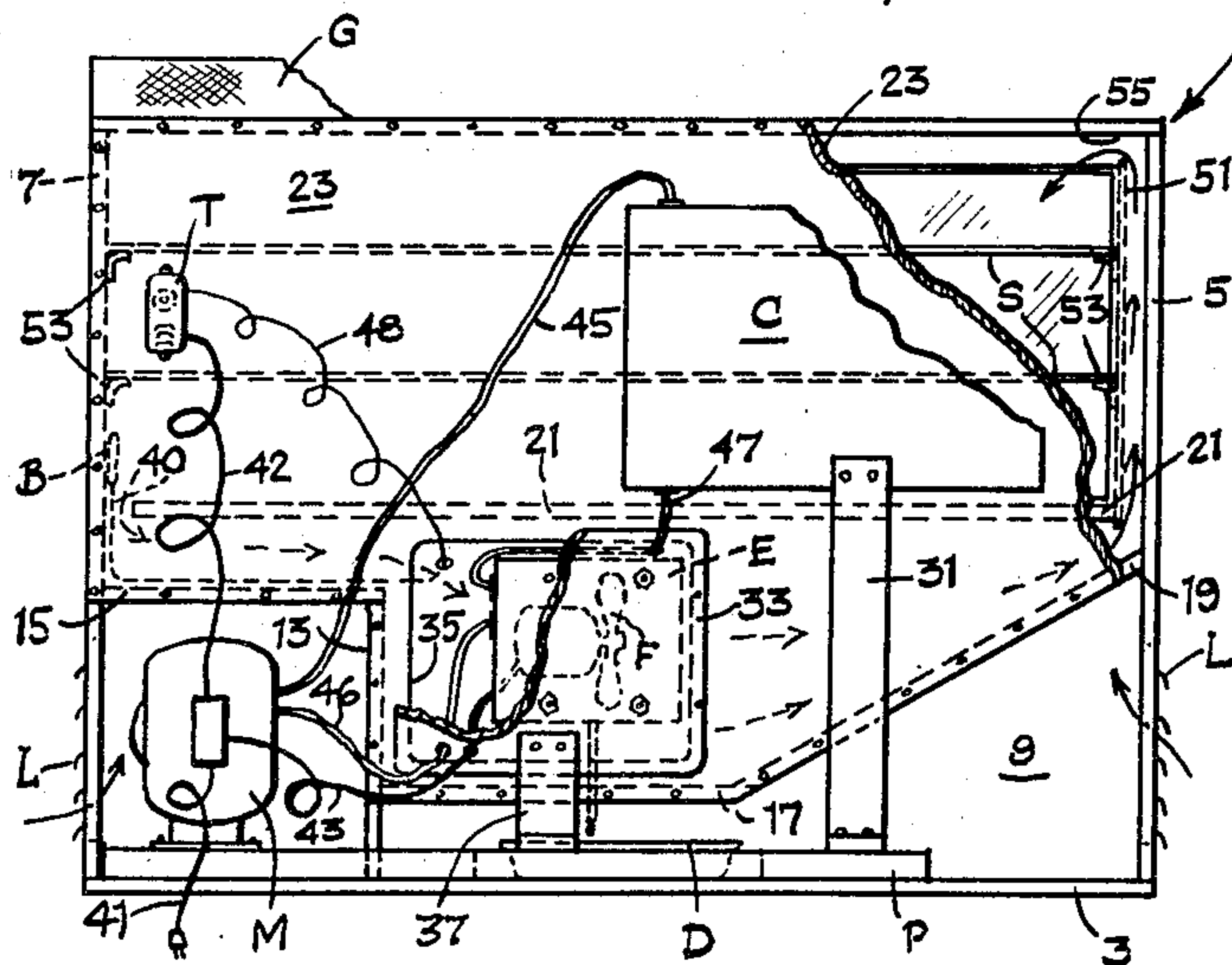
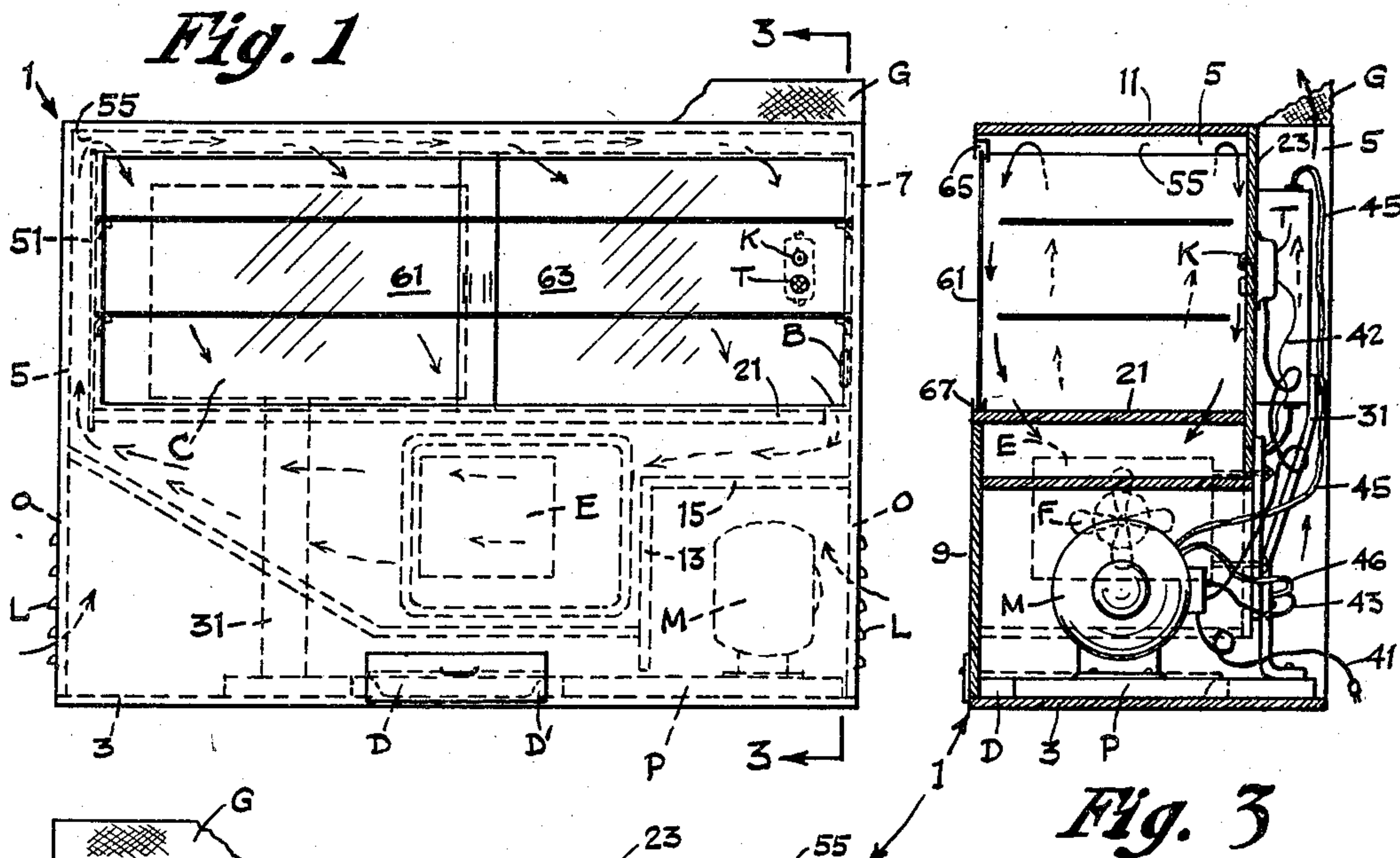
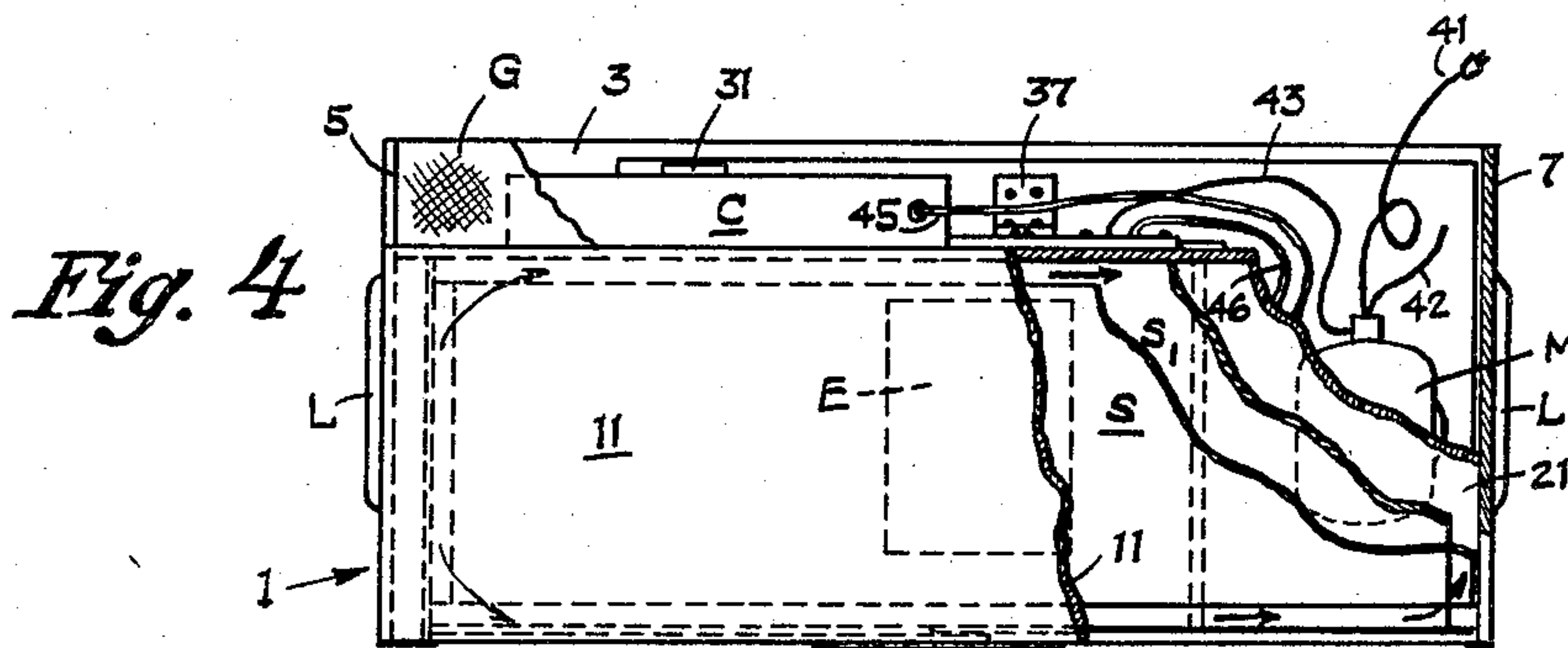


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REFRIGERATED DISPLAY CASE FOR CHILLED
PASTRIES AND SERVINGS OF FOOD
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REFRIGERATED DISPLAY CASE FOR CHILLED PASTRIES AND SERVINGS OF FOOD

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6 Claims. (Cl. 62—89.5)

This invention relates to a refrigerated display case for chilled pastries and servings of food. More particularly it relates to an attractive refrigerated pastry-display case designed for convenient mounting on the counter behind the waiters in counter-service restaurants, for their quick and easy access to the food. Still more particularly it relates to a refrigerated pastry-display case designed for quick and easy insertion of an air-cooling and -circulating apparatus which is preferably a prefabricated unit built according to the invention of this specification.

Refrigerated display cases of the prior art have been generally unsatisfactory. The types using air-cooling and circulating systems tend to dry out the food due to the passage of the greatly dehumidified air over the displayed items. The types employing gravity circulation also dry out the food, less by the air-velocity effect but more by the excessive dryness of the air resulting from the need of employing colder coils (usually ice-coated) where the circulation is slower. The cold-shelf type unevenly cools the displayed items. And all types have lacked the compactness and space-efficiency needed for mounting on the usual rear counter of counter-service installations.

It is accordingly an object of this invention to provide a refrigerated display case that effectively cools the displayed food servings with a minimum amount of dehydration.

It is another object to design a refrigerated display case that is efficient both as to quality and quantity of the display and as to space requirements and utilization.

It is a further object to provide a refrigerated display case that is economical in initial cost, operation, and repair (or replacement) of the wearing parts.

These and other objects and advantages of the invention will become apparent as the following detailed description proceeds.

In the drawings, in which like reference characters refer to the same parts thruout the several views:

Fig. 1 is a front elevational view of a preferred embodiment of the invention.

Fig. 2 is a rear elevational view of the refrigerated display case of Fig. 1.

Fig. 3 is an end elevational view in section taken on the line 3—3 of Fig. 1.

Fig. 4 is a plan view of the device of Fig. 1, the parts being progressively broken away upwardly and forwardly from the right rear corner.

With reference now to the drawings, the numeral 1 generally designates the cabinet structure, which is preferably formed of plywood or other fabricated boards so as to be proof against warping. A base board 3 supports the two boards 5 and 7 and the front half-panel 9, these parts being joined by nailing, gluing and/or other suitable expedients. A top panel 11 rests on the end boards 5 and 7.

A chamber for the sealed motor-and-compressor unit M is formed by an upright board 13 and a top board 15 both fastened to the front panel 9. Also fastened to the front panel 9 are the partitions 17, 19 and 21, the

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last-mentioned constituting the bottom of the refrigerated display space. These partitions 13—21 (except 21 which is preferably removably supported on brackets, not shown) are firmly fixed when the rear panel 23 is nailed against the rear edges of members 5, 7 and 11—19. It should be noted that the rear panel 23 does not touch base panel 3, its lower margin lying along the bottom surfaces of partitions 15, 17 and 19, which define the floor of the cooled part of the cabinet. Beneath this floor and resting on the base board 3 is the platform P for the refrigerating apparatus now to be described.

The platform P carries on its left end (Fig. 2) the sealed-unit motor-compressor M. Over the right rear corner of platform P, the condenser C is carried by a bracket 31 attached to the platform as shown. Between the condenser C and the motor-compressor M, the evaporator or cooling unit E is mounted on a closure panel 33 which covers opening 35 in the rear panel 23. A sealing and vibration-absorbing gasket (not shown) may be interposed between overlapped margins of closure 33 and opening 35. Panel 33 is attached to platform P by a shorter bracket 37. The evaporator unit E also includes a fan F by which air is forced over the cooling coils (not shown) and thru the circulation system of the cabinet later to be described.

The three basic units of the prefabricated refrigerating apparatus are thus mounted on platform P and do not need to be attached to the cabinet proper. The platform is merely slid into place resting on the base board 3; and as it is slid into place, compressor M, cooler E and condenser C move into the positions shown. Only the thermostatic switch T needs to be attached to the cabinet proper. This merely requires boring a hole to receive the control knob K (accessible for adjustment thru the front doors of the cabinet) and possibly a second hole for thermal-coupling between the thermostat bulb and the interior of the cabinet, as shown, altho one large hole could serve both purposes, if the adjustable control is mounted in the heat-exchange area of the device. For a more accurate temperature control, the bulb B of the thermostatic control can be mounted adjacent to the air-outlet 40, as shown, instead of in the control unit. For still more sensitive control, two interconnected bulbs can be used.

It should be noted that the base and end boards of the cabinet extend rearwardly beyond the rear panel 23 to form a four-sided housing for the condenser, brackets, electric wiring 41—43, and refrigerant and fluid conduits 45—48. This housing forms, with the usual wall against which the display case is set, a convection flue, open at its top and supplied with cooling air near its bottom thru openings O, covered by louvred plates L. The top of the flue is preferably covered by a wide-meshed screen or grill G, tilted, as shown, to prevent its being inadvertently covered by cartons, displays, etc.

The removable partition 21, which forms the bottom of the display space and the top of the refrigerating air-duct, terminates at both ends a few inches from the end boards 5 and 7 to form inlet and outlet openings for the circulated air (flow paths being indicated by arrows). To channel the cooled air to the top of the display space a duct-forming plate 51 is employed. This plate 51 carries brackets 53 by which the (glass) shelves S are supported. Duct-forming plate 51 terminates short of the top panel 11 to form an air inlet opening 55, and shelves S are several inches narrower than the width of the display space whereby the cooled air flows downwardly past both edges of the shelves to form a "cold blanket" which keeps the food servings cool but which minimizes the dehydrating contact of the air-streams with the food.

The visible exterior and interior surfaces are preferably covered with sheet stainless-steel, Monel metal, alumi-

num, etc., but they may be enameled or otherwise surfaced. The cooling ducts may be lined with corrosion-resistant metal such as galvanized iron, copper, aluminum, etc.

Below the evaporator or cooling coils E, a drip pan D is set to catch condensed moisture from said coils. Drip pan D sits in a notched recess in the platform and is mounted on a closure panel D' for an opening in the front panel of the cabinet to facilitate emptying the drip pan D. It should be noted, at this point however, that very little condensation occurs, since the rapid air-circulation normally prevents the air from being chilled below its dew point and since very little moisture is extracted from the food as a result of the minimized contact between it and the flowing air.

The display case is closed by a pair of laterally sliding glass doors 61 and 63 which overlap slightly when closed. These doors slide in upper and lower guide channels 65 and 67, the latter being preferably provided with rollers (not shown). The upper channel 65 is considerably deeper than the lower channel 67, whereby the doors 61 and 63 can be lifted to free their lower edges for removal (for cleaning, replacement, etc.).

It is preferable that the doors be equipped with automatic closing-devices, such as springs, weights and pulleys, etc. (not shown) to insure closure thereof when not in use.

While I have disclosed a preferred illustrative embodiment of my invention, it is to be understood that many changes can be made in the size, shape, composition and arrangement of the several parts without departing from the spirit of the invention defined by the subjoined claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A refrigerated pastry display case, comprising: laterally elongated base and top panels; vertically elongated end panels; a rear panel; a front panel comprising a lower half-panel and a plurality of transparent doors forming an upper half-panel; a plurality of long narrow shelves underlying said top panel and spaced somewhat from said rear and front panels along their edges to form vertical air-passages along the inner faces of said rear and front panels; a horizontal partition dividing said case into an upper display section and a lower refrigerating section; refrigerating apparatus, including a forced-circulation air-cooler located beneath said partition; and duct means connecting said air-cooler to the top and bottom of said display section to form a closed

air-circulation system producing thin blanket-shaped air-streams between the edges of said shelves and the inner surfaces of said rear and front panels.

2. A device according to claim 1 and additionally comprising a relatively thin condenser paralleling the back surface of the rear panel, said end panels extending rearwardly beyond said rear panel to form a flue for said condenser and a space for electric wiring and refrigerant conduits.

3. A device according to claim 2 and additionally comprising a grill covering the upper end of said flue, said grill being tilted upwardly so as to prevent circulation-impeding covering of the discharge end of said flue.

4. A device according to claim 1 and additionally comprising a second partition underlying said first-mentioned partition, said second partition extending first horizontally from an end panel and then downwardly to form a housing for a motor and compressor, then horizontally to define a space between itself and said first-mentioned partition for said air-cooler, and then upwardly inclined to form a constricting air-duct leading from said air-cooler to the opposite end panel.

5. A device according to claim 4 and in which said first-mentioned partition terminates at each end somewhat short of said end panels to define air-inlet and air-outlet openings communicating between the display section above said first-mentioned partition and the cooling and circulation duct system between and defined by said partitions.

6. A device according to claim 1 and in which said air-cooler comprises a prefabricated unit including a base structure, a motor-driven compressor attached thereto, a forced-circulation air-cooling mechanism mounted on a vertical panel carried by said base structure, and a condenser also carried by said base structure, said unit being adapted for sliding into said case from the rear thereof, said vertical panel serving as a closure for an opening in the rear panel communicating with the refrigerating section of said case.

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