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REFRIGERATED DISPLAY CASE

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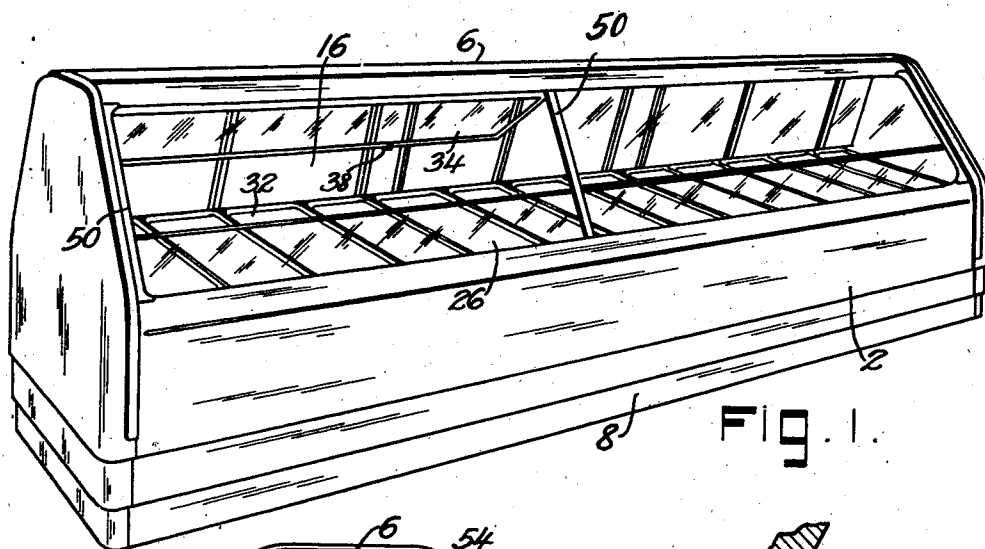


FIG. 1.

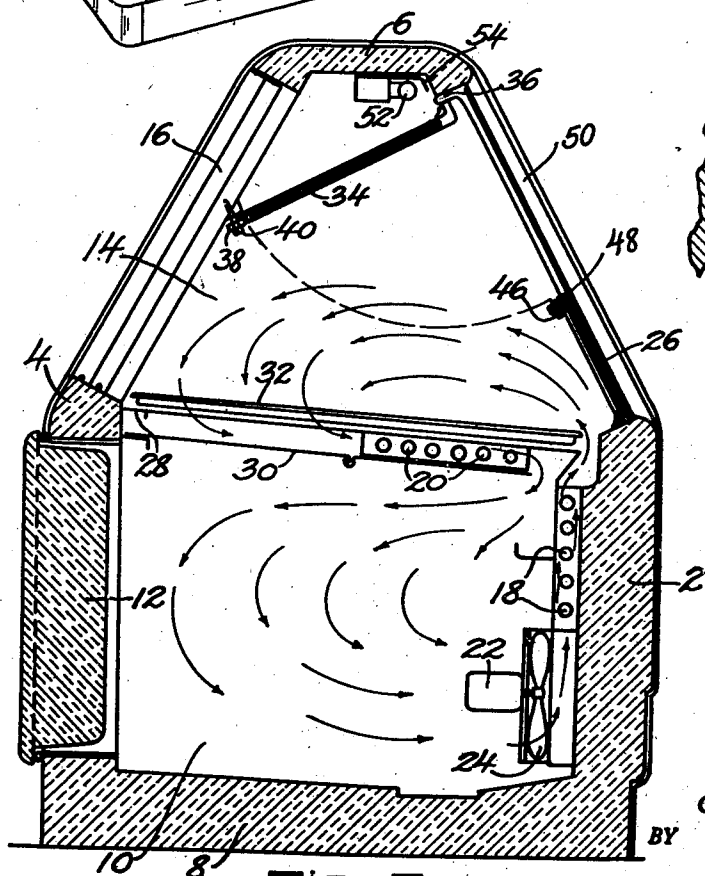


FIG. 2.

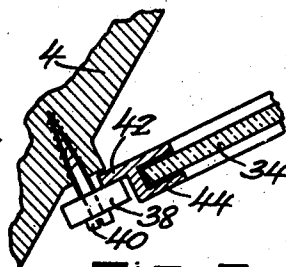


FIG. 3.

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REFRIGERATED DISPLAY CASE

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4 Claims. (Cl. 62—89.5)

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My invention relates to display cases and more particularly to refrigerated constructions capable of use either for self-service or for clerk service in the handling of goods on display.

Refrigerated display cases and particularly display cases adapted to serve the public by self-service methods have been heretofore manufactured and used to great advantage. However, these prior constructions have been of a permanently open type providing access only from the front of the case and no means have been provided by which the open front of the display space might be closed in the event it should be desired to provide clerk service from the rear of the case. On the other hand, conventional refrigerated display cases designed for clerk service are not adapted for self service usage.

In order to overcome these disadvantages of existing types of display cases, I have devised a dual purpose refrigerated display case comprising a refrigerating unit and a display space together with means for providing access to the display space from either the front or the rear of the case whereby the case may be used to afford either self-service or clerk service, or both, from the display space. This result is preferably attained by providing the case with a pivotally mounted window which serves as a combination access and viewing means and is movable about a horizontal axis to open or close the front of the refrigerated display space. This pivotally mounted window is constructed and positioned in such a manner as to provide for convenient and effective operation as a self-service display case when the window is in its open position, and also has the distinct and novel advantage of being adapted to permit simultaneous access to the display space through both the front and rear access means, permitting the customers to serve themselves from the front of the case, while the clerks provide service from the rear of the case. However, when desired the window may be closed and locked in place to provide a conventional display case for service by clerks only. This novel optional closing feature also has the distinct advantage of preservation of the goods at night or when the refrigerated case is not in use, thereby eliminating the necessity of transfer of the contents thereof to storage chambers at such times.

One of the objects of my invention is to provide a refrigerated display case with novel front window member which serves as a combination access and viewing means, movable to either a closed or open position to maintain a controlled

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temperature for the preservation of the articles displayed within the refrigerated case.

Another object of the invention is to provide a refrigerated display case with novel combination access and viewing means for providing optional self-service or clerk service access to the case when the combination access and viewing means is in its open or closed position.

A further object of the invention is to provide a refrigerated display case capable of providing access to either the customer from the front thereof through the combination access and viewing means, or to the clerk from the rear through rear access doors in the display space, or to permit simultaneous access from both the front and rear to the refrigerated display space.

Another object of the invention is to provide a refrigerated display case with a plurality of novel front window members which serve as combination access and viewing means, movable to either a closed or open position, wherein certain of the window members may be maintained in an open position, while others are maintained in closed position, resulting in a refrigerated display case which may serve customers at one section thereof by self-service and at another section by clerk service.

These and other objects and features of the invention will appear from the following description thereof in which reference is made to the accompanying figures of the drawing.

In the drawing:

Fig. 1 is a perspective view of a refrigerated display case illustrating a preferred form of the combination access and viewing means in its open or self-service position,

Fig. 2 is a vertical cross section through the refrigerated display case shown in Fig. 1, and

Fig. 3 is a view of a typical fastening element for holding the combination access and viewing means in either closed or open position.

In that form of my invention illustrated in the figures of the drawing, a refrigerated display case is shown embodying a lower front wall 2, a rear wall 4, top member 6 and a base 8. The display case as illustrated includes a lower storage chamber 10 with conventional rear access door 12 and an upper display space 14 provided with conventional rear access doors 16.

Within the storage chamber 10 is located a refrigerating means consisting of coils 18 and 20 and preferably including a motor 22 and fan 24. The refrigerating unit as shown in the drawing is one similar to that unit covered by the application of MacMaster, Serial No. 554,678, filed

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September 18, 1944. With this construction air is caused to circulate upward over the coil 18 adjacent the front of the case and behind the transparent deflector means 26 whereby the cooled air is directed rearwardly toward the closed portion of the display space. The cool air then circulates downward over the articles on display and between the article supporting means 28 and a baffle 30 so that it will flow over the coil 20 before it passes into the lower storage chamber 10. By use of these preferred embodiments of a refrigerating unit there is but little loss of cooled air to the exterior of the display case as it circulates through the display space 14 and storage chamber 10. However, the refrigerating unit and method of circulation provided may be of any type suitable to the needs of the articles on display and therefore is not to be restricted to the one form shown in Fig. 2 of the drawings.

Platters or other article supporting means 32 are removably arranged in horizontally spaced relation on suitable supports above the baffle plate 30 at the top of the storage chamber 10 to provide the article receiving lower portion of the display space 14. The display space 14 is provided at the front thereof with a combination access and viewing means in the form of a divided window which is separable horizontally into two sections to provide the stationary deflector means 26 and the upper window section 34. The deflector means extends along the front edge of the display space and is secured at its base to the front wall 2 of the case but is inclined rearwardly to direct cool air passing upward adjacent the deflector toward the rear of the display space.

The upper window section 34 of the combination access and viewing means is suitably mounted for movement to a convenient position in which it will permit access to the display space. For this purpose the window section is pivotally mounted at 36 to move about a horizontal axis from a forwardly inclined closed position to a rearwardly inclined open position as shown in full lines in Fig. 2. The window section thus serves as an access means which is movable so that customers may conveniently serve themselves to the articles within the display space. Any desired cooperatively engageable fastening elements may be used to hold the upper movable window section of the combination access and viewing means in a raised or open position. However, the preferred form of a fastening element is shown in Fig. 3 of the drawing. In this construction the upper window section is held in its raised or open position by a fastening element which is in the form of a turn button 38 rotatably mounted on a screw 40 secured to the inner rear wall 4 of the case. The free edge of the turn button is formed so that when turned it will engage and hold the thin edge 42 of a sealing strip 44 which extends along the free edge of the upper window section. When it is desired to convert the refrigerated display case into a closed or clerk service construction, or to close certain sections thereof, the fastening element 38 on the rear wall of the case is turned to disengage it from the thin edge 42 of the strip 44. The window is lowered and swung forward to a closed position where it is held by the turn buttons 46 mounted on the complementary sealing strip 48 on the upper edge of the deflector means 26. Any suitable number of turn buttons 46 may be provided between the vertically extending

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members 50 at the end of the window section. When thus closed the strip 44 is located closely adjacent and in substantial sealing relation with the upper edge portion of deflector means 26 to provide in effect a continuous front window through which articles may be viewed although they are then accessible only to the clerks through the rear doors 16 of the display space.

In order to illuminate the articles on display a light 52 is located in the upper portion of the display space and mounted beneath the top 6 of the case. A reflector 54 directs light downward onto the articles carried by the platters 32. The upper window section 34 is so positioned with respect to the light 52 that light therefrom will pass through the upper window section onto the articles when the section is swung to the full line position of Fig. 2 and thus the same source of illumination serves effectively in both positions of the window section. The positioning of the light 52 in this manner also results in the additional advantage of protecting the articles on display when the upper window section 34 is in its raised position, from the heat rays transmitted by the lighting means especially when incandescent lights are employed.

In using the display case described in a conventional manner for service by clerks behind the case the upper window section 34 is locked in its forward position by fastening elements 46 so that the sealing strip 44 is held in contact with the upper edge of the deflector means 26 and the front of the display space is closed. Air is circulated through this space passing upward over the coil 18 adjacent the deflector means 26 and passes downward adjacent the doors 16. It then flows between the edges of the platters and between the support 28 and baffle 30 to the coil 20 before returning to the storage chamber. The case can then be used in the same manner as a conventional closed and refrigerated display case in which customers are served by clerks.

However, during rush periods or at other times when it is desired to have a self-service display case, the upper window section 34 is swung to its rearwardly inclined opened position where it is held in place by the turn button 38 engaging the thin edge 42 of sealing strip 44. The display space is then accessible to the customers from the front of the case for self service although the clerks still can reach the articles from the rear of the case if desired. The cooling and circulation of air in the display space is not materially altered by opening the case since the deflector means 26 directs air rearwardly and the return of air to the storage chamber is aided by the baffle effect of the rearwardly inclined upper window section. Similarly, illumination of the goods being displayed is not affected since the window section is transparent and does not obstruct the light directed downward from the light source 52.

At night or at other times when the case is not in use the upper window section is closed to serve as a night lid. Therefore it is not necessary to transfer the goods to other storage space and or to prevent any loss of refrigeration which may result when the window section is opened.

The preferred form of the invention has been illustrated in the drawings, however it is evident numerous changes and modifications may be made in the form and arrangement of the various elements without departing from the spirit and scope of my invention. In view thereof it

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should be understood that the embodiments of my invention shown in the drawings are only intended to be illustrative thereof and are not intended to limit the scope of the following claims.

I claim:

1. A refrigerated display case embodying a refrigerating unit, means forming a display space, deflector means extending along the front edge of said display space, and a movable access and viewing means pivotally mounted at its upper edge for movement about a horizontal axis to an open and rearwardly inclined position permitting access to said display space, and interengaging fastening elements positioned on the rear wall of said display means and the lower edge of the movable access and viewing means engageable to hold said access and viewing means in an open position.

2. In a refrigerated display case having an upper display space and a lower storage chamber, means for circulating air upward from the storage chamber through the display space and back to the storage space, means for cooling the air thus circulated, access doors at the rear of the display space, and a window at the front of said display space, said window having at least a portion thereof movable from a forwardly inclined closed position in which said display space is closed at the front to a rearwardly inclined opened position in which the display space is open at the front for self-service from the display space.

3. In a refrigerated display case having an upper display space and a lower storage chamber, means for circulating air upward from the storage chamber through the display space and back to the storage space, means for cooling the air thus circulated, access doors at the rear of the

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display space and a window at the front of said display space, said window having at least a portion thereof movable from a forwardly inclined closed position in which said display space is closed at the front to a rearwardly inclined opened position, a fastening element positioned on the rear wall of said display space means for engagement with the lower edge of the window portion to hold said window portion in a rearwardly inclined open position for self-service.

4. In a refrigerated display case having an upper display space and a lower storage chamber, means for circulating air upward from the storage space through the display space and back to the storage space, means for cooling the air thus circulated, access doors at the rear of the display space, and a window at the front of said display space, said window having at least a portion thereof movable from a forwardly inclined closed position to a rearwardly inclined opened position, the other portion of said window being rearwardly inclined and positioned to serve as a deflector means to direct air rearwardly toward articles in said display space.

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