

Feb. 16, 1937.

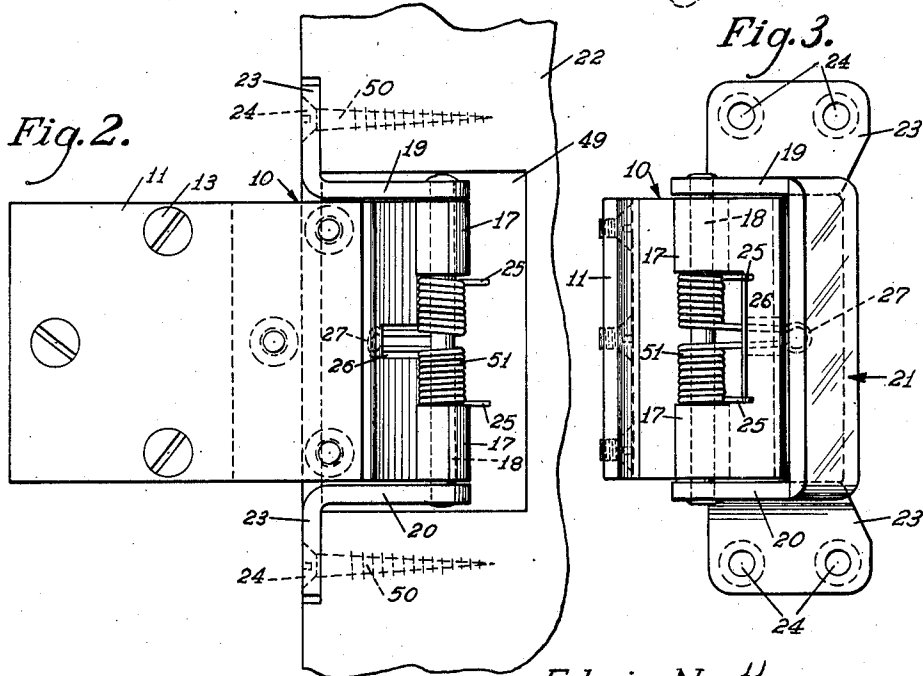
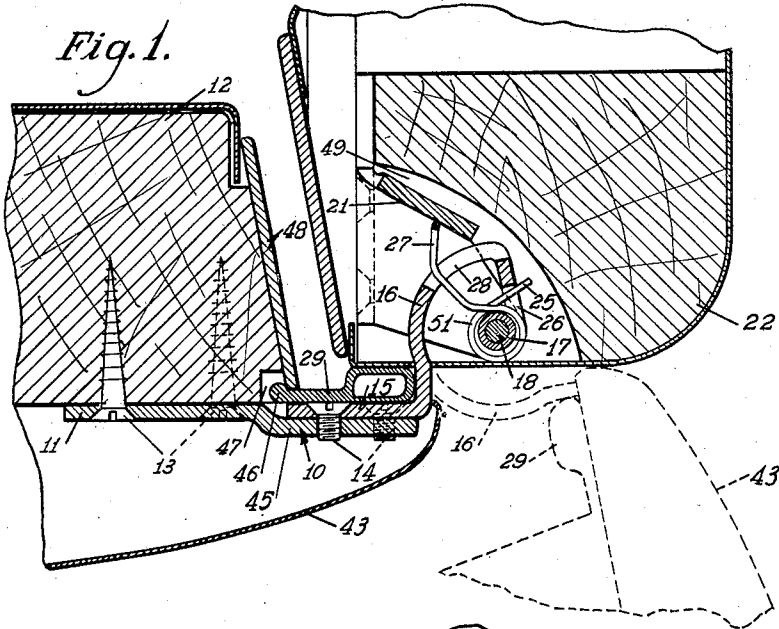
E. NORTH

2,071,085

REFRIGERATOR DOOR HINGE

Filed March 25, 1936

2 Sheets-Sheet 1



Edwin North, INVENTOR.

BY *Clarence E. Threedy*
HIS ATTORNEY.

Feb. 16, 1937.

E. NORTH

2,071,085

REFRIGERATOR DOOR HINGE

Filed March 25, 1936

2 Sheets-Sheet 2

Fig. 4.

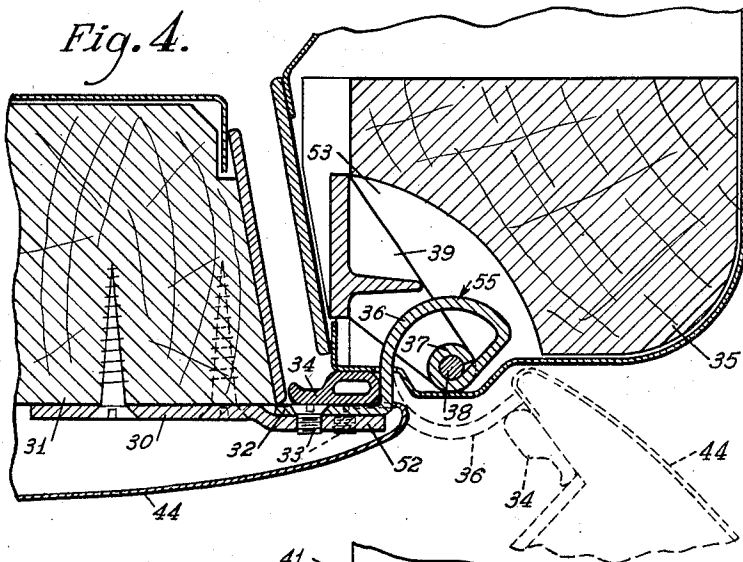


Fig. 5.

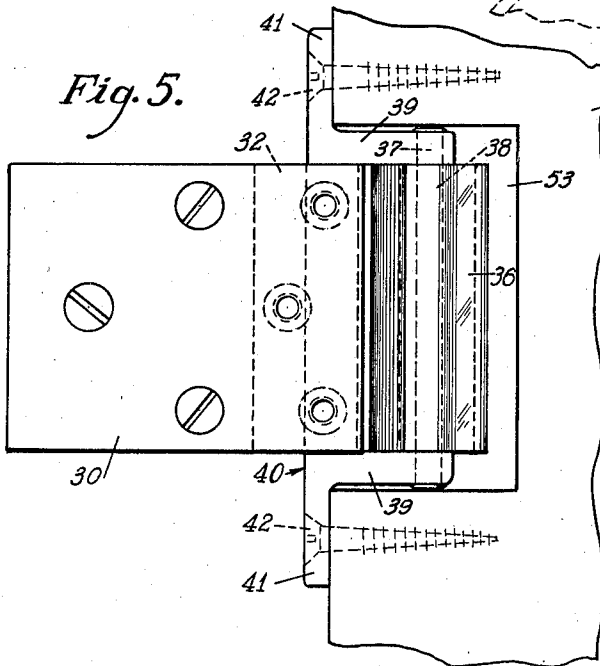
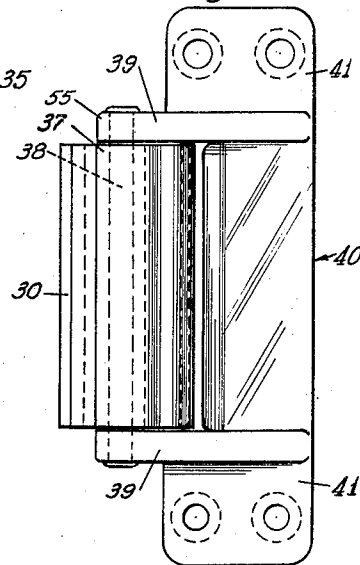


Fig. 6.



Edwin North, INVENTOR.

BY *Clarence E. Threedy*
HIS ATTORNEY.

UNITED STATES PATENT OFFICE

2,071,085

REFRIGERATOR DOOR HINGE

Edwin North, Rockford, Ill., assignor to National
Lock Co., Rockford, Ill., a corporation of Dela-
ware

Application March 25, 1936, Serial No. 70,739

9 Claims. (Cl. 20—35)

This invention relates to a refrigerator door hinge.

It is an object of this invention to provide an improved refrigerator door hinge which is relatively simple and inexpensive in construction and efficient in use.

In the use of the usual types of concealed refrigerator door hinges a serious difficulty has been experienced, and this difficulty resides in the fact that these concealed hinges have seriously interfered with the sealing function and efficiency of the refrigerator door, thereby permitting cold air to escape from the refrigerator and warm air to enter the same.

An object of the present invention, therefore, is to provide a new and improved refrigerator door hinge which is built around the outside of the door, and which is so built that it will overcome the above-mentioned difficulty experienced in the use of the prior art concealed hinges and which will in no way affect the sealing function or efficiency of the door.

An additional object of the invention is to provide, in a refrigerator, a novel construction having the advantages above set forth.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a horizontal sectional view showing a preferred form of the new refrigerator door hinge in position of use and showing the door in closed position;

Fig. 2 is a front elevational view of the same;

Fig. 3 is a side elevational view of the hinge shown in Figs. 1 and 2;

Fig. 4 is a horizontal sectional view showing a modified form of the invention;

Fig. 5 is a front elevational view of the same; and

Fig. 6 is a side elevational view thereof.

A preferred form of the new refrigerator door hinge is shown in Figs. 1 to 3 inclusive of the drawings and is therein generally indicated at 10. This hinge 10 comprises an attaching member or face plate 11 which is secured to the door 12 of a refrigerator by means of fastening elements in the form of screws 13. This attaching member or face plate 11 has an offset portion 45 (Fig. 1) which is offset from the plane of the main extent or body of the face plate 11 and is spaced from the sealing strip or gasket 29. The sealing strip

or gasket 29 is mounted on the door 12 and being held in place by a portion 46 of the sealing strip 29 which is extended into a recess 47 which is formed in the door 12, this portion 46 of the sealing strip 29 being held in place by means of a plate 48 which is attached to the door 12.

The hinge 10 includes a movable element 16 and this movable element 16 has an extension 15 which is attached to the offset portion 45 of the face plate 11 by means of bolts 14, this portion 15 of the movable element 16 of the hinge being disposed (Fig. 1) between the sealing strip 29 and the offset portion 45 of the face plate 11. The movable element 16 of the hinge 10 is pivotally mounted, upon a pintle 18, by means of two knuckles 17 which are formed integrally with the movable element 16 and embrace the pintle 18, and the pintle 18 is mounted in, and extends between, two spaced, horizontally extending and corresponding arms 19 and 20 of a supporting frame 21 which is inserted into, and is disposed in, a recess 49 which is formed in the door jamb or body 22 of the refrigerator. The supporting frame 21 also includes two spaced ears or attaching elements 23 which are provided with apertures 24 whereby the supporting frame 21 may be attached to the door jamb or body 22 of the refrigerator by means of screws 50 which are inserted through the apertures 24 into the door jamb or body 22.

Arranged upon the pintle 18 of the hinge 10 is a coil spring 51 and this coil spring 51 has end portions 25 which are projected through a slot 26 which is formed in the movable element 16 of the hinge 10. The coil spring 51 also has a centrally arranged extension 27 which projects through a slot 28 which is formed in the movable element 16 and this extension 27 bears against the supporting frame 21 and normally urges the door 12 into open position.

The parts 11—14—15 etc. of the hinge 10 are partially concealed from view, when in use, by means of an ornamental covering 43 which may be attached to the door 12 of the refrigerator in any suitable manner.

It will be noted that in the use of the preferred form of the new refrigerator hinge 10, which is shown in Figs. 1 to 3 inclusive, the same is built around the outside of the refrigerator door 12 and is built in such a manner that it does not interfere with the sealing engagement between the sealing strip 29 and the door jamb 22 when the hinge 10 is in place and the door 12 is closed, as do the prior art concealed hinges, which are built around the inside of the door and interfere with

the sealing engagement between the sealing strip and the door jamb or body of the refrigerator when the door is closed. It is also to be noted that the new hinge 10 is built and installed in position of use without in any way interfering with the sealing function or efficiency of the sealing strip or gasket 29, that is, without cutting through the latter at any point in its extent, as is necessary in the installation of the usual type of concealed hinges now in use. Hence the new hinge 10 does not interfere with the sealing function or efficiency of the sealing strip or gasket 29 and thus it overcomes a difficulty experienced in the use of the prior art concealed hinges.

Another advantage which is inherent in the construction of the new hinge 10, which is shown in Figs. 1 to 3 inclusive, is the neat and compact appearance of the same, and the absence of exposed metal parts which will tarnish with age.

The tongue or extension 27 of the coil spring 51, bearing, as it does, against the frame 21 of the hinge 10, when the door is closed, is placed under a slight tension, and urges the door 12 into opened position when the door is unlatched.

A modified form of the new hinge is shown in Figs. 4, 5, and 6, is therein generally indicated at 55, and comprises a face plate or attaching member 30 which is attached to the door 31. This face plate 30 has an offset portion 52 and the hinge 55 includes a movable element 36 which has an extension 32 and this extension 32 is attached to the offset portion 52 of the face plate 30 by means of the bolts 33, between the face plate 30 and the sealing strip 34 which is mounted on the door 31.

The movable element 36 of the hinge 55 includes a convoluted portion or knuckle 37 which is pivotally mounted upon a pintle 38 and this pintle 38 is mounted in, and extends between, spaced upper and lower horizontal arms 39 of a supporting frame 40. Each of these arms 39 has an ear or extension 41 and these ears 41 are attached to the door jamb or body 35 of the refrigerator by means of screws 42, it being noted that the supporting frame 40 of the hinge 39 and the body or main portion of the movable element 36 of the same are inserted into, and are disposed within, a recess 53 which is formed in the door jamb 35.

The parts 30—33, etc. of the hinge 55 are partially concealed from view, when in use, by means of an ornamental cover 44 which may be attached to the door 31 in any suitable manner.

The modified form of the new hinge, shown in Figs. 4, 5 and 6 is substantially the same in construction and operation as the preferred form of the hinge shown in Figs. 1, 2, and 3, except for the omission of the coil spring 51 and the provision of the one-piece knuckle 37, which embraces the pintle 38, rather than the two-piece knuckle 17 as in the preferred form of the invention shown in Figs. 1, 2, and 3, and this modified form of the new hinge has the advantages, and overcomes the difficulties experienced in the use of the prior art hinges, referred to in connection with the description of the preferred form of the hinge shown in Figs. 1, 2, and 3.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A hinge for a refrigerator door having a sealing strip arranged upon the inner side thereof, said hinge comprising an attaching member for attachment to the door, a supporting frame for attachment to the door jamb or body of the refrigerator, and a movable element pivotally mounted upon said supporting frame and having an extension attached to the said attaching member between the latter and the said sealing strip.

2. A hinge for a refrigerator door having a sealing strip arranged upon the inner side thereof, said hinge comprising an attaching member for attachment to the door and having an offset portion, a supporting frame for attachment to the body or door jamb of the refrigerator, and a movable element pivotally mounted upon said supporting frame and having an extension attached to the said attaching member between the said offset portion of the latter and the said sealing strip.

3. A hinge for a refrigerator door having a sealing strip arranged upon the inner side thereof, said hinge comprising an attaching member for attachment to the door, a supporting frame for attachment to the door jamb or body of the refrigerator, a pintle mounted in the said supporting frame, a movable element pivotally mounted upon said pintle and having an extension attached to the said attaching member between the latter and the said sealing strip, and a coil spring mounted upon said pintle and having an extension bearing upon said supporting frame and placed under tension when the door is closed so as to urge the door into open position when the same is unlatched.

4. A hinge for a refrigerator door having a sealing strip arranged upon the inner side thereof, said hinge comprising an attaching member for attachment to the door and having an offset portion, a supporting frame for attachment to the door jamb or body of the refrigerator, a pintle mounted in said supporting frame, a movable element pivotally mounted upon said pintle and having an extension attached to the said attaching member between the said offset portion of the latter and the said sealing strip, and a coil spring mounted upon said pintle and having an extension bearing upon said supporting frame and placed under tension when the door is closed so as to urge the door into open position when the same is unlatched.

5. In refrigerator construction, a door, a hinge including an attaching member attached to the door on the outer side thereof and having a portion projecting beyond one marginal edge of the door, a sealing strip mounted upon the said door and extending transversely of the said projecting portion of said attaching member and spaced therefrom, said hinge including a supporting frame mounted upon the body or door jamb of the refrigerator, and a movable element pivotally mounted upon said supporting frame and having an extension attached to said attaching member between the latter and the said sealing strip.

6. In refrigerator construction, a door, a hinge including an attaching member attached to the door on the outer side thereof and having an offset portion projecting beyond one marginal edge of the door, a sealing strip mounted upon the said door and extending transversely of the said offset projecting portion of said attaching member and

spaced therefrom, said hinge including a supporting frame mounted upon the body or door jamb of the refrigerator, and a movable element pivotally mounted upon said supporting frame
5 and having an extension attached to said attaching member between the said offset portion of the latter and the said sealing strip.

7. In refrigerator construction, a door, a hinge including an attaching member attached to the
10 door on the outer side thereof and having a portion projecting beyond one marginal edge of the door, a sealing strip mounted upon the said door and extending transversely of the said projecting portion of said attaching member and spaced
15 therefrom, said hinge including a supporting frame mounted upon the body or door jamb of the refrigerator, a movable element pivotally mounted upon said pintle and having an extension attached to said attaching member between
20 the latter and the said sealing strip, and a coil spring mounted upon said pintle and having an extension bearing against said supporting frame and placed under tension when the door is closed so as to urge the door into open position when
25 the same is unlatched.

8. In refrigerator construction, a door, a hinge including an attaching member attached to the door on the outer side thereof and having an offset portion projecting beyond one marginal edge
30 of the door, a sealing strip mounted upon the said

door and extending transversely of the said offset projecting portion of said attaching member and spaced therefrom, said hinge including a supporting frame mounted upon the body or door jamb of the refrigerator, a pintle mounted in
5 said supporting frame, a movable element pivotally mounted upon said pintle and having an extension attached to said attaching member between the said offset portion of the latter and the said sealing strip, and a coil spring mounted upon
10 said pintle and having an extension bearing against said supporting frame and placed under tension when the door is closed so as to urge the door into open position when the same is unlatched.
15

9. In refrigerator construction, a door, a hinge including an attaching member attached to the door on the outer side thereof and having a portion projecting beyond one marginal edge of the door, a sealing strip mounted upon the said door
20 and extending transversely of the said offset projecting portion of said attaching member and spaced therefrom, a door jamb having a recess formed therein, said hinge including a supporting frame mounted upon the said door jamb with-
25 in said recess, and a movable element pivotally mounted upon said supporting frame and having an extension attached to said attaching member between the latter and the said sealing strip.

EDWIN NORTH.

30