

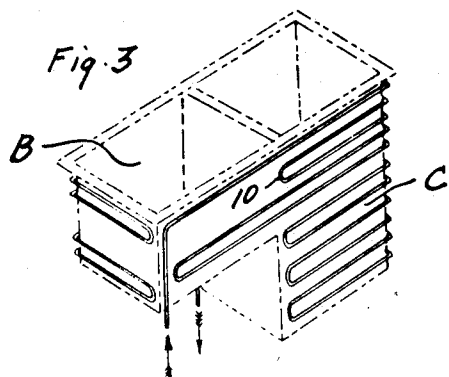
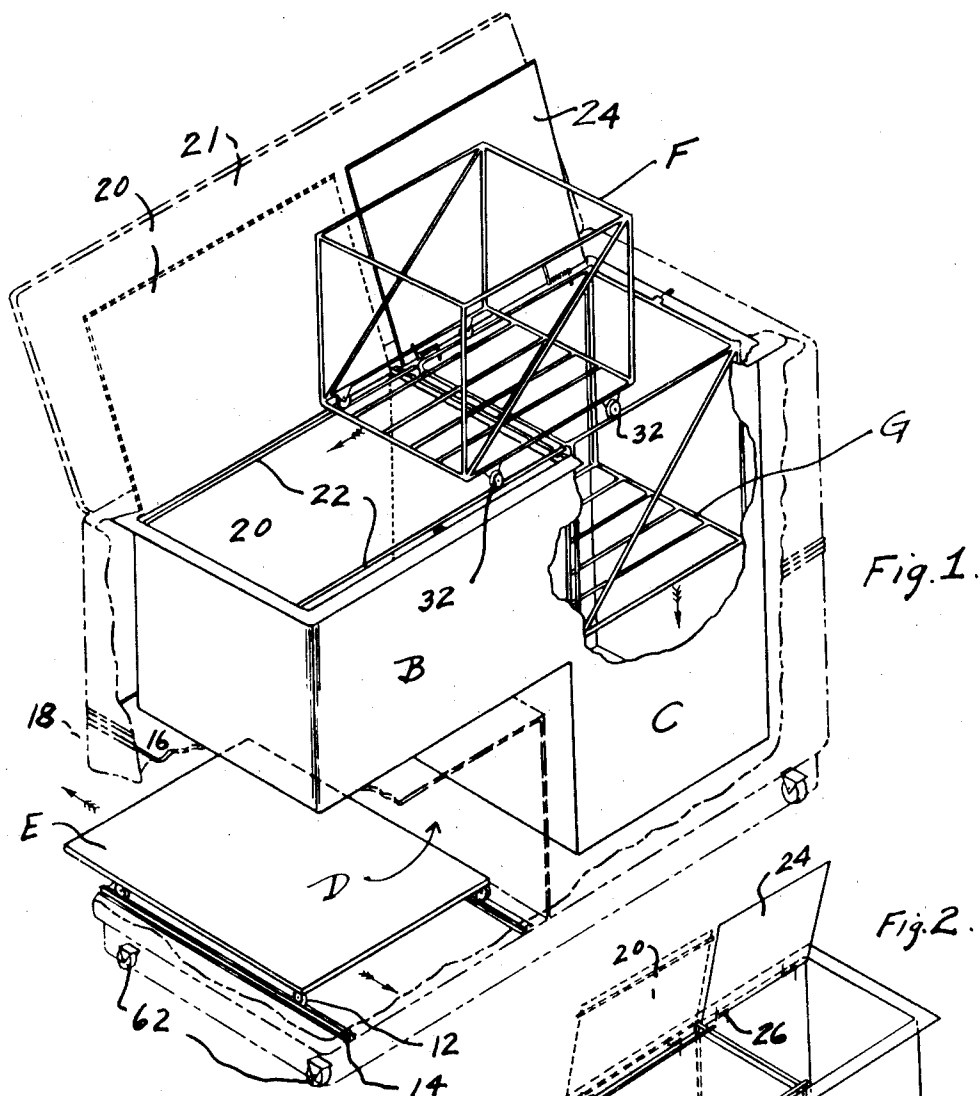
Feb. 14, 1950

R. J. KUKLICH
FOOD FREEZER

2,497,734

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2 Sheets-Sheet 1



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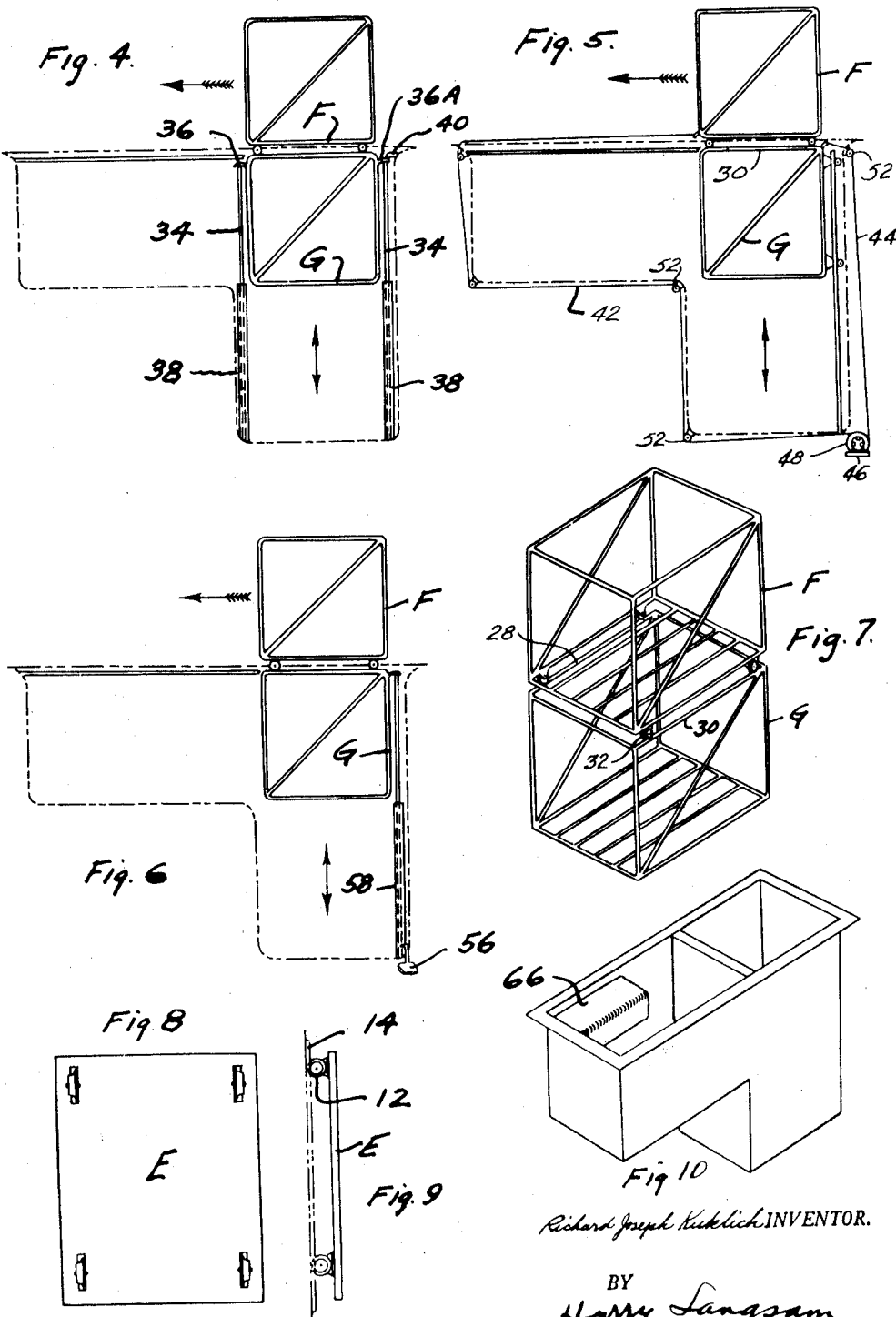
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FOOD FREEZER

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2 Claims. (Cl. 62-89)

1

My invention relates to refrigeration and in particular to a combination refrigerator and food freezer which is suitable for household or commercial use.

It is an object of my invention to provide a structure which may be used both as an ordinary refrigerator, and also as a deep freeze unit for freezing and storing perishables over a long period of time.

Another object of my invention is to provide a structure which will have a larger storage capacity by virtue of space-utilization means more efficient than those of the prior art.

Another object of my invention is to provide a refrigerator which offers easy access to its refrigeration machinery, and which facilitates the use of interchangeable units in applications where it is important to keep service interruption at a minimum, for example, in the storage of penicillin.

Still another object of my invention is to provide a novel food storage and handling system that is rapid, efficient and easy to use.

Other objects of my invention are to provide an improved device of the character described, that is easily and economically produced, which is sturdy in construction, and which is highly efficient in operation.

With the above and related objects in view, my invention consists in the details of construction and combination of parts, as will be more fully understood from the following description, when read in conjunction with the accompanying drawing in which:

Fig. 1 is a partly sectional perspective view of the invention.

Fig. 2 is a perspective view of the refrigerator and freezer compartments and their respective covers.

Fig. 3 is a perspective view of the compartments shown in Fig. 2, illustrating the lining of refrigeration tubing about the compartment.

Fig. 4 is a sectional front view of the compartments showing the storage basket conveyor system using a hydraulic or a spring elevator means.

Fig. 5 is a modification of the basket conveyor shown in Fig. 4, in which an electric motor and a cable is used to elevate the storage baskets.

Fig. 6 is a second modification of the basket conveyor in Fig. 9, in which the basket elevator is mechanically foot-operated.

Fig. 7 is a perspective view of the storage baskets.

2

Fig. 8 is a bottom view of the refrigeration machinery carriage.

Fig. 9 is a side view of the carriage shown in Fig. 8.

Fig. 10 is a perspective view of the foot storage compartments showing the placement of an ice cube compartment.

Referring now to the drawings, wherein similar reference characters refer to similar parts, I show a combination refrigerator and deep freezer, divided into three main compartments, B, C, and D. These compartments are thermally insulated from each other by a layer 16 of glass fiber or other insulators of heat. The compartment D, shown in a lower corner, houses the refrigeration machinery (not shown) which may be of the conventional compressor - condenser - expander type. This machinery is connected to the refrigeration coils 10 which surround the compartments B and C.

The refrigerant which emerges from the expansion valve of the machinery is conducted into one end of the coils 10 and circulates through the length of the coil tubing which is preferably of aluminum or copper. The refrigerant emerging from the other end of the coils passes into the compressor inlet is indicated by the arrows of Fig. 3. The ends of tubing 10 are provided with quick detachable couplings (not shown) and the entire refrigeration apparatus, exclusive of the coils, is mounted upon the wheeled carriage or skid E. Accordingly, the machinery is easily removed through the rear door 18 compartment D for servicing or quick replacement.

The carriage E is provided with flanged wheels 12 and cooperating tracks 14 are laid on the door of the compartment D.

The refrigerator compartment B extends directly over the compartment D, and is maintained at a temperature of approximately 36° F. by its portion of the refrigeration coils. The refrigerator compartment is provided with an individual cover 20 as shown in Fig. 2, upon which the tracks 22 are laid near the front and rear edges and parallel thereto.

Although the compartments B and D are shown on the left side of the combination they may be located on the right side thereof if this is more convenient.

The freezer compartment C occupies an entire end of the combination A, and is maintained at a temperature of approximately -14° F. by the surrounding portion of refrigerating coils 10. It is pointed out that the same coils are used to cool both the freezer and refrigeration compart-

ments B and C respectively, the difference in their respective temperatures being obtained by lining the freezer compartment with about four times the length of tubing as is provided in the lining of the refrigerator compartment.

In order to render all parts of the freezer compartment C accessible two cubical storage baskets, constructed preferably of steel or aluminum, are provided. Attached to the underside of the top basket F are flanged wheels or rollers 32 which rest upon the upper frame members 28 and 30 of the lower storage basket G as shown in Fig. 7.

Elevating means, which may be hydraulic or spring pistons as shown in Fig. 4, or an electric motor and drive cable as shown in Fig. 5; or a mechanical foot-pedal jack as shown in Fig. 6. The lower basket G is raised until its top is level with the tracks 22 on the refrigerator compartment cover 20. The upper basket F may now be rolled sidewise onto the refrigerator compartment cover exposing the contents of the lower basket G.

The hydraulic or spring elevator shown in Fig. 4 consists of a pair of cylinders 38 located on opposite sides of the freezer compartment and containing either a fluid under pressure or a spring which is longitudinally compressible (not shown). When the freezer compartment cover 24 is released the pistons 34 bear against the lugs 36 and 36A which are attached to the opposite sides of the lower basket F and raise the basket to the proper level. The baskets are restrained from rising higher by a projection 40 on the compartment wall which engages the lug 36 on the lower basket, as shown in Fig. 4. The compression springs used in the pistons should not be strong enough to raise the baskets F and G when both are fully laden, since this would make it difficult to depress the baskets when both are empty. However, the compression strength should be sufficient to carry the weight of one basket when fully laden, so that the user need exert a comparatively small force to raise or lower the basket. The main purpose of the springs is to reduce the force needed to lift the bottom basket, since this task is especially arduous when the housewife is bent over the cabinet.

In Fig. 5, I show a modification of the elevating means used in any invention in which the baskets are raised by a steel cable 44 which winds on one section of a double pulley 48 turned by

an electric motor 46. Another steel cable 42, which winds on the second section of the double pulley, moves the upper basket sideways onto the refrigerator cover 20 so as to expose the lower basket. The pulleys 52 are placed upon the exterior walls of the compartments to support the cables at the bends or corners indicated. In Fig. 6, I show a second modification of the elevator used in my invention, a mechanical elevator which employs a foot pedal actuator 56 coacting with a rack 58 in the manner of an automobile jack.

Although my invention has been described in considerable detail, such description is intended as being illustrative rather than limiting, since the invention may be variously embodied, and the scope of the invention is to be determined as claimed.

I claim as my invention:

1. In combination, a refrigerator compartment and a freezer compartment adjacent to one another, a single housing for said compartments, said refrigerator and said freezer compartments adapted to be opened from the top, said freezer compartment being deeper than the compartment of said refrigerator, at least two vertically positioned baskets in said freezer compartment, the upper edge of the lower basket having rails, the lower edges of the upper basket having rollers thereon to ride upon said rails, and the refrigerator compartment having a pair of rails therein whereby said upper basket may ride thereon.

2. My invention as set forth in claim 1 including actuating means located external to said compartments to elevate said baskets

RICHARD JOSEPH KUKLICH.

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