

[54] **HINGE FOR COVER LID ON CHESTS**

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Related U.S. Application Data

[63] Continuation of Ser. No. 356,736, May 3, 1973, abandoned.

[52] U.S. Cl. **16/190**

[51] Int. Cl. **E05f 1/12**

[58] Field of Search **16/82, 85, 180, 190**

References Cited

UNITED STATES PATENTS

2,279,992	4/1942	Jackson	16/190
2,822,568	2/1958	Hosea	16/190
3,103,693	9/1963	Tenniswood et al.	16/190
3,638,277	2/1972	Coe	16/190

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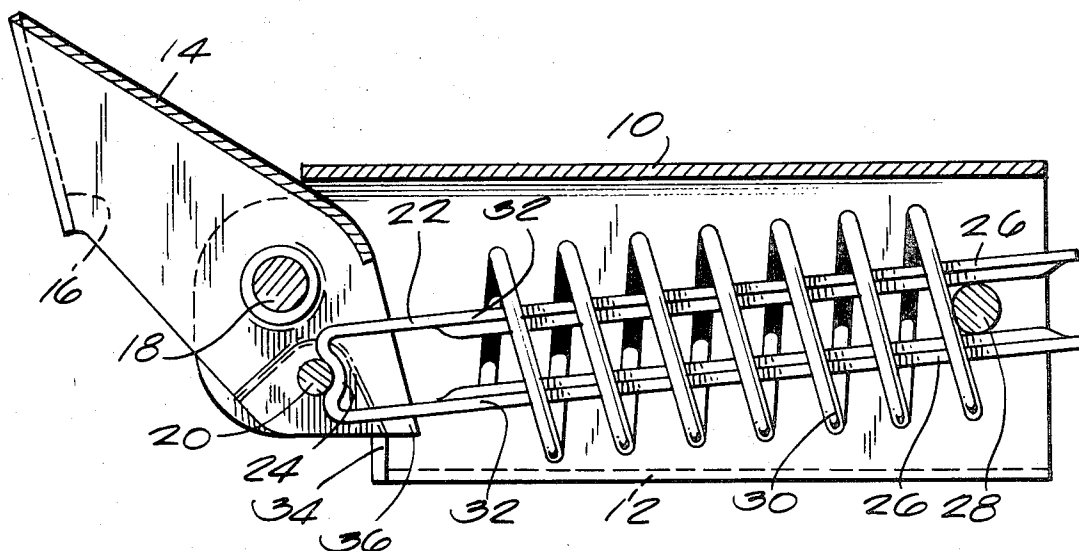
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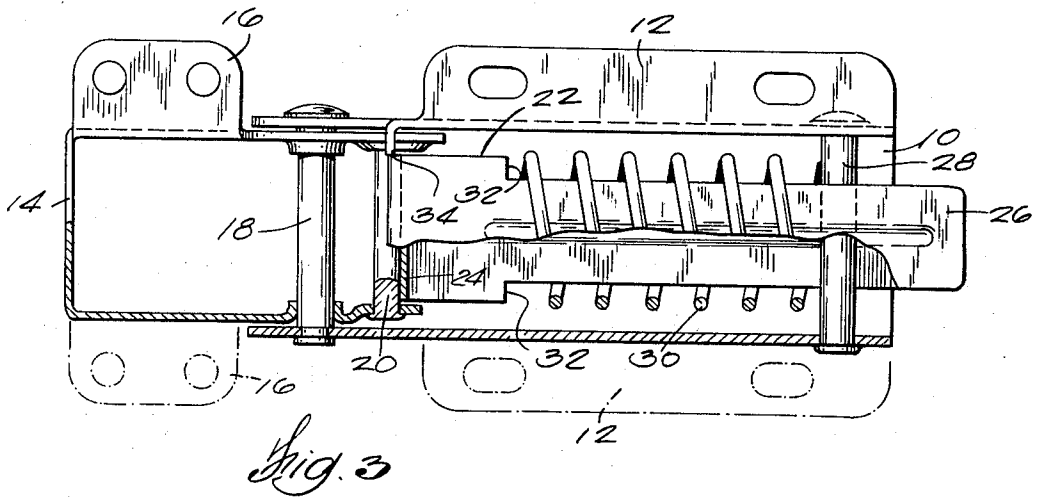
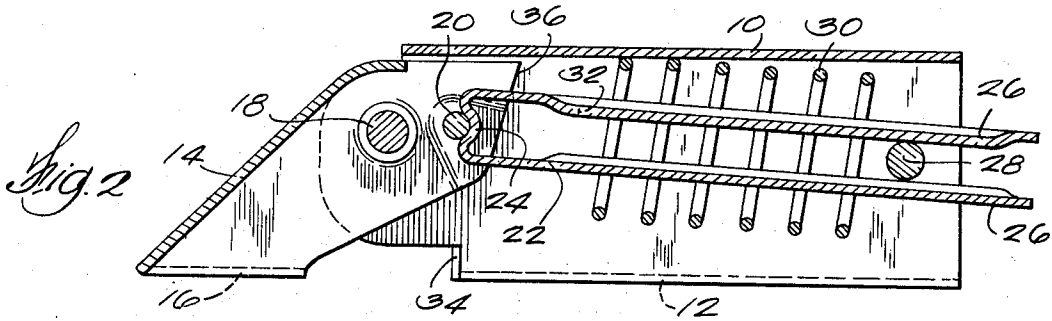
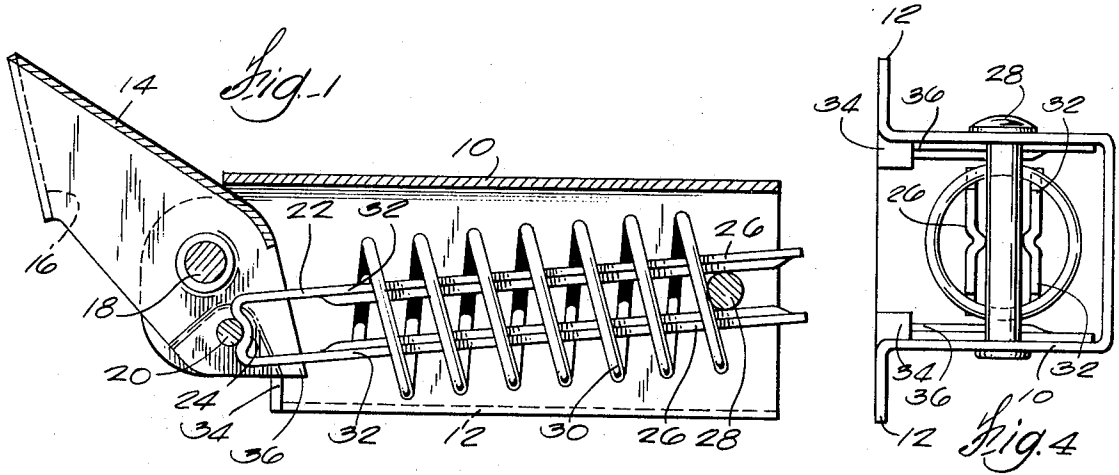
[57] **ABSTRACT**

A simple, non-adjustable, inexpensive outside hinge for the cover lid of a freezer cabinet or the like has a

spring housing which is secured to the outside of a wall of a cabinet. A mounting bracket, which is secured to a side of the cover lid for the cabinet, is pivoted to the spring housing by a pivot pin. On a portion of the mounting bracket radially offset from the pivot pin is a spring follower pin. A spring follower or spring guide member has a bearing portion urged against the spring follower pin by a coiled compression spring reacting between an abutment in the spring housing and a shoulder on the spring guide member. As the mounting bracket is swung from closed to open position, the spring follower pin will travel in an arc about the pivot pin to compress the compression spring with variable moments of force until a dead-center position is reached and thereafter to allow the compression spring to expand under its own force with resulting variable moments of force. This construction allows the use of a single size spring housing and mounting bracket to be used with a number of different sized springs for different sized lids. The compression spring has no tensioning adjustment means and the moment of force executed by the spring on the mounting bracket is minimal from the closed position to the dead-center position. Hence, the cover lid can be easily opened by a child or small person accidentally caught inside the cabinet with the cover lid closed. Thus the hinge is inexpensive to manufacture and is also safer than the hinge now in use.

4 Claims, 4 Drawing Figures





HINGE FOR COVER LID ON CHESTS

This is a continuation of application Ser. No. 356,736, filed May 3, 1973 and now abandoned.

BACKGROUND OF THE INVENTION**1. Field of the Invention**

This invention relates to an inexpensive, non-adjustable, safe, outside hinge for the cover lid of freezer cabinets or the like.

2. Description of the Prior Art

The following U.S. patents are considered as pertinent to the field of this invention:

2,584,372	2,911,667
2,641,019	3,001,225
2,726,914	3,183,550
2,777,157	3,224,036

None of these patents teaches a non-adjustable compression spring which acts directly through a spring follower or spring guide member on a spring follower pin carried by the mounting bracket and positioned below the pivot pin between the mounting bracket and the spring housing.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional view of a hinge embodying the present invention with the lid mounting bracket in the open lid position.

FIG. 2 is a sectional view of the hinge of FIG. 1 with the lid mounting bracket in the closed lid position.

FIG. 3 is a bottom view partly in plan and partly in section of the hinge as viewed in FIG. 2.

FIG. 4 is a right-hand end view of the hinge of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The hinge disclosed in the drawing has a spring housing 10 having laterally extending flanges 12 by which the housing is secured to an outside wall of a freezer cabinet or the like (not shown). A mounting bracket 14 has laterally extending flanges 16 by which the bracket is secured to an outside edge of a lid (not shown) for such cabinet. The bracket 14 is pivoted to the housing 10 by a pivot pin 18 as shown. The bracket 14 has a spring follower pin 20. The pin 20 is radially offset from the pivot 18 as shown in FIGS. 1 and 2. In the closed position of FIG. 2 the pin 20 is only slightly offset from the top of a horizontal plane passing through the axis of the pivot pin 18 while in the open position of FIG. 1, the pin 20 is a large distance from the bottom of the horizontal plane passing through such axis. The effect of this is that the moment of force tending to keep the lid closed is relatively small as compared with the moment of force tending to keep the lid open. Furthermore, as the lid is moved from closed to open position, the spring follower pin 20 will travel in an arc which will include a dead-center position.

A U-shaped spring guide member has an enlarged base 22 provided with a bearing portion 24 which, as shown in FIG. 3 extends for substantially the entire length of and seats on and swings with the follower pin 20 about pivot pin 18. The bearing portion 24 and the pin 20 form an enlarged bearing surface which eliminates the narrow bearing surface formed by the raw edges on the punched holes of the prior art engaging the pivot pin of such art with a sawing effect. The

spring guide member has spaced elongated legs 26 provided as shown in FIGS. 1, 2 and 4 with longitudinally extending rounded surface beads which have a sliding engagement with a guide pin or abutment 28. Such extending beads form a curved non-saw edge slidably contacting the guide pin 28 eliminating the raw edge sawing contact between the slot and toggle of the prior art. These legs form an internal guide for a coiled compression spring 30 which reacts between the guide pin 28 and shoulders 32 formed between the enlarged base 22 and the legs 26 to forcibly urge the bearing portion 24 into engagement with follower pin 20. As shown in FIGS. 3 and 4 the four spaced edges of the legs 26 form four spaced elongated line contacts with the spring 30 to prevent such spring from unnecessary buckling with consequent loss of force, thus making it practical to employ a compression type spring which meets safety requirements. Thus as the bracket 14 is swung from the lid closed position of FIG. 2, the coiled compression spring 30 will be compressed until the spring follower pin moves through the dead-center position. Thereafter the coiled compression spring, expanding under its own inherent force, will apply an increasing moment of force to the bracket 14 as it approaches the fully open position of FIG. 1. This open position is limited by tab 34 on the housing 10 which abuts against projecting edges 36 on the bracket (see FIG. 1).

The essential features of this invention are:

1. the safety feature of no spring tension adjustment;
2. the light force to maintain the closed position;
3. the adaptability of one size spring housing and mounting bracket to be used with a number of different sized springs for different sized lids; and
4. fewer components needed to produce a similar action as in previous hinges.

I claim:

1. A hinge for the cover of a freezer cabinet or the like comprising:
 - a. a spring housing secured to said freezer cabinet;
 - b. a lid for said cabinet;
 - c. a mounting bracket secured to said lid;
 - d. a pivot pin interconnecting said spring housing and said mounting bracket;
 - e. said mounting bracket having a spring follower pin radially offset from said pivot pin;
 - f. a spring engaging pin on said spring housing remote from said pivot pin;
 - g. a coiled compression spring in said spring housing reacting between said spring follower pin and said spring engaging pin; and
 - h. a U-shaped spring guide member having (1) an enlarged bearing portion, and (2) spaced elongated legs located partly within said compression spring, said bearing portion extending for the length of said spring follower pin and rotatably seated on and swinging with said spring follower pin; said coiled compression spring reacting between said spring follower pin and said enlarged bearing portion.
2. A hinge as defined in claim 1 wherein: said spaced elongated legs are provided with longitudinal extending beads forming curved surfaces which slidably contact said spring engaging pin.
3. A hinge as defined in claim 1 wherein: said spaced elongated legs have four spaced edges forming line contacts with said coiled compression spring to resist buckling of said spring during compression thereof.
4. A hinge as defined in claim 1 wherein any means for adjusting the effective force of said compression spring is absent.

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