

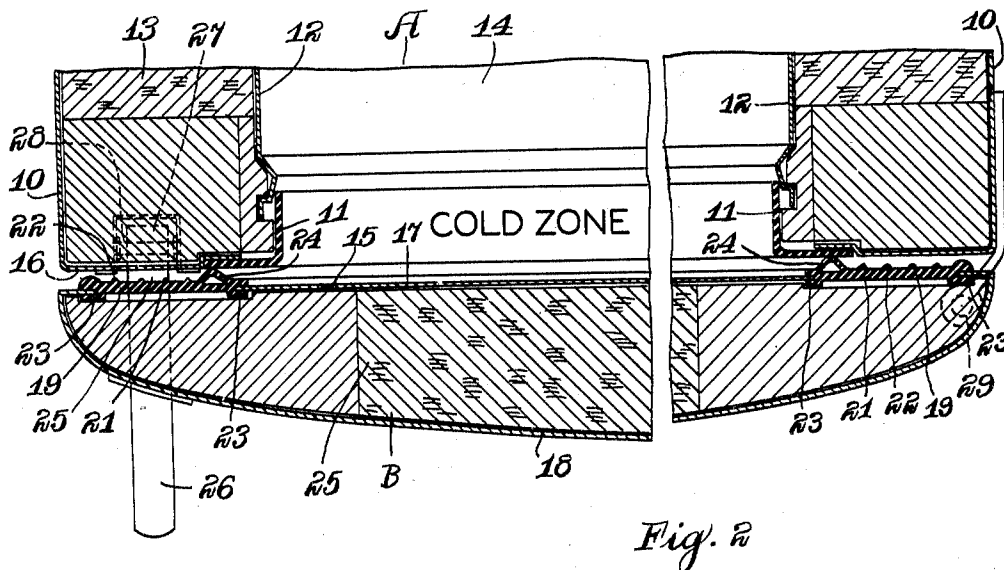
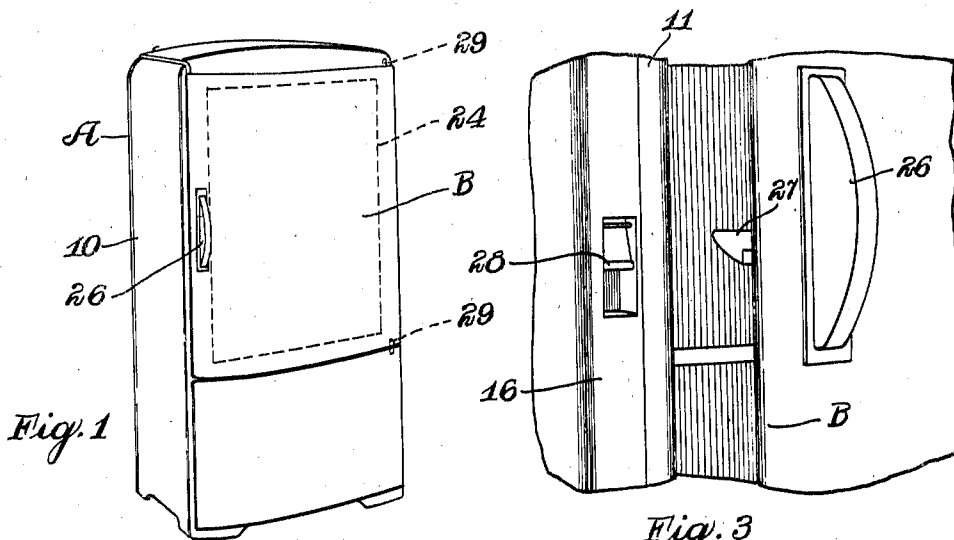
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REFRIGERATOR CONSTRUCTION WITH LATCH AND HINGE MEANS OUT OF COLD ZONE

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REFRIGERATOR CONSTRUCTION WITH
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COLD ZONEEnoch Swedman, St. Paul, Minn., assignor to
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2 Claims. (Cl. 220—9)

This invention relates to modern types of refrigerators wherein the latch lock of the same is adapted to be concealed when the door of the refrigerator is closed and wherein the latch lock is positioned in relation to the body of the refrigerator and the door so that it will be outside of the "cold zone" to prevent filtration of cold or warm air through the latch lock when the refrigerator is closed.

10 A feature resides in providing a refrigerator with a sealing means between the door and the body of the refrigerator which is spaced in from the margin of the body and the door so as to provide a space wherein the latch lock may be set extending through the margin of the door and with the tongue of the latch lock projecting from the inside of the door so as to enter a recess and engage a keeper which is anchored in the body of the refrigerator.

20 In modern types of refrigerators and particularly those designed to provide a neat appearance outwardly as well as inwardly of the refrigerator, it is desirable to provide a flush type door parallel the inner marginal surface which contacts the outer frame of the refrigerator extending virtually parallel to the outer casing and frame surface of the refrigerator body and with the door having approximately the same width as the body of the refrigerator. Thus the door in these modern types of refrigerators forms a front panel which extends over the entire front surface of the refrigerator and projects marginally about the opening into the refrigerating chamber.

30 In this type of refrigerator the sealing gasket which is made of rubber or other similar material and which is designed to fit into the margin of the door panel or may be anchored in the body of the refrigerator, is formed to provide a marginal sealing means spaced in from the periphery of the door and of the outer portion of the frame so as to provide a marginal space outside of the cold zone wherein the hinge for the door and the latch lock are positioned wholly outside of the cold zone. Since refrigerators have been designed with the modern structure wherein it is desirable to conceal the hardware, particularly the latch lock and also the hinges, it has been a problem to provide a construction wherein the latch lock and the hinges were positioned outside of the cold zone. This has been accomplished in this structure of refrigerator and has been found to be very desirable because it prevents filtration of warm air through the latch lock and yet permits the tongue of the lock to be

entirely concealed between the margin of the door and the body of the refrigerator. The hinges are also concealed and are positioned outside of the cold zone. This is extremely important because it accomplishes a better result in permitting a seal to be formed around the door and body of the refrigerator with the flush type door.

The sealing means is formed with a projecting hollow rib extending along the inner edge while the sealing means may act as a non-metallic breaker strip to connect the inner enamelled plate on the door with the outer enamelled plate which forms the outer covering for the door. The sealing means is preferably formed of rubber or other suitable flexible material and is of a strip-like nature. The tongue of the latch lock may pass through the flat portion of the sealing means outside of the hollow sealing rib, insuring the placing of the latch lock outside of the cold zone.

In the drawing forming part of this specification:

Figure 1 is a perspective view of the refrigerator.

Figure 2 is a sectional detail, horizontally through a portion of the refrigerator, showing the position of the sealing means and the placing of the latch lock outside of the cold zone.

Figure 3 is a perspective detail of a portion of the refrigerator, showing the tongue of the latch lock and the keeper which is recessed into the body of the refrigerator.

The refrigerator A is designed with an outer enamelled sheathing 10 which covers the outer surface of the refrigerator and which is adapted to be connected by the non-metallic breaker strip 11 with the inner enamelled sheathing 12. The body or frame 13 of the refrigerator is made of insulating material and is formed of the desired shape so as to provide a refrigerating chamber 14 within the body and in which a suitable refrigerating unit or means may be placed so as to refrigerate the chamber 14 in the desired manner.

The refrigerating chamber 14 is adapted to be closed by the door B. In the modern type of refrigerator A, the door B is of the flush type wherein the inner surface 15 is adapted to extend parallel with the outer front surface 16 of the refrigerator body.

The door B is formed with an inner enamelled sheathing 17 and an outer enamelled sheathing 18 which are adapted to be connected by the non-metallic rubber sealing strip 19. The sealing

strip 19 may be made of any suitable non-metallic flexible material, and is adapted to extend approximately parallel with the front surface 16 of the body of the refrigerator A. The door B is formed with insulating filler means 20 so as to insulate the inner sheathing 17 from the outer surface of the refrigerator A to provide a non-conductor of heat and cold between the sheathings 17 and 18.

10 The non-metallic gasket or sealing rubber strip 19 is formed with a width sufficient to space the edges of the sheathings 17 and 18 apart, as illustrated in Figure 2, and may be formed with an intermediate strip-like portion 21 with integral 15 projecting reinforcing ribs 22 extending longitudinally of the same. The edges of the strip 19 may be formed with channels 23 which are adapted to receive the edges of the inner and outer sheathings 17 and 18 to provide a substantial 20 non-metallic connecting strip between the inner and outer enamelled sheathings 17 and 18 of the refrigerator A.

The strip 19 is adapted to be formed with a hollow projecting gasket rib 24 which extends 25 longitudinally of the strip 19 and is positioned toward the inside of the strip 19 so as to provide a sealing gasket rib around the opening into the chamber 14. This rib 24 is adapted to contact the non-metallic connector 11, that is, that portion 30 extending in line with and forming the surface 16 to provide a flexible rib-like sealing means spaced marginally from the outer edge of the door and the outer side surface of the refrigerator. The sealing member 19 virtually seals 35 the refrigerating chamber 14 hermetically when the door B is closed so as to confine the cold zone within the chamber 14 and to provide a marginal space about the edge of the door outside of the cold zone.

40 The latch lock 25 is mounted in the marginal edge of the door B outside of the cold zone. The latch lock 25 is adapted to be operated by an outer handle 26 and is provided with a non-metallic latch tongue 27 which is adapted to engage 45 the keeper 28 which is positioned countersunk into the body 13 of the refrigerator A, as illustrated in Figures 2 and 3. When the door B is closed, the sealing rib 24 will tightly contact the surface 16 to seal the cold zone in the chamber 50 14 and with the latch lock 25 positioned outside of the cold zone there can be no filtration of warm or cold air through the latch lock as was true of old types of refrigerators where the lock was concealed. Thus the latch lock 25 is not subject to change in temperatures and will operate 55 more perfectly, and further, a better seal is provided for the chamber 14 by the gasket sealing strip 19 which also provides a non-metallic connecting means which is a non-conductor for the 60 sheathings 17 and 18.

The hinge pins 29 are also positioned outside of the cold zone in view of the sealing gasket 19 with its inwardly spaced marginal gasket rib 24 and yet the hinge pins 29 are concealed so as 65 not to be exposed to outer appearance. The line of seal of the hollow gasket rib 24 is indicated in dotted lines in Figure 1, to show the sealing position of the rib 24 spaced marginally from the outer edge of the door of the refrigerator A. It 70 will also be apparent that the only exposed hardware on the refrigerator A is the handle 26 for operating the tongue 27 of the latch lock. In

these modern types of refrigerators, every effort has been exerted to make the outer appearance of the refrigerator as neat as possible and to provide a smooth outer enamelled surface over the entire refrigerator which can be readily 5 cleaned and without the unsightly appearance of projecting hardware. These refrigerators are usually made with enamelled metal coverings and it is also undesirable to attach hardware to the same because it does not match 10 the enamel colors and further, in attaching the same the enamel is apt to be cracked in securing the hardware to the same. There has been a marked tendency to simplify the outer appearance of refrigerators and to do this it is necessary 15 to conceal the hardware. In this construction it is important that the hardware has been virtually completely concealed and yet the latch lock, as well as the hinging means is not exposed to the cold zone but is positioned entirely outside 20 of the same and a seal is provided inside of the hinge and lock means of the refrigerator which is continuous and unbroken so that there is no filtration of cold or warm air in this refrigerator from or to the refrigerating chamber 14. With 25 this better sealing means, a better refrigerator has been provided with a very neat and attractive appearance.

I claim:

1. In a refrigerator, a refrigerator cabinet having 30 inner and outer metallic coverings, a door opening in said cabinet having a flat surface surrounding the same, said outer covering extending partially over said flat surface, a non-metallic breaker strip connecting said coverings closely 35 adjacent said door opening, a door hinged to said cabinet to overlie said flat surface, inner and outer metallic coverings on said door, a non-metallic breaker strip between said door coverings, a latch extending through said door and said breaker strip, gasket sealing means between 40 said breaker strips inwardly from said latch, a latch keeper recessed in said outer cabinet covering and in said flat surface externally of said first mentioned breaker strip, said latch engaging 45 said keeper to hold the door closed.

2. In a refrigerator, a refrigerator cabinet having 50 inner and outer metallic coverings, a door opening said cabinet, said inner and outer coverings arranged in spaced relationship, a non-metallic breaker strip connecting said coverings closely, adjacent said door opening, said cabinet and breaker strip providing a substantially flat surface on a substantially common plane surrounding 55 said door opening, a door hinged to said cabinet to overlie said flat surface, and having a second flat surface to cooperate with said first mentioned flat surface, inner and outer metallic coverings on said door, a non-metallic breaker strip between said door coverings facing said first 60 named flat surface, a latch extending through said door and said second flat surface externally of, and spaced from, said inner door covering, a latch keeper recessed in said first named flat surface externally of, and in spaced relation to, the 65 inner metallic refrigerator covering, said latch engaging said keeper to hold the door closed, and a gasket means between said flat surfaces inwardly of said latch and keeper to seal said cabinet from said latch and keeper. 70

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