United States Patent [19]

Cosby

[11] **3,710,978**

[45] **Jan. 16, 1973**

[54] HEATED DISPENSING UNIT FOR CANS OF VISCOUS SUBSTANCES

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[21] Appl. No.: **107,931**

[52] **U.S. Cl.** ..... **221/150 A**

[51] **Int. Cl.** **A47f 1/08**

[58] **Field of Search** ...221/150 A, 155, 150 HC, 256, 221/257; 312/45, 72

[56] **References Cited**

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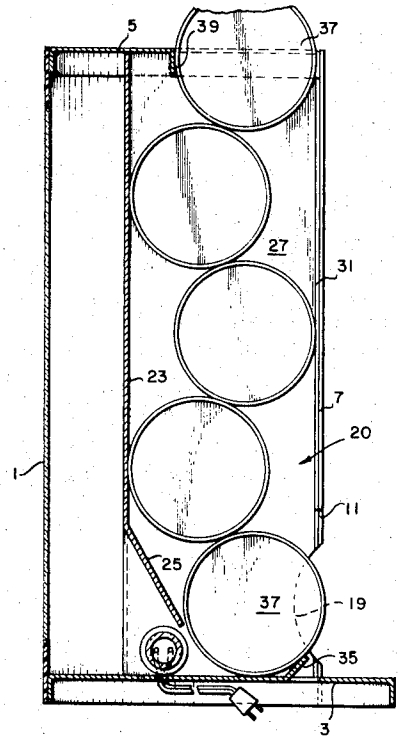
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[57] **ABSTRACT**

The invention is directed to a dispensing cabinet having an article chute from which cans or the like, containing a substance rendered more usable if warm, are stacked for gravity feed to a dispensing mouth and wherein one wall of the chute comprises a heat sink and is combined with one wall of the dispenser cabinet to form a chimney. The heating unit is a conventional light bulb located adjacent the dispensing mouth and beneath the heat sink whereby cans are progressively heated to a desired dispensing temperature during movement down the chute to the dispensing mouth; the light bulb also serving as an illumination source for transparent indicia incorporated in the dispenser walls.

5 Claims, 6 Drawing Figures



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SHEET 1 OF 3

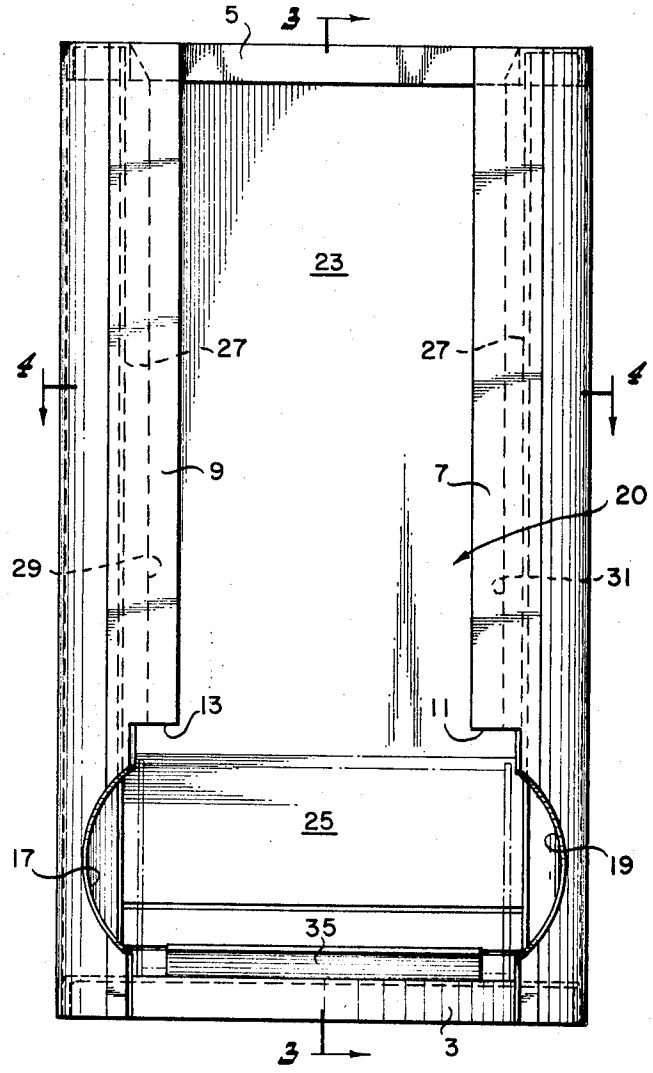


Fig-1

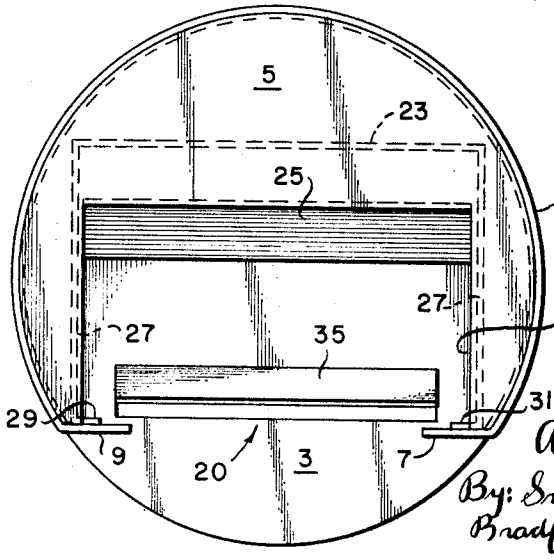
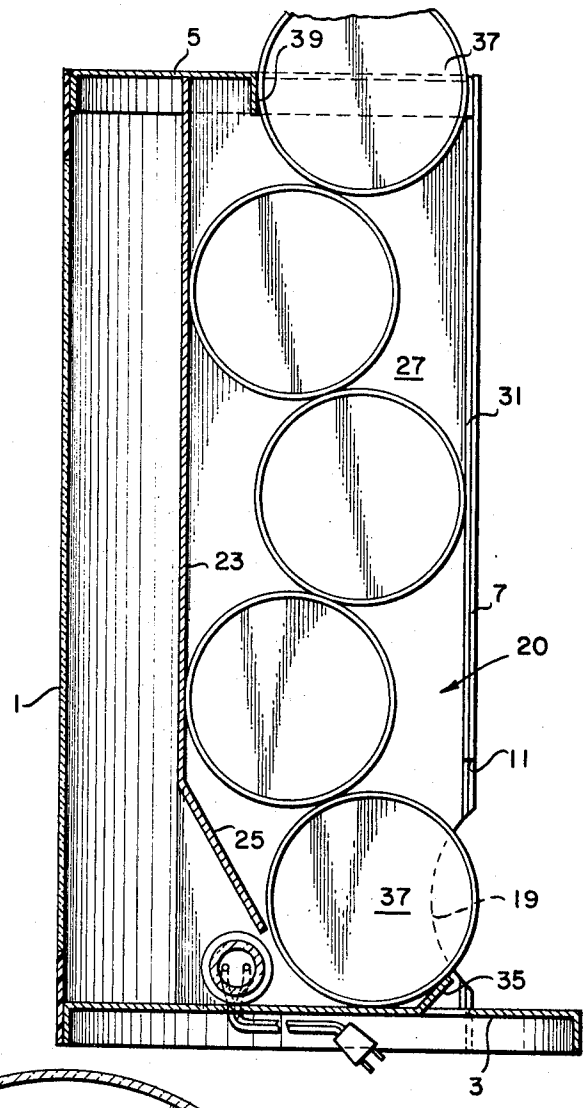


Fig-2

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Fig. 3



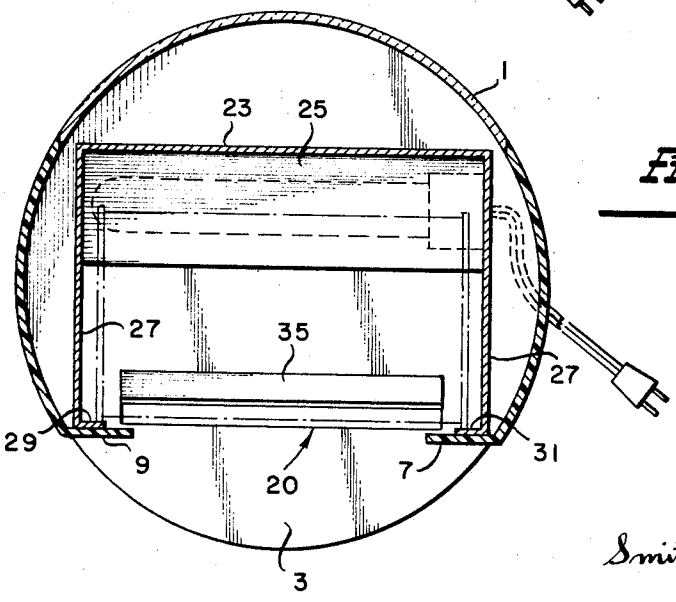


Fig. 4

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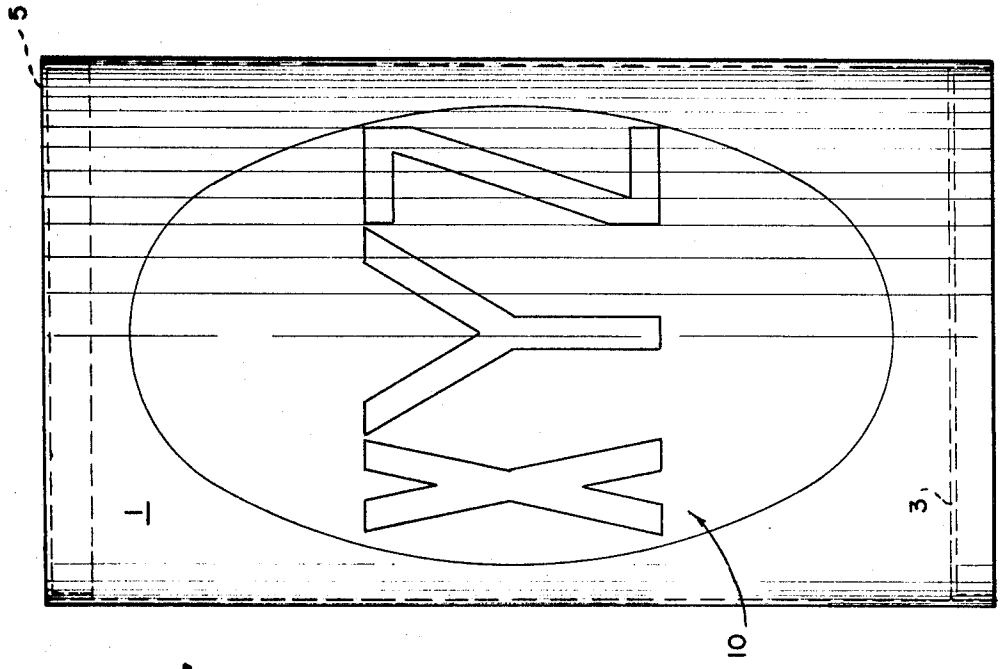


Fig. 6

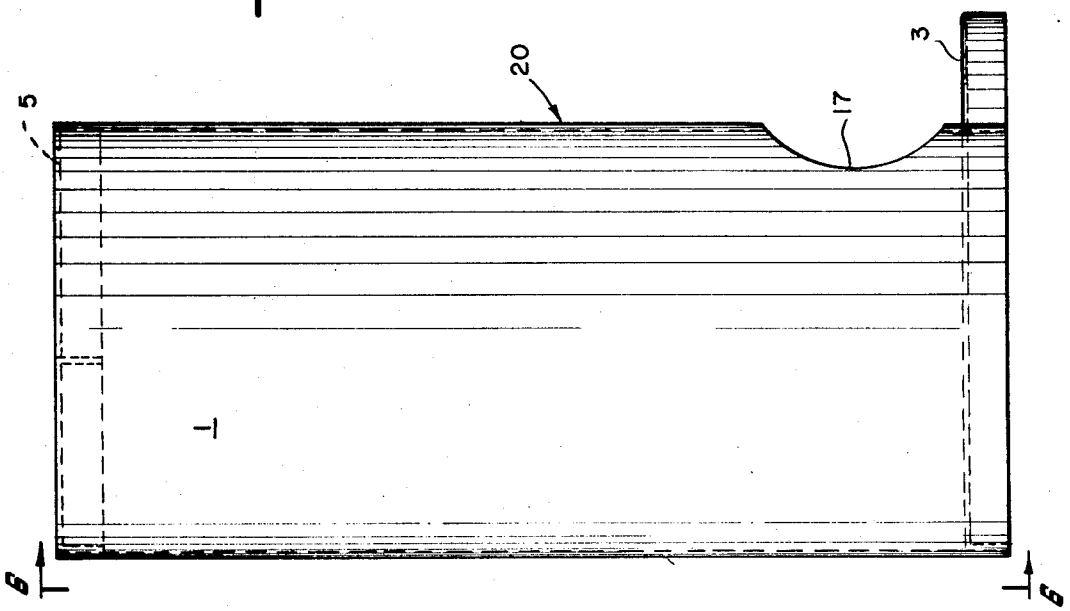


Fig. 5

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HEATED DISPENSING UNIT FOR CANS OF VISCOUS SUBSTANCES

BACKGROUND

A number of products being marketed in this area, are dispensed from cabinet structures on a single item basis. The nature of many such products makes it most desirable that they be warmed or heated when dispensed to reduce the viscosity of the product and to enable immediate use thereof without the expense and delay of using separate means to effect the desired warming or heating.

Some examples of products which are most advantageously dispensed in a warm or heated state are canned foods such as soups, chile, and the like and chili, petroleum products such as oil, oil additives, grease and other similar items which are viscous under any condition and which are congealed in direct relation to the ambient temperature at any given time.

In recognition of the advantages of providing dispensers which also provide a warmed or heated product to the consumer, there have been designed and manufactured a goodly number of heated dispenser structures designed to accomplish the desired result. In most cases, these dispenser devices are complex, expensive and designed to closely regulate the discharge temperature of the dispensed product within arbitrarily selected and narrow plus or minus temperature ranges. Examples of such devices are found in U.S. Pat. Nos. 2,150,469; 2,918,196 and 2,671,001.

In some cases, it is not necessary that the dispensing device be unduly complex or expensive. This situation arises in the case of the relatively newly developed oil additives for internal combustion engines and transmissions used in motor vehicles such as cars and trucks.

The oil additive products are sold in cans which contain the most general proportion of additive to be introduced in an engine for a given crankcase capacity. The additive product itself is an extremely viscous substance having extremely low flow rates at almost every ambient atmospheric temperature and thus are, under most favorable conditions, quite difficult to pour easily and completely from the container in which sold. Obviously too, as ambient temperature decreases, the pour problem increases because viscosity of the product varies in direct relationship with temperature; low temperature—high viscosity; higher temperature—lower viscosity. Among well-known products exemplifying the stated characteristics and attendant pouring difficulties, there are engine oil additives marketed, in cans.

Products of the type described are marketed through various outlets of which the most voluminous are service stations and garages which do not generally have facilities for heating the product at time of sale and will not make a substantial capital investment in dispensers or the like to enhance useability and/or sale of a product which is ancillary to but not a necessary commodity of the primary object of their business. Such outlets however, will market products of the type described where the product can be readily dispensed in the proper condition for immediate use and where the capital outlay is at a minimum. The device here meets the criteria of convenience and inexpensiveness and at the same time provides an eye-catching advertising prop for the product to be marketed by dispensing therefrom.

SUMMARY OF THE INVENTION

With the background of the invention established, it is apparent that an object of the invention is to provide a heated dispenser device for products rendered more salable in a warm or heated state.

Another object of the invention is to provide a comparatively inexpensive, yet functional heated dispenser device for oil additives.

Another object of the invention is to provide a dispensing device which includes a source of heat for reducing the viscosity of the product being dispensed, and which source of heat also functions to provide a source of light to illuminate advertising data pertinent to the product being dispensed which advertising data is applied to a transparent portion of the wall of said dispensing device.

Still a further object of the invention is to provide a dispenser device which is attractive and enhances the sales appeal of the product desired to be dispensed therefrom.

An additional object of the invention is to provide an easily installed, easily serviced dispenser for heated or warmed products.

The specifically enumerated objects and purposes of the invention, and other objects and purposes not set forth, but apparent to those skilled in the art, will become apparent from a consideration of the following descriptive material reference to the accompanying drawings,

THE DRAWINGS

FIG. 1 is a front elevational view of the dispensing cabinet,

FIG. 2 is a top plan view of the device shown in FIG. 1,

FIG. 3 is a side sectional view of the device shown in FIG. 1 and taken along the line 3—3 of FIG. 1,

FIG. 4 is a horizontal sectional view of the dispensing device of FIG. 1 taken along the line 4—4 of FIG. 1,

FIG. 5 is a side elevational view of the overall device while, finally,

FIG. 6 is a rear elevational view of the device shown in the various preceding Figures.

In considering the disclosure, it should be noted at the outset that the outside configuration of the dispensing cabinet can assume many forms. Preferably, the external appearance will be an enlarged replica of the product being dispensed. Thus, in the case of a particular product such as oil additives, being used as an example herein, the overall configuration of the structure will be in the form a can of such oil additives, i.e., the outer wall 1 of the structure is generally cylindrical and bottom and top closures 3 and 5 are affixed thereto so as to simulate a typical can. The overall appearance is best shown in FIGS. 5 and 6. As is shown in FIG. 6, the rear portion of the cylindrical wall 1 may include a label or advertising area 10 which is an enlarged replica of the product identification precisely as the original material appears on the cans containing the product. This area 10 may be and preferably is formed of a transparent or light-transmitting material such as clear plastic or glass which is incorporated directly into the container wall 1. Of course, where suitable, the entire container wall 1 may be formed of a transparent material which is painted or otherwise treated to

restrict light transmission through the label area 10 or other desired area.

Turning now to FIGS. 1 and 2, it will be seen that outer wall 1 is discontinuous in that a portion thereof is removed along a segmental plane extending vertically from bottom closure 3 through top closure 5. The edges of the wall adjacent the interrupted area are bent inwardly to form aligned marginal lips 7 and 9 defining the marginal edges of open area 20. The lower portions of these lips or planar edges 7 and 9 are cut away at 11 and 13, while the areas of wall 1 between the cut-away edges are further cut away in such a manner as to define arcuate edges 17 and 19 of a dispensing opening. The opening thus formed is of a size such that a container of the product to be dispensed may pass therethrough from the interior of the dispensing device to the exterior thereof.

Disposed within the interior of the generally cylindrical wall 1 is a generally rectangular box defined by vertical walls 21, 23 and 27 joined together at right angles. The fourth wall, so-called of the box is discontinuous and is comprised of coplanar but spaced-apart flanges 29, 31. These flanges are in face-to-face contact with the lips 9 and 7 in wall 1 so that the opening 20 is unobstructed. The lower ends of flanges 29 and 31 are also cut away so that the dispensing mouth of the device as defined by cut-away edges 11 and 13, container bottom 3 and arcuate edges 17 and 19 are unobstructed.

Turning now in particular to FIGS. 3 and 4, it will be seen that the lower portion 25 of wall 23 is detached from side walls 21 and 27 and is bent inwardly of the box toward the dispensing opening. It will also be seen that the bottom closure 3 is provided with a struck-up section 35 which is disposed centrally between the lips 7 and 9 and flanges 29 and 31. This struck-up section 35 is bent upwardly to define a stop as will be subsequently described and as seen in FIGS. 2 and 3 is positioned within the interior of the dispensing device just at the bottom of the dispensing opening.

Considering FIGS. 3 and 4 again, it will be seen that the continuous wall 23 of the box-like chute is spaced from the outer cylindrical wall 1. It will also be seen that the closure 5 is provided with a rectangular opening 37 which is in registry with the interior box-like chute but is somewhat narrower than the distance between flanges 29, 31 and wall 23. Thus, wall 23 lies beneath a portion of closure 5 but as shown in FIG. 4 is not in tight abutment at its upper edge with closure 5. In addition, it will be noted that the edge of opening 37 which parallel chute wall 23 is provided with a downturned lip 39. This lip eliminates a sharp edge at the opening and also serves an additional function as will be described.

As has been also described, the lower end 25 of wall 23 is bent inwardly. Disposed directly beneath this inwardly bent bottom 25 of wall 23 is a source of heat. Preferably, this source is comprised of a light bulb 50 inserted in a standard screw socket 51. Socket 51 is purely conventional and is supplied with electrical energy via a typical cord and plug assembly 52. The bulb 50 or other heating element may be readily removed and replaced by passage beneath the lower edge of the inturned wall area 25.

OPERATION

As described, it is believed apparent that the wall 1 comprises a covering for the interior parts of the dispensing device and at the same time is an advertising medium for the contents being dispensed since the wall is transparent or is provided with transparent areas which are suitably painted or otherwise ornamented as a replica of the canned product being dispensed. Illumination for the replica areas is provided by the bulb 50.

Cans or containers of the product are loaded through the closure 5 via opening 37 and become stacked in the rectangular box defined by walls 21, 23 and 27 which may be conveniently defined as a product stacking chute. The lowermost of the stacked products is positioned against the inturned portion 25 of wall 23 which directs it against the upturned area 35 of bottom closure 3 which forms a stop. It should be noted that the container is guided into the dispensing mouth so that it may readily be grasped at its ends because of the exposure thereof via the arcuate margins 17, 19 which define the sides of the dispensing mouth. The canned product is simply pulled out over the top of stop 35 through the opening.

Since the rear wall 23 of the stacking chute is spaced from outer wall 1, the enclosed space therebetween defines a vertical chimney. Thus, heat generated from the heat source, whatever it may be, will heat the column of air therein, the same passing upwardly therethrough. Since the space between closure 5 and rear wall 23 of the chute is small, the wall and closure act as a damper to slow the convection currents generated in the chimney. This effect is further enhanced by downturned lip or flange 39 which creates a tortuous path to further restrict the flow of heated air which discharges out of opening 37.

Back wall 23 of the stacking chute will be always fabricated of a metal or other heat-conducting substance so that it defines a heat sink accumulating heat generated from source 50 and transmitting heat by both conduction and convection to the containers containing the product. As the containers pass down the chute they are progressively heated to higher temperature so that when removed from the dispenser the product contained therein is at a temperature such as to be readily usable at the instant of removal.

At this point, it should be noted that the dispensing device is generally a simulated can forming an enlarged replica of a canned product which is marketed in cylindrical cans. However, the general outer configuration of the dispensing device is subject to modification in appearance to simulate other containers than cylindrical cans and, so long as the relation between the product chute, the dispensing opening and the heat source is maintained as described, the outside appearance or configuration of wall 1 and closures 3 and 5 can take any desired form.

Having described the invention in detail, the spirit and scope thereof is defined in the following claims, wherein:

1. A dispenser for cylindrical containers of products to be heated and dispensed while heated comprising a vertical stacking chute for containing a vertically disposed stack of such containers, said chute being of substantially rectangular transverse cross section and

comprising parallel front and rear walls spaced apart a distance greater than the diameter of the individual containers being dispensed by parallel side walls spaced apart a distance slightly greater than the overall height of the individual containers being dispensed, said front wall being cut away at the bottom portion thereof to form an opening in the chute for permitting discharge of the containers adjacent the bottom of said chute, said rear wall of the chute opposite said opening to form a forwardly inclined ramp for guiding said containers into said opening; a closure for the bottom of said chute, said closure including a struck-up portion extending across the bottom of the opening in said front wall of said chute and defining a stop to prevent discharge of said containers by gravity from said opening; an outer wall joined to said bottom closure and extending upwardly therefrom and completely surrounding said chute but spaced outwardly from the walls defining said chute to define therewith and therebetween a chimney, said outer wall having an opening in the bottom portion thereof registering with the opening in the front wall of said chute to permit removal of the lowermost container in said chute through said registering openings; and a heat source disposed near the bottom of said chute and beneath said forwardly inclined ramp whereby said inclined ramp, the walls defining said chute define a heat sink within said outer surrounding wall for transferring heat from said source of heat to said containers, said chimney conveying heated air upwardly toward and for discharge through the open top of said chute.

2. A dispensing device as defined in claim 1 wherein said device is an enlarged replica of the shape of the individual containers being dispensed, and wherein said outer wall is provided with transparent areas containing enlarged replicas of the advertising material made on said containers, and wherein said heat source also serves simultaneously as a light source to illuminate said transparent areas to render said replicas of the advertising material applied thereon more visible.

3. A dispensing device as defined in claim 1 wherein said dispensing device includes a top closure having an opening therein registering with the open top of said chute, said opening being defined by at least one flanged marginal edge spaced from but adjacent said rear wall of said chute, said rear wall being terminated to define a space between itself and said top closure, whereby heated air is discharged over said wall below said closure and directed downwardly by said flanged edge prior to discharge through the opening in said top closure.

4. A dispensing device as defined in claim 1 wherein said outer wall is formed of a light-transmitting plastic having portions thereof rendered opaque and other portions remaining uncovered, said last-mentioned portions having advertising material applied thereon corresponding to the advertising material applied to the containers being dispensed by said device.

5. A dispensing device as defined in claim 1 wherein said chute is fabricated of a material having heat-conductive properties.

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