlapping position thereof by pressing down upon the door.

Cleaning of the interior of the case is made easy by removing the top closure unit 13 and by opening the rear door 37, or by removing the hopper unit 11 from the casing. Furthermore, the interior surfaces which may require cleaning are generally plane areas which are preferably of smooth finish whereby to facilitate the maintenance of an unsoiled and sanitary condition.

Where the exterior surfaces of the case are not formed of a material such as stainless steel which will keep a natural finish, they may be pleasingly finished by painting, enameling, or the like, or they may be suitably plated as with chromium and polished. In finishing by plating or spray painting, the present construction is particularly advantageous and time saving because the body shell 10 and the back and top sections 12 and 13 may be treated without masking or other protective measures, for the only surfaces which it may not be desired to treat are contained in the hopper unit 11 with which the other units are assembled after treatment.

Having reference now to the modified form of the invention shown in Figs. 6 to 10, inclusive, it will be seen that the construction is fundamentally the same as just described. Therefore, in describing this modified form, the similarly constructed, generic elements of structure will, when necessary, be referred to only incidentally by the preceding numerals of reference. Notably, however, the modified case has a rearwardly inclined front wall and a hooded top closure structure which embody novel features and will require a detailed description.

As shown in Figs. 6, 7, and 10, the slanting front wall is formed in part by narrow right angular flanges 55 extending inwardly from the forward edges of the side walls 17 of the outer casing and lying in a common rearwardly inclined plane. To complete the front wall, there is secured between the lower portions of the flanges 55 and attached along its lower margins to the base 14, a horizontally elongated plate 57 which is of a width to extend in concealing relation above the front edge of the upwardly inclined portion 24 of the hopper bottom. The upper edge of the plate 57 and the inner edges of the flanges 55 define the outline of the window opening which is closed by the window pane 20 through which the interior of the case may be viewed by prospective purchasers.

Means may be provided on the front wall plate 57 for receiving and displaying price cards or the like. To this end the plate is provided with a horizontal series of apertures 58, one aperture for each hopper bin 26. Through these apertures may be viewed appropriate cards 59 supported by suitable flexible holders 60 which are secured to the inner wall of the plate 57. The necessary spacing between the plate 57 and the window pane 20 to accommodate the card holders 60 is effected by suitable inturned flanges 61 which are formed on the window framing edges of the front wall flanges 55 and the plate 57 and bear inwardly against the outer face of the window pane. In addition to their function as spacers, the flanges 61 serve to provide a fairly snug joint between the window pane 20 and the front wall frame and to conceal the raw edges of such frame.

In order to illuminate the merchandise such as buttered, toasted nut meats behind the window pane 20, one or more electric lamps 62 may be mounted above and forwardly of the slanting front wall of the case so that the light rays from the lamp will pass downwardly and through the window. As shown in Fig. 7, the lamp 62 is carried in a socket 63 which is suitably mounted

within and upon one wall of a forwardly projecting, downwardly opening hood **64**. Herein this hood forms the front portion of the upper closure **13a** and extends across substantially the entire front of the case in such a manner that the lamp **62** is concealed from direct view of a person standing in front of the display, but the full effect of the light and heat from the lamp are directed downwardly to illuminate and warm the nuts within the case. As a result, the heat will soften or liquefy the fat on the nut meats stored in the display pockets **29** and the light will cause the same to glisten attractively.

As illustrated (Figs. 6 and 7), the hood **64** has vertical side walls **65**, a vertical front wall **67** disposed substantially in a plane with the forward edge of the base **14**, a narrow top wall **68** merging on a radius with the front wall **67**, and a back wall **69** which slants angularly rearwardly and downwardly from the top wall **68** into overlying relation to substantial front portions of the hopper bins **26** which open up thereunder. The front, top and back walls of the hood may be formed of a single sheet of metal and secured to inturned connecting flanges **70** formed on the edges of the side walls **65**. To support the hood, channel-shaped hanger bars **71** are secured to the side walls **65** and extend rearwardly therefrom to engage the top edges of the side wall **17** on the outer casing.

A translucent glass plate or other suitable sign **72** may be mounted within an opening **73** in the front wall **67** of the hood. The sign plate is supported by a lower inturned flange **74** upon the wall **67** and is held in place by suitable means such as bolted hanger brackets **75** (Fig. 9). Upon the back wall **68** of the hood is mounted an electric inlet socket **76** which is suitably connected with the lamp socket **63** by means of electric leads **77**. The socket **76** is adapted to receive a detachable electric plug **78** carried by an electric current supply cable **79**.

Hingedly connected to the lower edge of the back wall **69** of the hood is the rear door portion **45** which forms a supplementary part of the main top closure and which may be opened as shown in broken outline to fill the hopper bins **26**. When closed, the door **45** rests upon inturned flanges **80** formed upon the lower edges of the hanger bars **71**. This door serves together with the back wall **69** to deflect the heated air which rises to the top of the case out through the open front portions of the hopper bins **26** which open into the hood **64**, the path of the air being indicated in Fig. 7. Thus, the heated air will pass out from under the hood in front of the case, and the delectable aroma of the toasted nuts will pervade the surrounding atmosphere in a manner to serve as an additional inducement to prospective purchasers.

Preferably the top closure **13** of the modified form of construction is mounted to be either entirely removed as a unit or to be opened for access to the front interior of the case by swinging the hood **64** upwardly as shown in broken outline in Fig. 7. For this purpose, the rear ends of the hanger bars **71** are pivotally connected as by means of screw bolts **81** to the top rear corners of the side walls **17** in the outer casing (Fig. 8).

To avoid the necessity of removing the bolts **81** when it is desired to put the top closure **13a** in position upon the case, or to remove the same entirely away from the case, slots **82** are formed in the wall **17** to receive the shanks of the bolts **81** when the closure is shifted with a sliding motion in a rear to front direction. Thus, in assembling the top closure **13a** the hanger bars **71** are first fitted upon the runway provided by the top edges of the side wall **17**, the rear ends of the hanger overhang rearwardly as indicated in broken outline in Fig. 8. Thereupon, by sliding the top closure forwardly the shanks of the bolts **81** will enter the slots **82**, coming to a stop by abutment with the walls defining the inner ends of the slots. By tightening the bolts **81** accidental dislodgment of the top closure may be substantially avoided, but the hood **64** may nevertheless be swung upwardly when it becomes necessary to gain temporary access to the front portions of the hopper bins **26** or change the lamp **62**, or the like. In thus raising the hood, the door **45** will, of course, be tipped back with the closure unit, but will remain in its closing position to be raised independently to open position.

From the foregoing it will be apparent that the present invention provides a case of unusually neat, efficient and sturdy construction which is formed of interfitting parts that are simple to produce and which may be easily and quickly assembled or taken apart. Substantial quantities of several varieties of bulk goods may be attractively and appealingly displayed and effectively conditioned for sale.

I claim as my invention:

1. In combination in a case of the character described, an enclosure open at the top and having front, side and rear walls; hopper means within said enclosure for receiving a supply of bulk goods through the top thereof for feeding the goods in controlled flow downwardly, means within said enclosure for heating the goods in the hopper, and a top for said enclosure having a portion to be opened for filling said hopper means, said portion including a downturned flange having openings therein for venting heat from the top of the enclosure and being closable by bringing said flange into overlapping relation to the upper margin of said rear wall.

2. In combination in a display and vending case of the character described, a casing providing a receptacle for merchandise and having a front wall including a window opening defined by a narrow rearwardly turned flange, a window pane mounted behind said front wall for closing said opening, said pane being held in spaced relation to the plane of said front wall by said flange, an aperture in said front wall below said window opening, and means in the space between said front wall and said pane to support a price card or the like for display through said aperture.

3. In combination in a nut vending and display case, a casing having an upwardly and rearwardly slanting window in the front wall thereof, the interior of said casing being constructed and arranged to support nuts in a manner to lie back of said window, a top enclosure for said casing including a downwardly opening hood extending forwardly of the top edge of said window and being mounted to be opened for filling the case, and means within said hood for supporting electrical illuminating means, whereby the light and heat from said illuminating means will be directed through said slanting window upon the nuts behind the same.

4. A display and vending case of the character described comprising, in combination, an upright casing providing a receptacle for merchandise,

said casing being open at the top for filling the same and having an opening near the lower end of one wall thereof for vending access to the merchandise, means for closing said top supported by the upper ends of the casing walls, and means for pivotally connecting said closing means to said casing arranged to permit not only pivotal opening movement of said closing means but also to permit entire removal thereof by a shifting movement in one direction relative to said casing to separate said pivotal connecting means.

5. A display and vending case of the character described comprising, in combination, an upright open-top casing providing a receptacle for merchandise and having a front window through which the merchandise may be displayed, means for warming the merchandise within the casing, and a closure for the top of the casing including a hood overhanging said front window and providing a concealed ventilation opening from the interior of the casing.

6. In combination in a display and vending case of the character described, separable outer casing and inner self-contained hopper units, said casing including spaced parallel side walls and a front wall including a window, said hopper unit including a bottom wall and means for supporting bulk material for display through said window and for controlled flow rearwardly onto said bottom wall, a top closure for the casing adapted to be opened for filling the hopper unit, and a rear closure arrangement including an upper section removably secured to the rear edges of said side walls and a movably mounted lower section adapted to be swung open for sales access to the material on said bottom wall, said rear edges of the side walls having their upper portions disposed forwardly of the lower portions and said hopper unit having the lower rear portion thereof extending under said upper section of the rear wall closure whereby the hopper unit is substantially locked against removal from the casing as long as said upper section remains secured in place.

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