

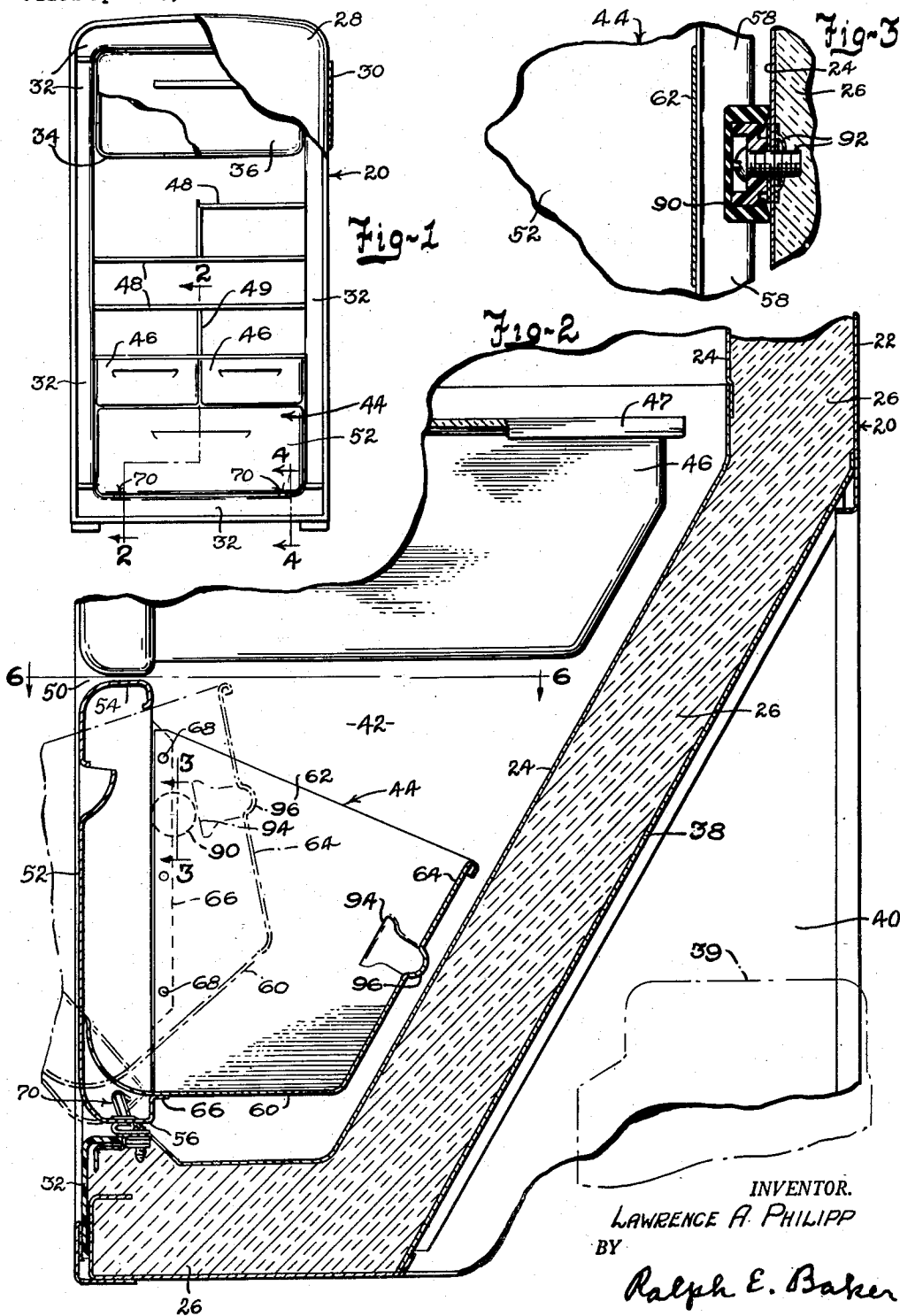
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L. A. PHILIPP
TILTABLE BIN

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2 Sheets-Sheet 1



INVENTOR.
LAWRENCE A. PHILIPP
BY
Ralph E. Baker
Attorney

July 21, 1953

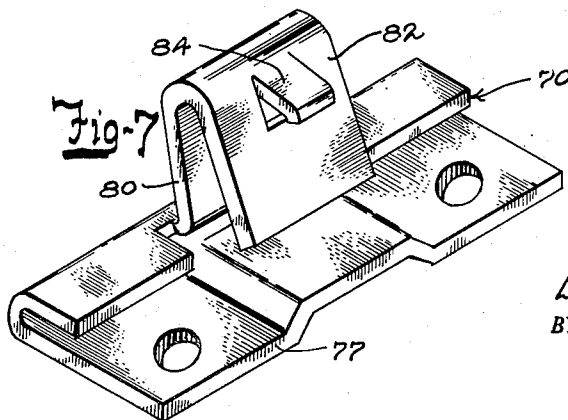
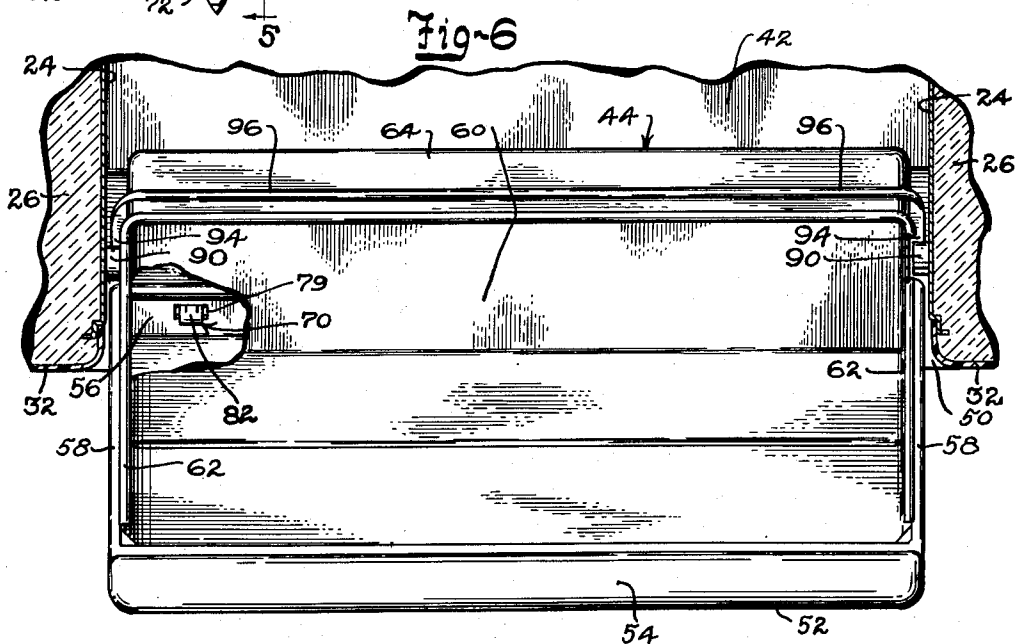
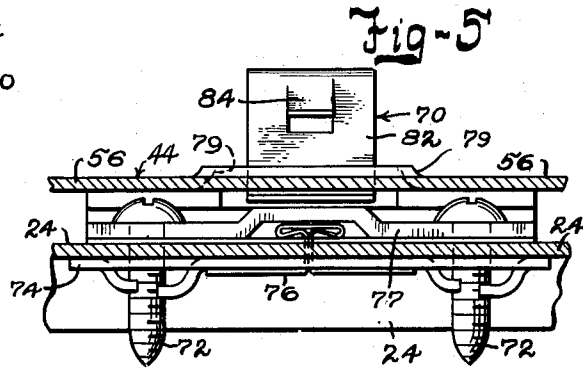
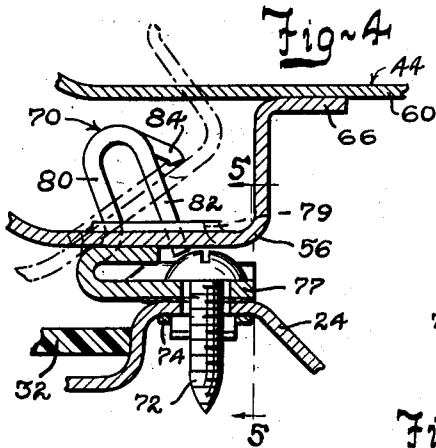
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TILTABLE BIN

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2 Sheets-Sheet 2



INVENTOR.
LAWRENCE A. PHILIPP
BY

Rolph E. Baker
Attorney

UNITED STATES PATENT OFFICE

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TILTABLE BIN

Lawrence A. Philipp, Detroit, Mich., assignor to
Nash-Kelvinator Corporation, Detroit, Mich., a
corporation of Maryland

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1 Claim. (Cl. 312—328)

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This invention relates generally to refrigerating apparatus and more particularly to a refrigerator cabinet and tiltable storage bin therefor.

One of the objects of the present invention is to provide for a refrigerating apparatus, an improved arrangement of a tiltable storage bin and associated parts including a refrigerator cabinet.

Another object of the invention is to provide an improved arrangement of hinging a tiltable bin in a refrigerator cabinet so as to facilitate assembly and generally decrease cost of refrigerator manufacture.

Another object of the invention is to provide an improved arrangement of a tiltable storage bin and refrigerator cabinet which may be assembled by merely setting the bin in place in the cabinet and to provide against accidental dislodging of the bin.

Another object of the invention resides in the effectiveness and economy of the provision of stops for limiting outward tilting movement of the bin.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a front view of a refrigerator, partly broken away to show the interior thereof;

Fig. 2 is an enlarged, fragmentary sectional view of the refrigerator, taken along the line 2—2 of Fig. 1;

Fig. 3 is a detailed sectional view of the refrigerator, taken along the line 3—3 of Fig. 2;

Fig. 4 is an enlarged, fragmentary sectional view of the refrigerator, taken along the line 4—4 of Fig. 1;

Fig. 5 is a sectional view of the refrigerator, taken along the line 5—5 of Fig. 4;

Fig. 6 is a horizontal cross sectional view of the refrigerator, taken substantially along the line 6—6 of Fig. 2, showing my storage bin in its forward tilted position; and

Fig. 7 is an enlarged, isometric view of a hinge pintle for the tiltable bin.

In the drawings, the refrigerating apparatus shown is of the household type having a cabinet, designated generally by the numeral 20. Preferably, the construction of the cabinet 20 includes a metal casing 22 and a metal liner 24. Interposed between the casing 22 and the liner 24, heat insulation 26 may be provided of any well known suitable type. The liner 24 forms the walls of a

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cooled storage space which in the present construction extends substantially from top to bottom of the cabinet. An access door opening in the front of the cabinet may be closed by a suitable door 23 which may be hinged, as at 30, to one side of the cabinet. Around the door opening, the spaced edges of the casing 22 and liner 24 may be covered by so-called breaker strips 32 which, in addition to decreasing heat conductivity between the liner and the casing, serve to give a finished appearance to the cabinet.

Within the cabinet 20, adjacent the top thereof, is a cooling element or refrigerant evaporator 34 which may be of any suitable type adapted to cool the cabinet storage space. In the present construction, the refrigerant evaporator 34 extends substantially entirely across the width of the storage compartment and substantially from front to rear thereof. This evaporator 34 may be of the type having a storage space therein for foods and ice trays, (not shown) and the front of the evaporator may be closed by a hinged door 36.

At the bottom of the refrigerator cabinet, the rear wall thereof, is preferably inclined, as at 38, extending upwardly and rearwardly from the cabinet bottom wall to provide a machinery compartment 40 at the back of the cabinet within the confines of the cabinet walls. A refrigerant condensing apparatus which may include a motor-compressor unit 39 may be suitably mounted in the machinery compartment 40 and be operatively connected to the evaporator 34 by supply and return lines (not shown), in the well known manner. Lower side wall portions of the cabinet liner 24 together with the inclined, rear wall liner 38 form a storage compartment 42 forwardly of the machinery compartment 40, and in the compartment 42 I provide a tiltable bin, designated generally by the numeral 44. Immediately above the bin 44, a pair of laterally positioned containers 46 may be provided for the storage of fresh vegetables and above these storage containers, the cabinet may have a number of shelves 48 which may be arranged, as shown, or may be arranged in any other suitable manner. The containers 46 may be supported on slideways 47 secured to opposite sides of the liner 24 and to an upright 49.

The lower front edges of the containers 46, the lower side edges of the breaker strip 32, and the upper edge of the bottom breaker strip 32 define an opening 50 for the bin compartment 42. Closing the opening 50 is a closure member or door 52 which forms the front of the bin 44. The bin front 52 may be of general rectangular

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shape having inwardly extending reinforcing flanges including a top flange 54, bottom flange 56 and end flanges 58. As shown in Figs. 2 and 6, the bin 44 is a box-like structure having a bottom wall 60, side walls 62, a back wall 64 and the bin front wall or closure member 52. The bin front wall 52 may be provided with rearwardly extending flanges 66 to which the bin sides and bottom may be secured by rivets 68 or by any other suitable means.

In accordance with my invention, I hinge the bin 44 loosely on a pair of upstanding pintles 70 of a character and arrangement such that the bin may be assembled to the cabinet merely by setting the bin in place, loosely engaging over the pintles. The pintles 70 are rigidly secured to the bottom of the liner 24 by sheet metal screws 72 which may be screw-threaded into retainer plates 74 held against the bottom of the liner. A suitable clip, such as the clip 76 shown in Fig. 5, may be used for holding the retainer plates 74 in place prior to application of the screws 72. There are preferably two and may be more of the pintles 70; these pintles being spaced apart across the width of the cabinet on the lower edge of the door opening.

The pintles 70 may be made of sheet metal, each having a flat base portion 77 to receive the screws 72 by means of which the pintle base portions may be secured flat against and to the lower edge of the door opening. Extending upwardly from the base 77, an intermediate pintle portion 80 extends preferably forwardly at a slight angle to the vertical and then reverses having a downwardly extending portion 82 extending at an angle and rearwardly toward the pintle base 77. In the bottom edge of the bin front wall flange 56, apertures 78 are provided to receive the spaced pintle portions 80 to retain the tiltable bin in its desired position. Formed out of each of the reversely bent pintle portions 82 is a stop 84 which I provide for the purpose of preventing accidental dislodging of the bin from the pintles. The stops 84 in the form of lugs extend inwardly and slightly downwardly for abutment of their lower ends with the lower edge of the bin front wall flange 56, as illustrated for example by dot and dash lines in Fig. 4. Carried by the liner side walls is a pair of oppositely disposed bumper type stop members 90 which are provided for limiting tilting movement of the bin in opposite directions. These bumper stops 90 may be made of rubber, as indicated in Fig. 3, and may be respectively secured to the liner sides by suitable screws and nuts 92. The stops 90 project into the compartment 42 in the path of the bin side flanges for engagement thereby to limit inwardly tilting movement of the bin. Outward tilting movement of the bin 44 is limited by engagement of stops 94 on the bin with the bumper stops 90. In order to provide the stops 94 economically, I form the bin back wall 64 with a reinforcing rib 96 which I extend entirely across the width of the bin and partway forwardly of

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the bin sides, terminating the reinforcement in the forwardly facing, laterally disposed abutments or stops 94. These stops 94 are arranged so that on forward tilting of the bin they will engage the rubber bumper stops 90 prior to engagement of the bottom bin flange 56 with the pintle stops 70. The pintle stops 70 prevent accidental dislodgement of the bin from the pintles when, for example, the bin may be lifted at the front thereof as it is being tilted back into the cabinet.

From the foregoing description, it will be understood that I have provided an improved pivoted arrangement of a tiltable bin and cabinet which facilitates assembly thereof since the bin need not be fixed by a hinge to the cabinet, but instead may simply be set in place in the cabinet onto pintles. Also, it will be understood that I have provided a tiltable bin having the above mentioned assembly advantage without danger of the bin being accidentally dislodged from the cabinet. In addition, I have economically provided stops on the bin of a character which also serve to reinforce the bin.

Although only a preferred form of the invention has been illustrated, and that form described in detail, it will be apparent to those skilled in the art that various modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claim.

I claim:

A sheet metal tiltable bin mounting comprising, a base portion, a seat portion for the bin overlying and spaced above said base portion, a rounded fulcrum edge for the bin formed by bending the seat back over said base joining said base and seat portions together at the front of the mounting, an upstanding pintle formed out of said seat portion in the form of an inverted V having one leg joining said seat portion adjacent said fulcrum and the other leg extending downwardly and rearwardly of said seat portion and a downwardly directed stop member formed out of said other leg extending rearwardly and downwardly to limit tilting of the bin.

LAWRENCE A. PHILIPP.

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