April 25, 1933. C. E. WICKE 1,905,775

ILLUMINATED REFRIGERATOR DISPLAY CASE

Filed Sept. 23, 1930

Fig. 1.

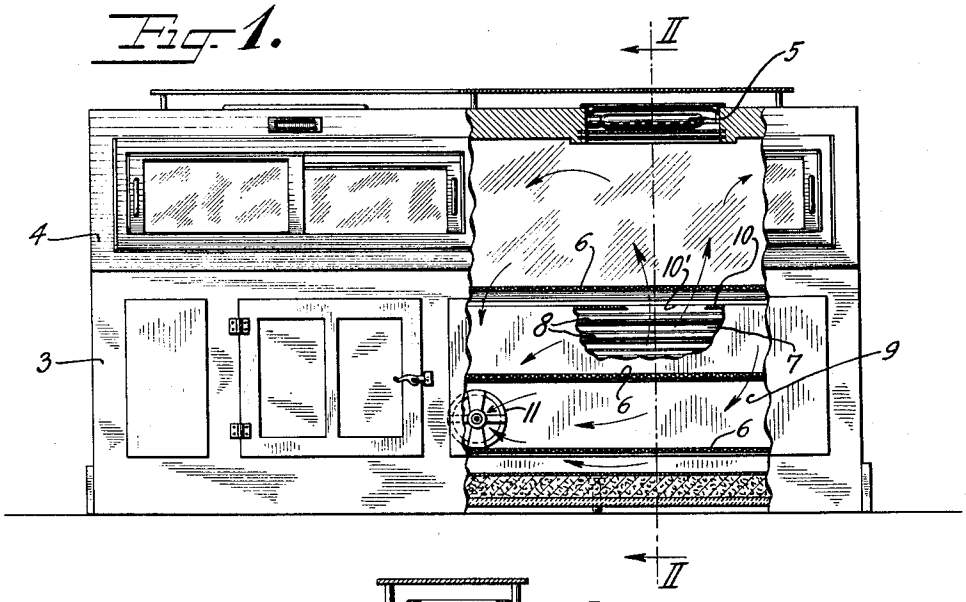
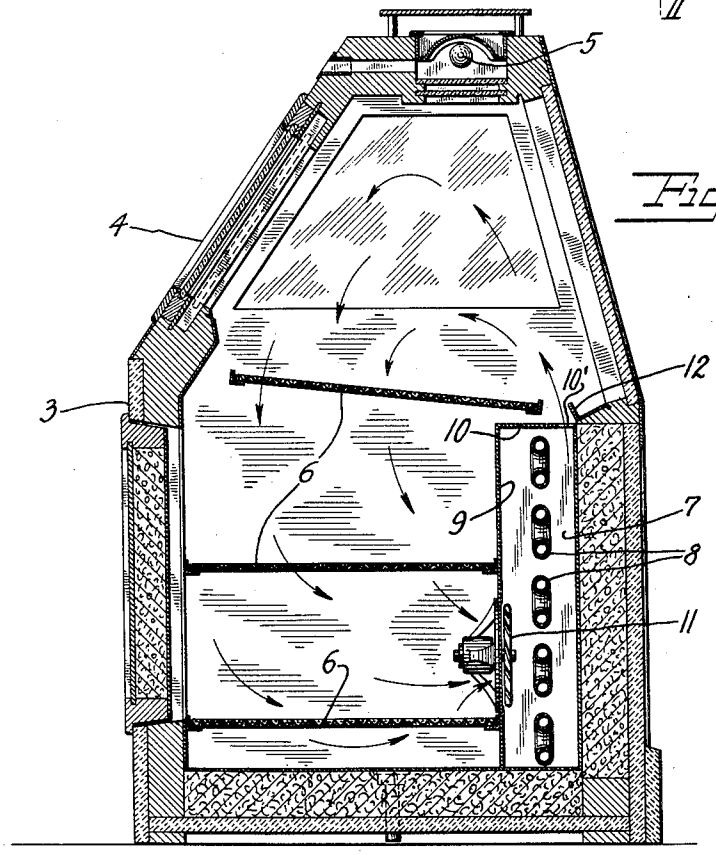


Fig. 2.



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UNITED STATES PATENT OFFICE

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ILLUMINATED REFRIGERATOR DISPLAY CASE

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This invention relates to refrigerators and particularly to a refrigerated show-case provided with means for illuminating its interior.

In the type of refrigerated show-case in which the illuminating means are disposed interiorly of the case difficulty has been encountered in maintaining the necessary temperature to properly protect the food from deterioration and spoiling. In such cases it has been the practice to place the cooling means, such as ice or pipes through which a brine solution is circulated in the bottom of the case and depend upon the natural circulation of air to maintain the proper temperature throughout the show-case. It has been found, however, that such a method has not proven entirely satisfactory. It has further been found that when the cooling means is disposed as indicated that the storage space available for use is restricted.

Therefore it is an object of the present invention to provide a refrigerated show-case in which the cooling means are so disposed within the box as to uniformly maintain within the interior of the box a suitable temperature at which the food will not spoil.

It is a further object of the present invention to so dispose the cooling means within a refrigerated show-case as to provide for a maximum space within the case for food display or storage.

The advantages of the invention may be secured with structures differing somewhat in detail but the best embodiment of it known to me is illustrated in the accompanying drawing, in which,

Fig. 1 is a rear elevation, partly broken away, of a refrigerated show-case embodying my invention, and

Fig. 2 is a vertical transverse section on line II—II of Fig. 1.

The refrigerated display case may consist of a bottom section 3 and a top section 4, the bottom section consisting of the usual structural details, such as parts of the framing, insulation, doors, etc., ordinarily employed in such cases and forming no part of the present invention. The top section also consists of the upwardly and inwardly sloping front and rear sides, provided with suitable doors or slides and glass panels as provided in such cases and also not forming any part of the present invention.

Mounted in the top section of the display case are lighting means 5 for interiorly lighting the display case and also disposed within the case are several shelves 6 upon which the food, or trays supporting the food, may be placed.

As stated heretofore in cases of this type it has been the practice to dispose the cooling means at the bottom of the case and depend upon the natural circulation of the air to provide a uniform temperature throughout the interior of the box. According to the present invention I dispose the cooling means 7 within the bottom section 3 in such a manner that such means are vertically arranged within the bottom section adjacent the front wall of such section.

The particular cooling means disclosed comprise a plurality of vertically arranged coils 8 which are mounted in a rectangular box 9 formed of Monel or other non-corrosive metal. At the top 10 of the box I provide several openings or a long rectangular slot 10′ through which the air may be passed after having flowed over the cooling coils 8.

It will be noted that the opening through which the cooled air is passed is disposed adjacent the lower edge of the inclined front of the top section of the box. By reason of such construction the air will be directed upwardly and inwardly as indicated by the arrows and then be deflected by the top of the box toward the downwardly and outwardly sloping rear wall of the box toward the bottom of the box where through the action of a suction fan 11 it is again made to pass over the cooling coils 8. The shelves 6 are made of foraminous or perforated material so as to permit the free circulation of the air. In order to more effectively direct the air upwardly and slightly away from the display glass front of the box I may provide a baffle 12. This baffle prevents the formation of moisture upon the glass by condensation as it directs the very cold air, just emerging

from the rectangular box 9 away from the glass.

Although I have disclosed a fan in connection with maintaining a circulation of the air in the box, I have found in actual practice that such a fan is not always necessary, however under extreme conditions of heat which may occur in mid-summer it may be of advantage to utilize the fan. By the arrangement of the cooling means along the front face of the box a more accessible disposal of the food may be had and furthermore, since the vertical space available is greater with the vertical arrangement of the cooling means one additional shelf may be provided thus increasing the amount of storage space for food.

What is claimed is:

1. The combination of a display case having a bottom section and a top section with inwardly sloping sides, tray supports intermediate the top and bottom sections and spaced from the sides thereof, of refrigerating means disposed in the bottom section adjacent the front wall thereof, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

2. The combination of a display case having a bottom section and a top section with inwardly and upwardly sloping sides, tray supports intermediate the top and bottom sections and spaced from the sides thereof, of a series of cooling coils disposed adjacent the front wall of said bottom section, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

3. The combination of a display case having a bottom section and a top section with inwardly and upwardly sloping sides, tray supports intermediate the top and bottom sections and spaced from the sides thereof, of a series of cooling coils disposed adjacent the front wall of said bottom section, and a housing for said coils, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

4. The combination of a display case having a bottom section and a top section with inwardly and upwardly sloping sides, of a series of cooling coils disposed adjacent the front wall of said bottom section, a housing for said coils, said housing having an opening in the upper part adjacent the lower edge of the upwardly sloping front wall of said top section, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

5. The combination of a display case having a bottom section and a top section with inwardly and upwardly sloping sides, of a series of cooling coils disposed adjacent the front wall of said bottom section, a housing for said coils, said housing having an opening in the upper part adjacent the lower edge of the upwardly sloping front wall of said top section, and means for positively circulating the air over said coils and through said opening, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

6. The combination of a display case having a bottom section and a top section with inwardly and upwardly sloping sides, of a series of cooling coils disposed adjacent the front wall of said bottom section, and a series of shelves in said bottom section and a display shelf adjacent the bottom of said top section with the sides thereof spaced from the sides of said top section, and means for circulating air over said cooling coils and over food placed on said shelves.

In testimony whereof I affix my signature.

CHARLES E. WICKE.