

April 15, 1941.

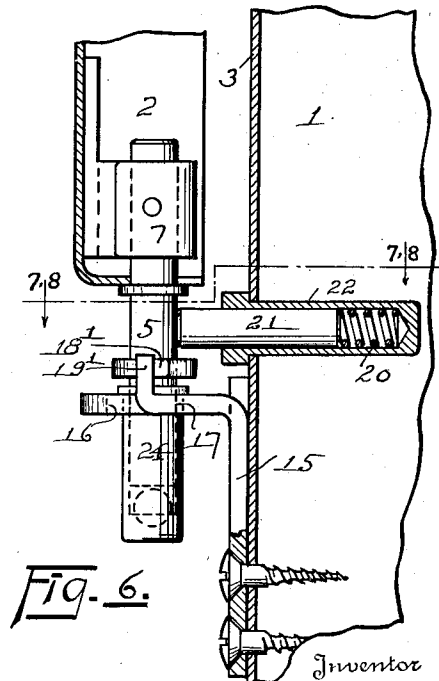
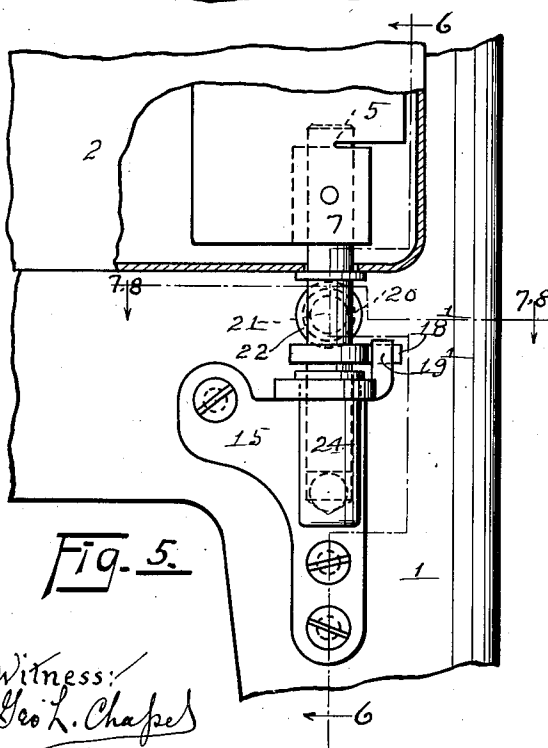
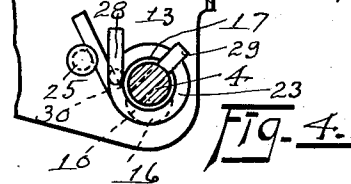
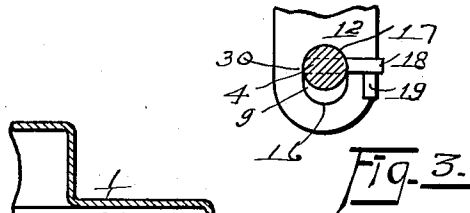
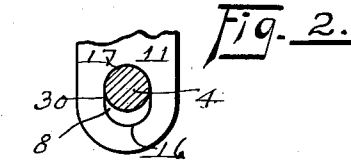
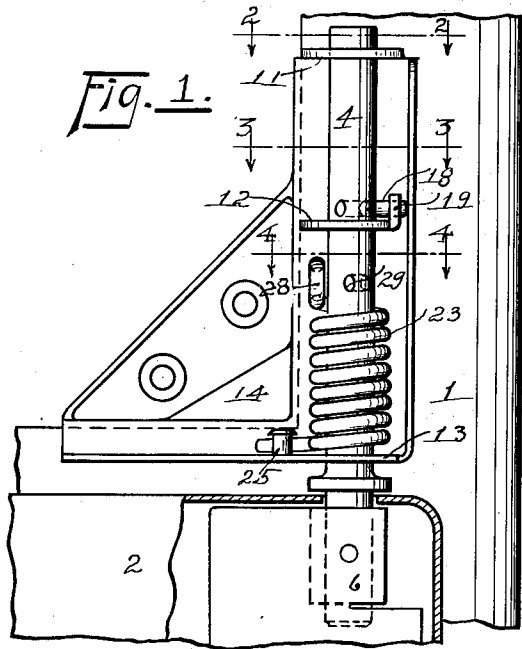
A. F. LICKTEIG

2,238,530

HINGE

Filed April 20, 1940

2 Sheets-Sheet 1



Witness:
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Inventor
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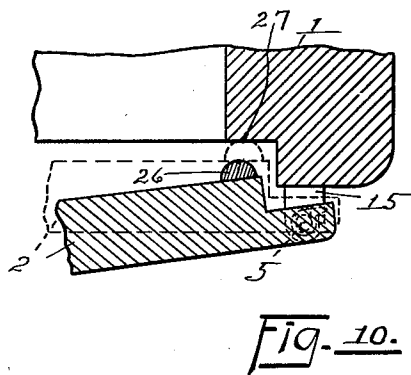
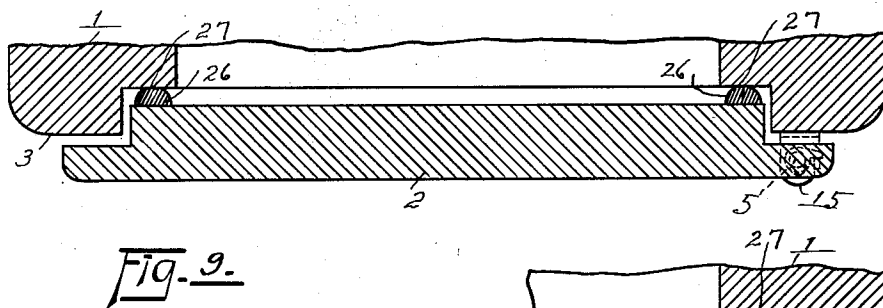
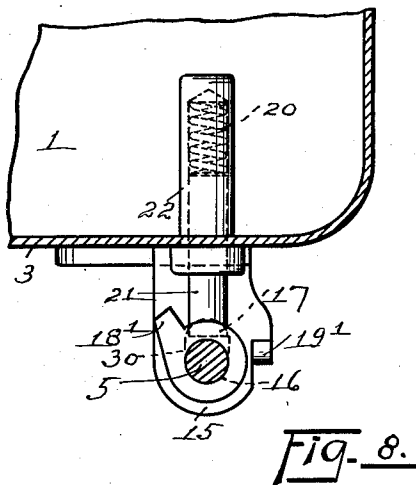
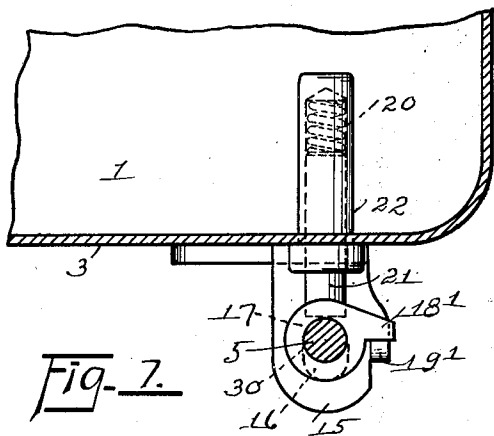
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,238,530

HINGE

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Application April 20, 1940, Serial No. 330,642

6 Claims. (Cl. 16—179)

The present invention relates to hinges, particularly such as are used for mounting the doors of refrigerators and the like; and its object is, generally, to provide an improved hinge of that character whereby the frictional engagement of the closing door with the sides of the door opening and the consequent wear and impairment of the sealing gaskets thereof, will be greatly reduced if not eliminated; and more particularly, to provide such a hinge having means for so shifting the axis of the door's swinging movement that the innermost portion of its closing movement may be in a direct rather than in an arcuate line; and more particularly, to provide improved specific means for effecting said ends.

These objects are attained by, and the invention finds preferable embodiment in, the illustrative structure particularly described in the body of this specification and illustrated by the accompanying drawings, in which:

Figure 1 is an elevational front view of the upper portion of a refrigerator or the like and the upper portion of its door shown in closed position and partially in vertical section adjacent its hinged edge;

Figures 2, 3 and 4 are horizontal sectional views of parts thereof taken on lines 2—2, 3—3 and 4—4 respectively of Figure 1;

Figure 5 is an elevational front view of the lower portion of the refrigerator and the lower portion of the door, shown in closed position and partially sectioned vertically;

Figure 6 is a vertical sectional view thereof taken on line 6—6 of Figure 5;

Figures 7 and 8 are horizontal sectional views of parts of the same taken on line 7, 8—7, 8 of Figures 5 and 6, Figure 7 showing the parts in the door's closed position and Figure 8 showing the same in the door's open position;

Figure 9 is a horizontal sectional view of the same taken on said lines 7, 8—7, 8 and showing the door completely closed;

Figure 10 is a like view of portions of the same, showing the door in its nearly closed position.

In the embodiment of the invention illustrated by these drawings a refrigerator or the like is shown having a body or box 1 and a door 2 swingably mounted on the front 3 thereof by hinges having coaxial pintles comprising separate upper and lower coaxial portions 4 and 5 which are mounted nonturnably on the door, as in its bracket portions 6, 7 respectively. These pintle portions are turnable and laterally slidable forwardly-rearwardly relatively to the body 1 in like parallel bearings 8, 9, 10 in the horizontal arms

11, 12, 13 of the body's bracket 14 above the door and in the body's bracket 15 below the door.

Each of these bearings is elongated forwardly-rearwardly of the body, having a forward or outer end 16 wherein the pintle bears turnably, a rearward or inner end 17 adapted to receive the pintle in the door's closed position, and an intermediate portion 30 wherein the pintle bears turnably and laterally slidably in the door's opening-closing movement.

Each pintle portion 4, 5 has a radially extending arm 18 or 18¹, and the body has stops 19, 19¹, on the brackets 12, 15, in the path of said arms in the door's inwardly swinging movement and engaged by said arms when the door reaches its nearly closed position.

It will be seen that when the door is swung inwardly from its wide-open position wherein the pintle bears turnably in the bearings' outer ends 16, said arms, as the door reaches its nearly closed position (seen in Figure 10), engage the stops and bear thereon slidably and turnably for moving the pintle laterally inwardly along said intermediate portion 30 of the bearings toward and into the inner ends 17 thereof. In this final or innermost portion of its closing movement, the door turns about the stops rather than turning about the axis of the pintle; and inasmuch as the radius of turning about the stops (which are at the right hand side of the pintle as shown in Figures 3, 7 and 8) is greater than the radius of turning about the pintle's axis, the door (which extends at the left hand side of the pintle) is, in said final portion of its closing movement, moved almost directly inwardly instead of arcuately about the pintle's axis. The result is that the packing strips or gaskets 26 for sealing the closed door (and which, as illustrated, are mounted on the door's inner side), are by this closing movement of the door merely compressed on the surface 27 of the door jambs, instead of being slid therealong parallelly with the body's front. Thus, the packing, especially adjacent the hinged edge of the door, is not worn, abraded, wrinkled or similarly impaired by the opening and closing the door.

As shown in Figure 6, the pintle portion 5 turns in a cup member 24 which is slidable forwardly-rearwardly in the horizontally elongated bearing formed in the lower bracket 15.

The pintle is urged forwardly (outwardly) together with the cup member 24 by a spring 20 pressing the rod or plunger 21 slidable in the hollow bearing member 22 in the body and en-

gaging at its outer end the inner side of the pintle, as seen in Figure 6.

In the illustrated construction, the opening movement of the door is shown cushioned by a spring 23 coiled about the pintle portion 4, with its lower end held by the body's lug or pin 25, its upper end 28 being engaged by the radial arm 29 when the door is swung nearly to its fully opened position.

The invention being intended to be pointed out in the claims, is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings or hereinbefore described.

I claim:

1. A hinge for use on a refrigerator or the like having a body and a door at the front thereof, said hinge comprising a pintle non-turnable on the door and having a radial arm, the body having a bearing elongated forwardly-rearwardly thereof wherein the pintle is turnable and laterally slidable, and a stop adapted to be engaged by the arm in the pintle's turning movement with the door when turned to its nearly closed position for moving the pintle and the door inwardly to said closed position.

2. A hinge for use on a refrigerator or the like having a body and a door at the front thereof, said hinge comprising a pintle non-turnable on the door and having a radial arm, the body having a bearing elongated forwardly-rearwardly thereof wherein the pintle is turnable and laterally slidable, and a stop adapted to be engaged by the arm in the pintle's turning movement with the door when turned to its nearly closed position for moving the pintle and the door inwardly to said closed position, the pintle being spring-pressed outwardly in the bearing.

3. A hinge for use on a refrigerator or the like having a body and a door at the front thereof, said hinge comprising a pintle non-turnable on the door and having a radial arm, the body having a bearing elongated forwardly-rearwardly thereof with an inner end wherein the pintle seats in the door's closed position, an outer end wherein the pintle bears turnably in the door's wide open position and an intermediate portion wherein the pintle is turnable and laterally slidable, and a stop between said ends adapted to be engaged by the arm in the pintle's turning

movement with the closing door when nearly in its closed position for moving the pintle and the door inwardly to said closed position.

4. A hinge for use on a refrigerator or the like having a body and a door at the front thereof, said hinge comprising a pintle non-turnable on the door and having a radial arm, the body having a bearing elongated forwardly-rearwardly thereof with an inner end wherein the pintle seats in the door's closed position, an outer end wherein the pintle bears turnably in the door's wide open position and an intermediate portion wherein the pintle is turnable and laterally slidable, and a stop between said ends adapted to be engaged by the arm in the pintle's turning movement with the closing door when nearly in its closed position for moving the pintle and the door inwardly to said closed position, the pintle being spring-pressed outwardly in the bearing.

5. A hinge for use on a refrigerator or the like having a body and a door at the front thereof with a sealing packing therebetween, said hinge comprising a pintle non-turnable on the door and having a radial arm, the body having a bearing elongated forwardly-rearwardly thereof wherein the pintle is turnable and laterally slidable, and a stop adapted to be engaged by the arm in the pintle's turning movement with the door when turned to its nearly closed position for moving the door approximately directly to its closed position and compressing the packing in a direction parallel to the body's lateral sides.

6. A hinge for use on a refrigerator or the like having a body and a door at the front thereof, said hinge comprising a pintle non-turnable on the first hereinafter mentioned leaf and having a radial arm, a leaf mounted on the door and a leaf mounted on the body having a bearing elongated forwardly-rearwardly of the body wherein the pintle is turnable and laterally slidable and a stop adapted to be engaged by the arm in the pintle's turning movement with the door and the first-mentioned leaf when turned to the door's nearly closed position for moving the pintle and the door inwardly to said closed position.

ALBERT F. LICKTEIG.