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AUTOMATIC BUTTER DISPENSER

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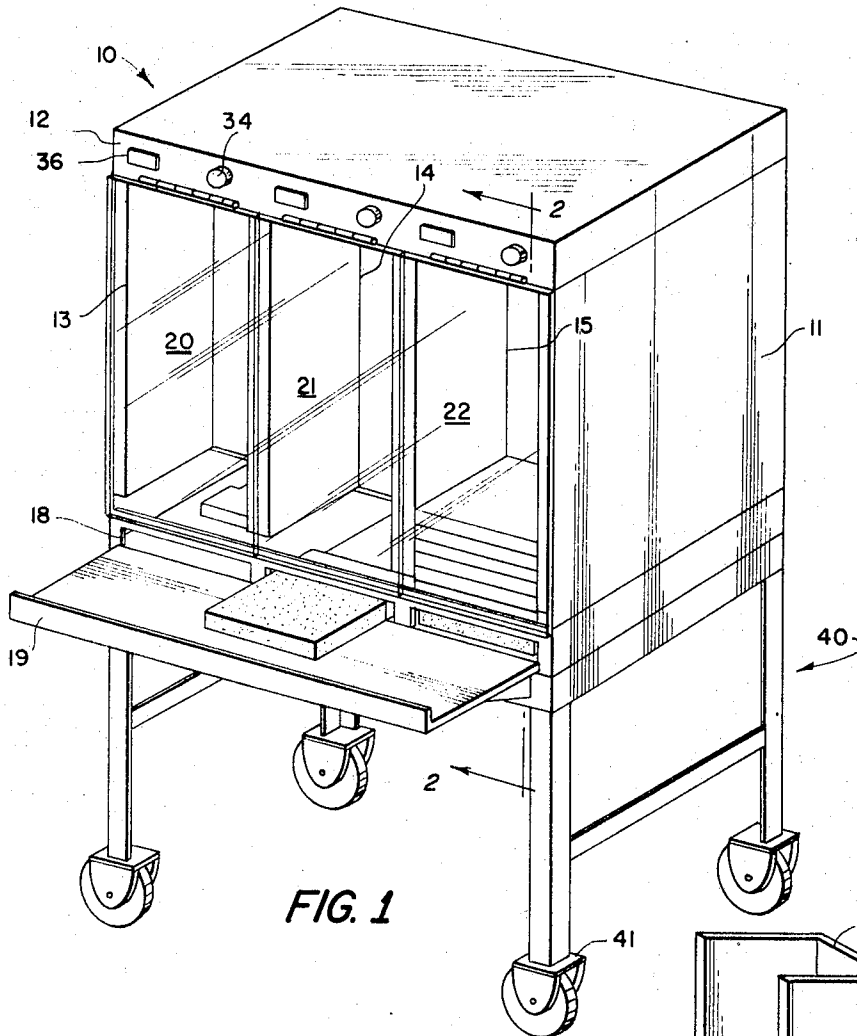


FIG. 1

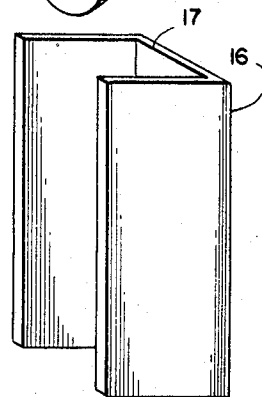


FIG. 3

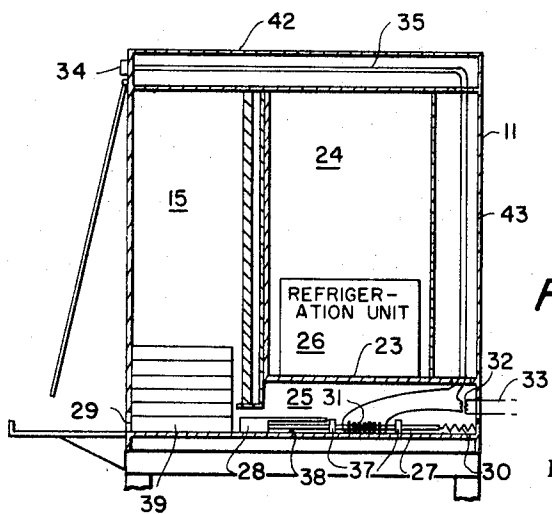


FIG. 2

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AUTOMATIC BUTTER DISPENSER

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1 Claim

ABSTRACT OF THE DISCLOSURE

A butter dispenser unit wherein a plurality of vertical stacks of butter pats are positioned in the front face of a refrigerated casing with the bottom pat of a stack being pushed out of a discharge opening by a solenoid operated pusher rod in response to the manual actuation of an operating button located above each vertical compartment.

The present invention relates to a dispensing unit for relatively flat objects, more particularly, to a unit for dispensing butter pats or the like in response to selective actuation of an operating button.

Many large institutions and industrial organizations have dining facilities which readily accommodate a great number of persons. An economical way of feeding a large number of persons in a short period of time is by cafeteria style where the individuals pass by a long counter and select their food. The butter in such dining facilities is generally served in preformed pats which may be arranged on an iced tray so that the butter remains cool. Such an arrangement is generally not satisfactory since when the ice melts the butter drops into the resulting water.

Various forms of dispensers have been proposed for serving butter in such dining facilities but these generally have been unsatisfactory since they are either too complicated in operation or that their initial cost is so high because of their complexity that the expense incurred in installing such dispensers is not justified. Further, when such dispensers have been proposed particularly for butter, they are not readily adaptable for dispensing other items. This lack of adaptability considerably adds to the expense of their installation in dining facilities.

It is therefore the principal object of the present invention to provide a novel and improved butter dispenser unit.

It is another object of the present invention to provide a butter dispenser unit which is automatic in operation but simple and uncomplicated in construction.

It is an additional object of the present invention to provide a butter dispenser unit which is readily adaptable for dispensing a large variety of relatively flat objects.

It is a further object of the present invention to provide an automatic butter dispenser unit which is quickly and easily operable and thus it is particularly adaptable for cafeteria food lines.

The disadvantages of the prior art are eliminated and the objects of the present invention are achieved by the automatic butter dispenser which is disclosed herein. According to the present invention, this butter dispenser unit may comprise a heat insulated casing having a plurality of vertical compartments in the front face. Each of the compartments receive a vertical stack of pats of butter. There are a plurality of discharge openings in the casing front face below the corresponding vertical compartments. A shelf extends outwardly from the casing front face immediately below the discharge openings. The pats are dispensed by pusher rods which are slideably mounted in the casing for movement transverse to the vertical stacks of pats and the rods are aligned with their respective discharge openings. Each rod is provided with a spring for resiliently retaining the pusher rod in its inoperative

position which is behind its respective vertical stack of pats. Each pusher rod forms the plunger or armature of a solenoid coil. Manually actuated buttons are provided on the casing front face above the respective compartments for energizing a respective solenoid when actuated. As a result, the pusher rod will push the bottom pat of a vertical stack through the respective discharge opening onto the shelf.

The adaptability of this dispenser unit is obtained through the use of removable inserts which fit into the vertical compartments and which have an internal configuration conforming to the vertical stack of flat objects which are to be dispensed.

Other objects and advantages of the present invention will be apparent upon reference to the accompanying description when taken in conjunction with the following drawings wherein;

FIGURE 1 is an overall perspective view showing the butter dispenser unit of the present invention together with a wheeled table upon which the unit may be mounted;

FIGURE 2 is a vertical sectional view of the unit taken along the line 2-2 of FIGURE 1; and

FIGURE 3 is an overall perspective view of a removable insert for the vertical compartment of the unit.

Proceeding next to the drawings wherein like reference symbols indicate the same parts throughout the various views a specific embodiment of the present invention will be described in detail.

The butter dispenser unit of the present invention is illustrated in FIGURE 1 and is generally indicated at 10. The unit comprises an outer casing 11 which is heat insulated so as to maintain butter therein at the proper temperature. The front face of the compartment indicated at 12 has three vertical compartments 13, 14 and 15 therein. The compartments may be more clearly seen in FIGURE 2. The compartments may be provided with removable inserts 16 of a suitable plastic with the outer surfaces of an insert being closely fitted within the walls of the vertical compartment. The internal configuration of the insert indicated at 17 is shaped to closely receive a vertical stack of butter pats or other relatively flat objects which are to be dispensed. The inserts would all have the same exterior dimensions so as to fit in the vertical compartments but the internal configurations would be varied depending on the objects to be dispensed.

Also in the front face 12 of the casing, there are a plurality of discharge openings 18 spaced below the respective compartments. A shelf 19 extends outwardly from the front face 12 immediately below the discharge openings. The butter pats dispensed from the openings 18 are pushed out on the shelf 19 where they may be picked up by the diners.

Each of the vertical compartments 13-15 is closed by transparent doors 20, 21 and 22 with the doors being pivotally mounted at their upper ends as may be seen in FIGURE 2. By swinging the doors outwardly as illustrated in FIGURE 2, the compartments may be easily loaded.

The casing 11 is also divided by a horizontal partition member 23 into an upper compartment 24 and a lower compartment 25. The upper compartment 24 houses a refrigeration unit 26 which is schematically represented since such units are conventional and well known in the art.

In the lower compartment 25 there is housed the mechanism for dispensing the butter pats. This mechanism comprises a pusher rod 27 having a T-shaped head 28 which is engageable with the lowermost pat 29 which has dropped down from the vertical stack. A spring 30 resiliently retains pusher rod 27 in its normally inopera-

tive position as illustrated in FIGURE 2. The pusher rod 27 is constructed as the plunger of a solenoid coil 31 which is connected through a transformer indicated at 32 to a suitable source of electrical energy through leads 33.

Also connected in circuit with solenoid 31 is a manually depressible operating button 34 which is positioned in the front face 12 of the casing immediately above its respective vertical compartment. The button 34 is connected by leads 35 to the solenoid 31 and when depressed closes a circuit which energizes the solenoid.

Also mounted in the front face 12 of the casing above the respective vertical compartments are indicators 36 which may be in the form of a light which is illuminated when the respective compartment is empty.

The pusher rod 27 is slideably mounted in brackets 37 mounted on an inner horizontal face 38 of the casing. The face 38 is stepped up at 39 to receive a butter pat so that the pat is directly in line with the pusher rod 27. The movement of the pusher rod 27 is reciprocating and is transverse to the vertical stack of objects in the compartments of the casing.

The dispenser unit as described above may either be mounted directly on the counter or it may be mounted on a wheeled frame or table indicated generally at 40 in FIGURE 1. The wheeled frame is provided with individual brakes 41 for the wheels so the frame may be locked in position. The use of the wheeled frame enables the dispenser unit to be readily transported and repositioned as desired.

To facilitate maintenance of the electrical circuitry of the unit, the casing may be provided with a wiring compartment 42 which is positioned above the vertical compartments and the refrigeration compartment and which extends in the rear of the refrigeration compartment and indicated at 43.

Thus it can be seen that the present invention discloses a butter dispenser unit which not only automatically dispenses pats of butter, but is simple in construction. The unit is operated merely by pushing a button located over the respective compartment. In use, one compartment may house pats of butter and the other compartments different flavors of jams, jellies, or other types of food seasonings and flavors. Thus the diner need only push the proper button in order to make his selection. Since each vertical compartment has its own dispensing member in the form of a solenoid actuated pusher rod, it is apparent that the correct object will be dispensed in response to the depressed button. The use of removable inserts of varying internal configurations enables many types of relatively flat objects to be easily dispensed from the same dispenser unit. The refrigeration unit may be of a relatively small capacity and in some instances may be altogether eliminated where the casing is properly insulated and the butter is dispensed at such a high rate that it remains only for a short time within the dispenser unit. The present dispenser unit provides an economic arrangement for the dispensing of butter.

It will be understood that the present invention is susceptible to modification in order to adapt it to different usages and conditions.

What is claimed is:

1. A butter dispenser unit comprising:
 - a heat insulated casing having a horizontal compartment below the top face thereof,
 - a plurality of fixed vertical compartments in the front face of said casing below said horizontal compartment,
 - a removable insert in each compartment with each insert having the same exterior dimensions to fit in a compartment and having an internal configuration shaped to closely receive a vertical stack of relatively flat objects,
 - a corresponding plurality of transparent doors on said casing front face for said respective compartments, said doors being pivotally mounted at their upper ends on said casing front face for opening outwardly to permit individual loading of the inserts in the compartments,
 - discharge openings in said front face below said compartments for individual flat objects,
 - a fixed shelf extending outwardly from said casing front face immediately below said discharge openings to receive said flat objects,
 - horizontal partition means within said casing behind said vertical compartments to divide that portion of the casing into upper and lower compartments,
 - refrigeration means in said upper compartment for cooling said casing,
 - pusher rods slidably mounted in said lower compartment for movement transverse to said vertical stacks of flat objects and aligned with said discharge openings,
 - spring means resiliently urging said pusher rods to positions immediately behind said vertical stacks of objects,
 - a solenoid coil for each pusher rod,
 - and manually actuated operating buttons on said casing front face exteriorly of said first horizontal compartment and above the respective vertical compartments for energizing a respective solenoid when actuated so that the pusher rod will push the flat object on the bottom of a stack through the respective discharge opening onto said shelf.

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WALTER SOBIN, *Primary Examiner.*

U.S. Cl. X.R.

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