

[54] **BASE GRILLE OF A HOUSEHOLD REFRIGERATOR**

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[51] Int. Cl.² **B65D 45/20; B65D 43/00**

[58] Field of Search **312/214, 236, 237, 257 R;**
220/306 X; 219/10.55

[56] **References Cited**

UNITED STATES PATENTS

2,603,548 7/1952 Harbison 312/237

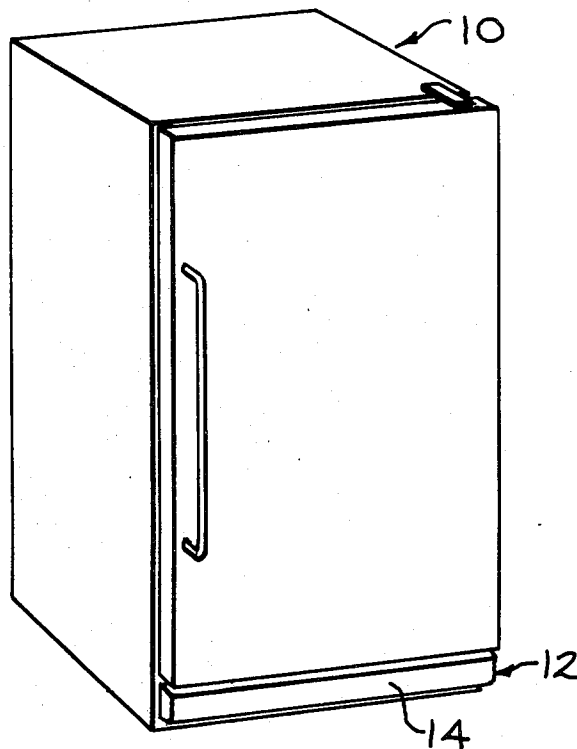
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Primary Examiner—Casmir A. Nunberg

[57] **ABSTRACT**

A base grille of a household refrigerator has a movable hinge element integrally formed with a second wall of the grille and associated with a latch element integrally formed with a first wall of the grille. The hinge element has a friction type connecting element for attaching the grille to the refrigerator.

2 Claims, 4 Drawing Figures



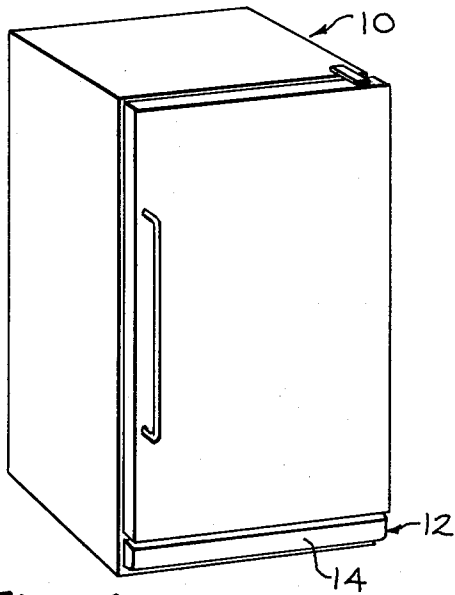


FIG. 1

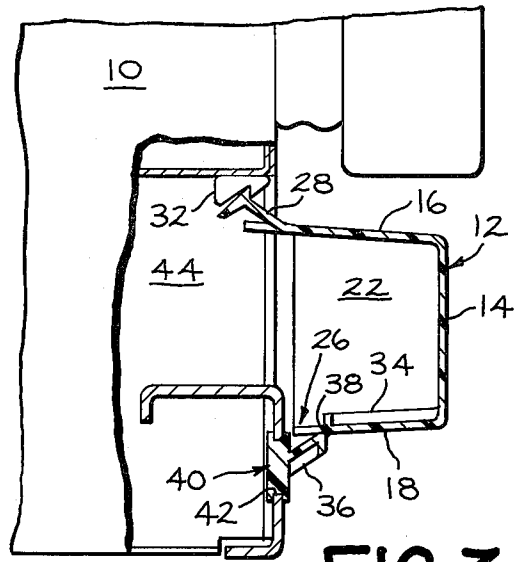


FIG. 3

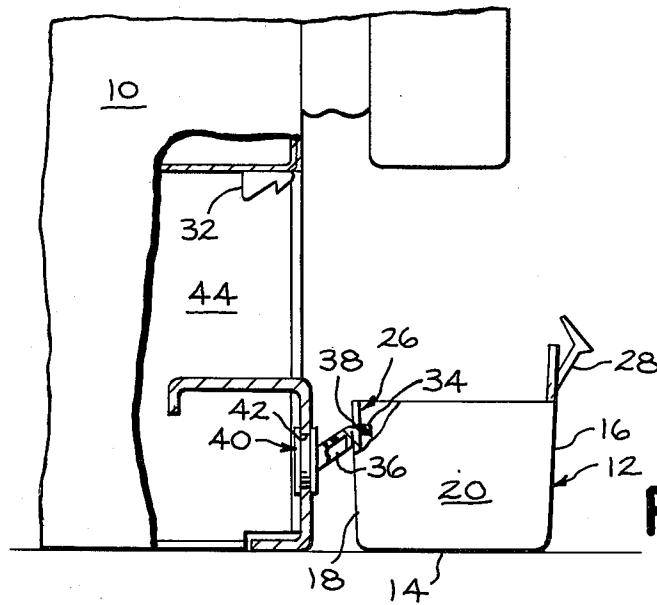


FIG. 4

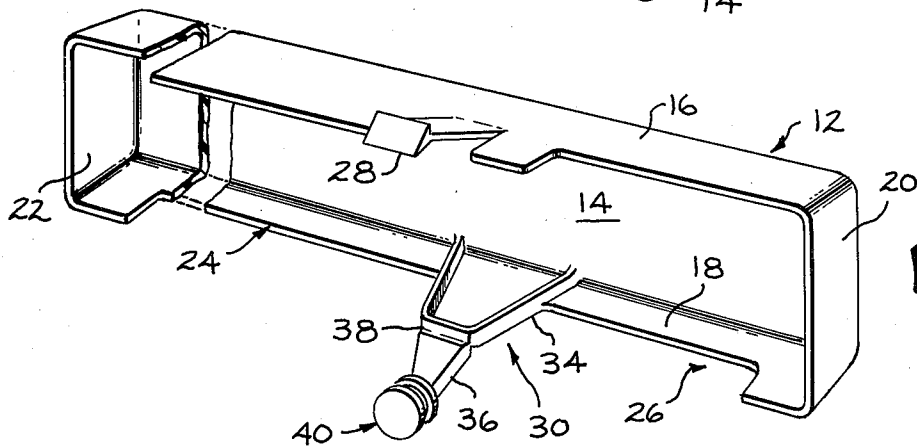


FIG. 2

BASE GRILLE OF A HOUSEHOLD REFRIGERATOR

BACKGROUND OF THE INVENTION

Movable base grilles are generally provided along the lower portion of a household refrigerator below the door. The grille covers an access opening into a lower compartment of the refrigerator which is a housing for refrigerating machinery and adjustable leg supports of the refrigerator. Since adjustment of the refrigerator legs and refrigerating machinery is sometimes necessary, it is desirable that the grille be hingedly connected to the refrigerator.

On heretofore utilized base grilles, as for example the grille of U. S. Pat. No. 2,603,548-Harison, the grille was generally formed of metal, was connected to the refrigerator by metal hinge elements positioned at the sides of the grille, had louvers or holes formed there-through for the passage of air into the lower machinery compartment and was fixed to the refrigerator by screws, bolts, or metal clips.

Owing to the operational vibrations of the refrigerator, the movement of the parts during the gaining of access into the machinery compartment, and/or impacts on the base grille during normal use of the refrigerator, these base grilles having numerous metal, separable parts, sometimes became loosened which caused the grille to rattle during operation of the refrigerator, become detached from the refrigerator, and/or damaged.

By constructing the grille as in the instant invention, the aforementioned problems are solved, the grille and connecting elements are formed of fewer parts, less labor is required to install the grille, and waste of material and labor is avoided.

SUMMARY OF THE INVENTION

In accordance with this invention, a movable base grille of a household refrigerator has a face, first and second walls, first and second end walls, a catch element, and a hinge element. The catch element is adjacent and extends beyond the first wall and is angularly disposed relative to the first wall. The hinge element has first and second hingedly connected leaves and a friction-type connecting element on the terminal end of the second leaf. The hinge element extends from the face along the second wall and terminates at a location beyond the second wall. The first leaf is positioned adjacent the face and the second wall and the second leaf extends outwardly from the hinge connection.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a household refrigerator having the apparatus of this invention;

FIG. 2 is a perspective view of the grille of this invention; and

FIGS. 3 and 4 are partial, sectional views of the grille at first and second positions relative to the refrigerator.

DETAILED DESCRIPTION OF THE INVENTION

In the embodiment of FIG. 1, a household refrigerator 10 has the movable base grille 12 of this invention. The grille 12 has a face 14 that is a generally planar structure and is free of openings extending there-through for forming a structure that is easily cleaned.

Referring to FIG. 2, the grille 12 has first and second walls 16, 18 integral with and extending outwardly in a common direction from the grille face 14. First and

second end walls 20, 22 are integral with the face 14 and first and second walls 18, 20 and extend outwardly from the face 14 in said common direction.

The second wall 18 has a width sufficient so that an outer terminal edge portion 24 of the second wall 18 is spaced from the refrigerator 10 in the installed and hereafter more fully described latched position for providing an air passage 26 (see FIG. 3) between the grill 12 and the refrigerator 10.

The face 14, walls 16, 18, 20, 22, and hereafter more fully described catch element 28 and holding element 30 of the grille 12 of this invention are integrally formed of an organic plastic, such as polypropylene for example, and form a unitary grille 12.

Referring to FIGS. 2-4, the catch element 28 is adjacent and extends beyond the first wall 16 and is angularly disposed relative to said first wall 16 for cooperating with a holding element 32 of the refrigerator 10. The catch element 28 is movable for latching into and releasing from the holding element 32 for releasably connecting the grille 12 to the refrigerator 10.

The hinge element 30 (better seen in FIG. 2) has first and second hingedly connected leaves 34, 36. The hinge element 30 extends from the face 14 along the second wall 18 and terminates at a location beyond the second wall 18.

The first leaf 34 forms the portion of the hinge element 30 that is positioned adjacent the face 14 and the second wall 18. The first leaf 34 is hingedly connected at its outer end to the inner end of the second leaf 36. Since the grille 12 is formed of organic plastic material, the hinge connection 38 of the hinge element 30 is formed by reducing the mass of the hinge element 30.

The second leaf 36 extends outwardly from the hinge connection 38 and has a friction-type connecting element 40 positioned at the outer terminal end of the second leaf 36.

The friction-type connecting element 40 can be of any construction which is adapted for insertion into an opening of the refrigerator 10 and releasably, frictionally connecting the second leaf 36 to the refrigerator 10. It should be understood that by the term "friction-type connection" it is meant a structure that is forced into an opening and maintained in the opening by the friction between the parts or frictional contact between the parts during the imparting of removal forces. These friction-type connecting elements exclude screws, bolts, clips, or other separate structures which are they, themselves, not fixedly connected to the hinge element. An example of the friction-type connecting structure of this invention is the deformable spool structure shown in FIGS. 2-4 which is pushed into the refrigerator opening 42 and frictionally maintained in that opening 42. Plastic or "pop-snaps" of arrow or other configuration can also be utilized.

It should also be understood that there can be a plurality of hinge elements 40 and/or catch elements 28.

In the operation of the apparatus of this invention, referring to FIGS. 3 and 4, the catch 28 in FIG. 3 is biased upwardly by its construction and is locked into the catch of holding element 32, thereby maintaining the grille 12 at a first, latched, or closed, position.

When access is desired into the machinery compartment 44 of the refrigerator 10, the catch element 28 is depressed downwardly with the operator's finger, for example, which removes the catch element 28 from contact with the holding element 32, thereby permit-

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ting the grille 12 to be pivotally moved about the hinge connection 38 to the second, or open, position as shown in FIG. 4.

The grille 12 can be moved from the open position to the closed position by pivoting the grille 12 upwardly and the catch element 28 into latching engagement with the holding element 32.

Other modifications and alterations of this invention will become apparent to those skilled in the art from the foregoing discussion, and it should be understood that this invention is not to be unduly limited thereto.

What is claimed is:

1. A movable base grille of a household refrigerator having a face, first and second walls, first and second end walls, a movable integral catch element adjacent and extending along the first wall and being angularly disposed relative thereto, and a movable integral hinge element extending from the face along the second wall

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and terminating at a location beyond the second wall, said hinge element having first and second hingedly connected leaves, said first leaf being positioned adjacent the face and the second wall, said second leaf extending outwardly from the hinge connection and having a friction-type connecting element at the end of said second leaf, said connecting element being of a spool configuration adapted for insertion into an opening in the refrigerator for fixedly, releasably attaching the grille to the refrigerator and said second wall of the grille having an outer terminal edge portion spaced from the refrigerator in the installed and latched position for providing an air passage beneath the grille and the refrigerator.

2. Apparatus, as set forth in claim 1, wherein the face is a generally planar structure free of openings extending therethrough.

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