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REFRIGERATOR DOOR CONSTRUCTION

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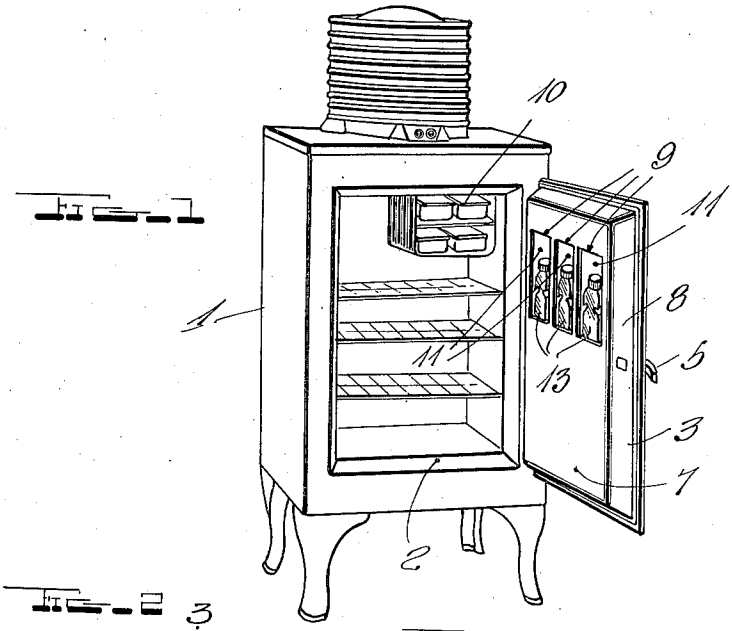


FIG. 1

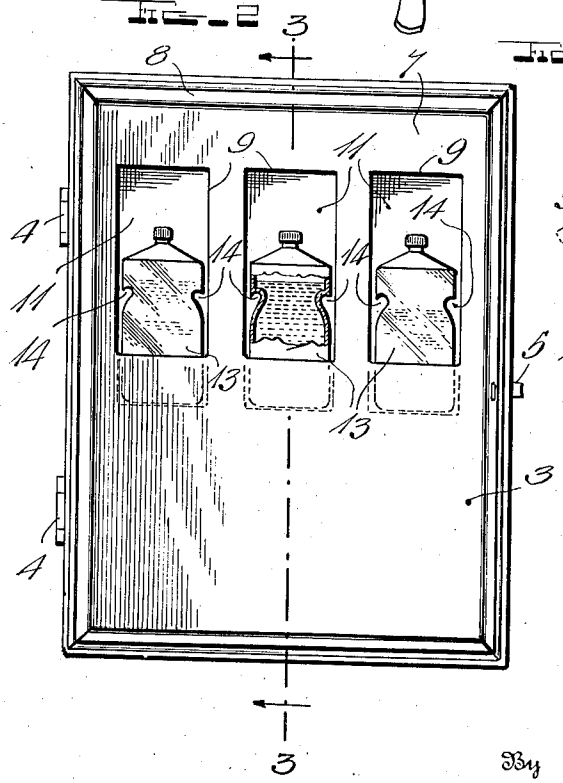


FIG. 2

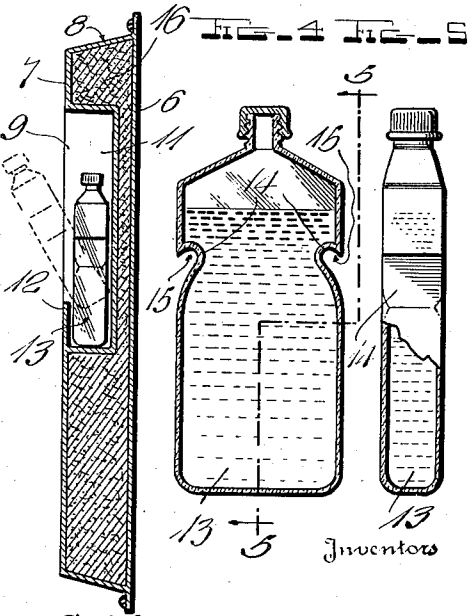


FIG. 3 FIG. 4 FIG. 5

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REFRIGERATOR DOOR CONSTRUCTION

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6 Claims. (Cl. 62—89)

This invention relates to refrigerators and particularly to an improved door construction, the main object of the invention being to provide a door which will serve to close the front opening of a refrigerator in the usual manner and also serve as a carrier for water bottles or like containers.

Another object of the invention is to so construct the door that it will be formed with bottle receiving pockets which are set back into the body of the door so that when the bottles are in place they will not project from the inner face of the door and thereby be prevented from striking shelves of the refrigerator as the door is closed and interfering with closing of the door or necessitating use of special shelves.

Still another object of the invention is to provide a door of the improved construction which will be of a conventional thickness and configuration except the portion of the inner wall of the door forming the pockets and thereby produce a door which will not have its insulating qualities sacrificed.

A still further object of the invention is to permit water bottles to be disposed close to the cooling unit of a refrigerator where the water will be thoroughly cooled without taking up room upon a shelf or occupying other space in the refrigerator which is desired for food products.

Another object of the invention is to provide in connection with the improved door, an improved bottle of such formation that it may be easily removed from a pocket and not be liable to slip out of a person's hand while it is being filled or water poured from it into a glass.

Still another object of the invention resides in providing a construction which is simple and durable, inexpensive to manufacture and one which will be very efficient in operation.

With these and numerous other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawing forming a part of this application:

Figure 1 is a perspective view of a refrigerator having a door of the improved construction;

Figure 2 is an enlarged view looking at the inner face of the door;

Figure 3 is a section taken vertically through the door along the line 3—3 of Figure 2;

Figure 4 is a sectional view taken vertically through one of the improved water bottles; and

Figure 5 is a view taken along the line 5—5 of Figure 4 showing the bottle partially in elevation and partially in section.

The refrigerator which is illustrated in Figure 1 and indicated in general by the numeral 1 is of a conventional construction and has a front opening 2 normally closed by a door 3. While the refrigerator illustrated is of the electrically operated type it is to be understood that it may be of the gas operated type, an ice box or any other type of refrigerator.

The door is hinged to the body of the refrigerator at one side of the entrance opening 2 by hinges 4 and at its other side carries a latch 5 of conventional form. Referring to Figure 3, it will be seen that the door is of hollow formation and has an outer wall 6, and an inner wall 7 which are of metal, marginal portions of the inner wall being bent to form marginal walls 8 which are welded or otherwise firmly secured to the outer wall. Of course, any other conventional construction of hollow door may be used. A portion of the inner wall 7 is cut out at a predetermined location to form either a series of openings 9 or a single opening and in the present illustration the opening or openings are formed in the upper portion of the door so that when the door is closed, these openings will be located adjacent the cooling unit 10 mounted in the upper portion of the food chamber. It is important that the openings be properly located in the door so that when the door is closed and the refrigerator in operation, water bottles carried by the door and exposed through the openings will be close enough to the cooling unit to cause water in the bottles to be cooled to a desired temperature. Hence, the location of the opening or openings 9 may be any where in the inner wall of the door, dependent upon the location of the cooling unit, or cooling elements. Shells forming pockets 11 are disposed within the hollow door back of the openings 9 with edges of their marginal walls welded or otherwise secured to the inner wall 7 of the door and referring to Figure 3, it will be seen that lower portions of the pockets extend downwardly below the openings, thereby providing each pocket with a short frontal wall 12. This short frontal wall may be formed from the wall 7 of the door rising upwardly from the bottom of the pocket, or the short wall may be otherwise applied, or other similar or equivalent means may be used to act as means to restrict the entrance opening of the pocket and simultaneously afford means to retain a bottle 13 or other contents of the pocket in place therein. We do not wish to be limited to the particular wall 12 shown, nor to the manner in which said wall may be applied, as other ways and means of securing or positioning said wall, and/or other restriction means may be used, without departing from the spirit or sacrificing any of the principles of this invention.

The bottles are each of the proper width to fit snugly into a pocket and may be of approximately the height shown in the drawing or some-

what taller or shorter. It is essential, however, that the bottles have their upper ends spaced a sufficient distance from the upper ends of the pockets to permit them to be tilted outwardly through the openings 9 and then drawn upwardly out of the pockets. The bottles preferably, although not necessarily, fit close to side walls of the pockets and in order to permit them to be readily grasped and firmly held while lifting them from the pockets and also eliminate danger of a bottle slipping out of a person's hand while pouring water into a glass, each bottle has its side walls formed with recessed portions 14 having shoulders 15 at their upper ends. A thumb and fingers of one hand can, therefore, be engaged in the recesses at opposite sides of a bottle when it is to be removed from a pocket and will engage under the shoulders so that as the bottle is drawn upwardly and tilted out of the pocket, there will be no danger of the bottle slipping and dropping onto a floor and broken. This also permits the bottle to be firmly held while water is poured into a glass or during filling of the bottle and replacement thereof into the pocket.

The space between the inner and outer walls 6 and 7 of the door is filled with cork or other suitable insulating material 16, formed in one piece or otherwise, as may be desired, and a pocket is formed in the insulation, the opening of which faces inwardly to receive the shell 11 which constitutes a lining for said pocket. This shell, of course, may be made of one piece of material, or of several pieces, as desired, and in any instance, the pocket when fitted with the lining or shell is contained wholly within the door structure or countersunk therein. When bottles, or other articles, are inserted in said pockets, the same will be countersunk with respect to the inner wall of the door, so that there may be no interference with the food, or shelves, or other apparatus within the body of the refrigerator. The opening and closing of the door may be had freely without disturbance of articles within the refrigerator by reason of this retaining or restricting wall 12 of the pocket. Likewise, there will be no danger of the bottles or other articles within the pocket accidentally falling out upon the opening and closing of the door, in view of the restricting wall 12 which provides the lower wall of the opening to the pocket in a plane above the bottom wall of said pocket.

From the foregoing description of the construction of my improved refrigerator door, it will be seen that we have provided a simple, inexpensive and efficient means for carrying out the objects of the invention and while we have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion and in the minor details of construction may be resorted to, without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described the invention, what is claimed is:

1. A refrigerator door comprising a hollow body having inner and outer walls spaced from each other, the inner wall being formed with an opening, a shell in the hollow body having marginal walls engaging the inner wall of the body with portions of the marginal walls extending along side edges and across the upper edge of the opening and the lower portion of the shell extending downwardly below the lower edge of the opening, said shell defining a pocket having the opening as its entrance, the opening being spaced upwardly from the bottom of the pocket whereby the portion of the inner wall between the lower edge of the opening and the lower end of the shell constitutes a retainer for preventing casual displacement of contents of the pocket.

2. A refrigerator door comprising a hollow body having inner and outer walls, an opening being formed in the inner wall of appreciably less dimensions than the length of the inner wall and spaced upwardly from the lower edge of the inner wall, a shell in the hollow body carried by the inner wall in spaced relation to the outer wall and defining a pocket having the opening as its entrance, and a packing of heat insulating material filling the space within the hollow body about the shell with a portion of the packing filling the space between the shell and the outer wall.

3. A refrigerator having a chamber therein, a cooling unit in the chamber, and a door for the chamber comprising a hollow body having inner and outer walls, an opening being formed in the inner wall, a shell in said body engaging the inner wall about the opening and defining a pocket having the opening as its entrance, the opening being so located that when the door is closed the opening will be opposite the cooling unit and the contents of the pocket effectively cooled, said shell being of greater depth than the opening and having its lower portion extending downwardly below the lower edge of the opening whereby a portion of the inner wall forms a guard rising from the bottom of the pocket and serving to prevent casual displacement of the contents of the pocket.

4. In a refrigerator door, including inner and outer walls and insulation therebetween, the insulation being recessed to provide a self-contained pocket in the door and said inner wall being provided with an opening, a lining for said pocket forming substantially a shell therein projecting inwardly from the inner wall, and article retention means at the lower edge portion of the pocket defining together with the marginal edges of the shell a substantially restricted entrance opening for said pocket registering with the opening in said inner wall.

5. In a refrigerator door, including inner and outer walls and insulation therebetween, a pocket provided in the insulation opening toward the inner wall, said inner wall being formed with an opening to provide an entrance for said pocket, a lining for said pocket forming substantially a shell therein, and a frontal wall, at the lower portion of the pocket defining with the marginal edges of said shell a substantially restricted entrance opening for said pocket, whereby articles deposited therein may not be casually displaced.

6. In a refrigerator door, including inner and outer walls and insulation therebetween, the insulation being recessed to provide a self-contained pocket in the door and said inner wall being provided with an opening, a lining for said pocket forming substantially a shell therein projecting inwardly from the inner wall and a vertical projection extending upwardly from the bottom of the pocket, defining together with the side and top edges of the shell a restricted entrance opening for said pocket registering with the opening in the inner wall of the door.

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