June 1, 1965 A. R. COSTANTINI ETAL 3,186,364

SHELF RETAINING MEANS

Filed April 5, 1962

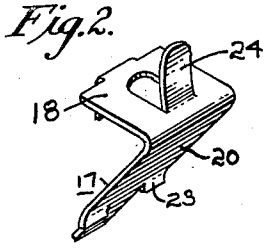


Fig. 2.

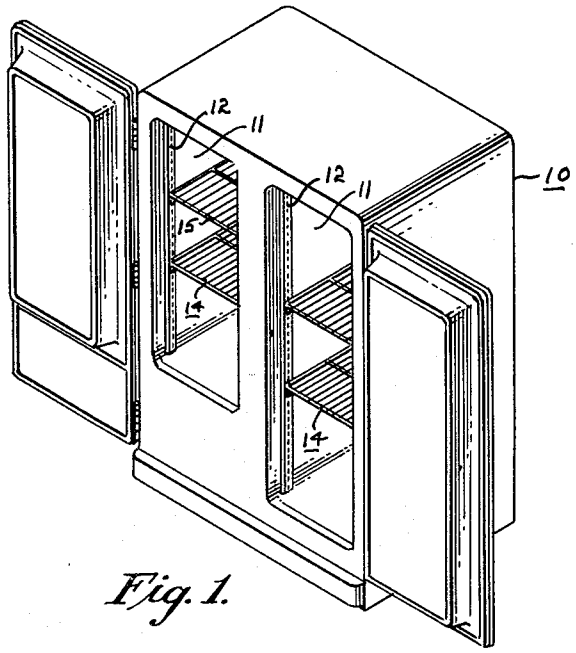


Fig. 1.

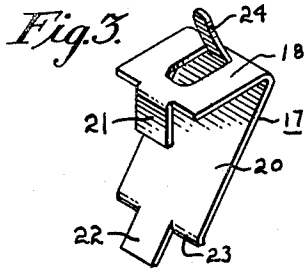


Fig. 3.

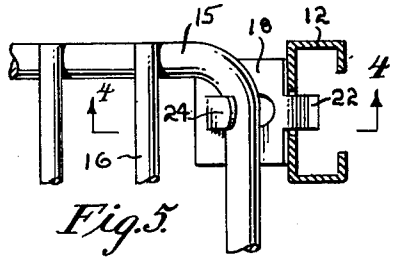


Fig. 5.

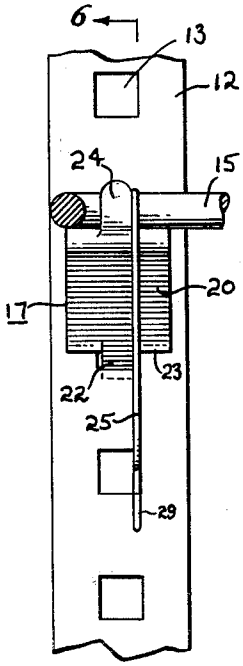


Fig. 7.

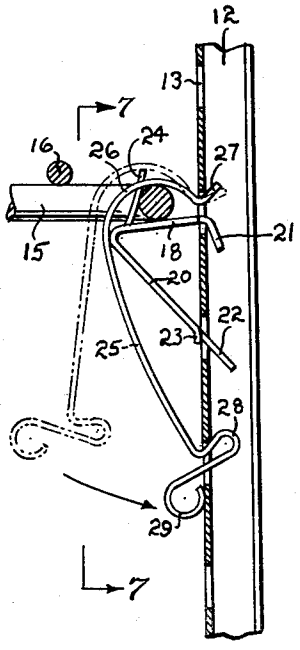


Fig. 6.

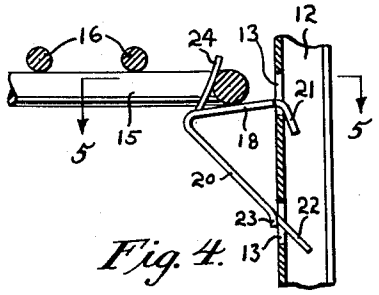


Fig. 4.

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United States Patent Office

3,186,364

Patented June 1, 1965

3,186,364

SHELF RETAINING MEANS

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Filed Apr. 5, 1962, Ser. No. 185,280
1 Claim. (Cl. 108—146)

The present invention relates to shelf assemblies for refrigerators and other cabinets, and more particularly relates to a novel device for locking a shelf in operative position.

In shelf assemblies as heretofore constructed it has been the common practice to provide supports removably attached to apertured pilasters or posts to permit vertical adjustment of the shelf spacing. The shelves are seated on these supports in such manner that they are freely removable for cleaning and the like. The substantially loose mounting presents a problem where the refrigerator or other cabinet is handled for shipping in that the shelves can become readily dislodged from their supports and cause damage to the cabinet interior, thus making repairs necessary after delivery to a customer. Such damage can be substantial and take the form of dents, gouges, cuts, scratches and finish chipping, all to the considerable annoyance of the customer and expense to the shipper. As an alternative, the shelves must be separately packed to prevent such damage, and the incident packing cost must be reflected in higher prices, reduced profits, or both.

It is therefore an object of the present invention to provide a novel quickly attachable and removable locking device effective to interlock a shelf, its support and a pilaster as a complete unitary assembly.

A further object is to avoid cabinet damage by providing a novel spring-biased locking device as an attachment coacting with a shelf and its supports to prevent such shelf from being dislodged during shipment of the refrigerator or cabinet having such an assembly.

Another object is to provide a novel locking device as aforesaid which may also be continued in use by the customer if desired as a shelf retaining means, the locking device being of simple construction and economical of manufacture.

The foregoing and other objects of the invention will become clear from a reading of the following specification in conjunction with an examination of the appended drawings, wherein:

FIGURE 1 is a perspective view of a refrigerator with the doors open to show the general environment of the invention;

FIGURE 2 is a perspective view of one form of pilaster engaging shelf support bracket as viewed from one side;

FIGURE 3 is a perspective view of the bracket seen in FIGURE 2 as viewed from the opposite side;

FIGURE 4 is a vertical sectional view taken on line 4—4 of FIGURE 5;

FIGURE 5 is an enlarged fragmentary plan view of one corner of a shelf of the refrigerator shown in FIGURE 1 seated upon its associated support bracket which is carried by one of the pilasters shown in horizontal section, as would be seen when viewed along line 5—5 of FIGURE 4;

FIGURE 6 is a vertical sectional view taken on line 6—6 of FIGURE 7 showing the shelf supporting and locking assembly according to the invention in both initial unsecured and final secured positions; and

FIGURE 7 is an enlarged fragmentary front elevational view of the shelf supporting and locking assembly embodying the invention as would be seen when viewed on line 7—7 of FIGURE 6.

In the several figures, like elements are denoted by like reference characters.

Referring now to the drawings, a refrigerator 10 is shown in FIGURE 1 as an example of the use of the invention, the same being shown with the doors open to show the shelf assemblies. The interior walls generally designated as 11 define the respective compartments, and have two parallel pairs of metal pilasters of channel section attached vertically to facing walls and in transverse compartment alignment. As best seen in FIGURE 7, each pilaster 12 is provided with a lengthwise row of aligned spaced holes 13 by which shelf supporting clip-in brackets 17 can be selectively located to define a desired spacing of the shelves 14. Preferably, but not necessarily, the pilaster holes 13 are of square configuration to provide lower horizontal supporting edges for the shelf supporting brackets 17, the holes 13 of the pilasters 12 being in horizontal alignment for level shelf support. As shown, the shelves 14 are of open grill construction for ventilation and circulation, each shelf including a rectangular frame 15 supporting transversely extending members 16 secured thereto in parallel spaced apart relation. Preferably the frame 15 and transverse members 16 are of circular section rod stock.

As a means for supporting the respective shelves 14, a plurality of V-shaped brackets 17 are provided, of which four are used for each shelf with one bracket being supported by each of the pilasters. As best seen in FIGURES 2 and 3, each bracket 17 is formed by a horizontally extending short leg 18 and a longer leg 20 formed integrally therewith and depending at an acute angle thereto, the leg 18 terminating in a down turned finger 21 and the leg 20 terminating in a reduced width extension 22. Both the finger 21 and the extension 22 are widthwise dimensioned to pass respectively through selected pilaster holes 13, and the angle between the legs 18 and 20 is such that, considered vertically, the finger 21 can enter one hole 13 and the extension 22 can be inserted in the next lower adjacent hole 13. When so positioned, the leg 18 is supported substantially in a horizontal position by means of the down turned shoulders 23 of the leg 20 laterally offset from the base of the extension 22, which shoulders engage the pilasters 12 laterally of the holes 13. The leg 18, has an ear 24 struck medially upward therefrom in spaced relation to the finger 21 to serve as a motion limiting stop for shelf frame 15 to prevent the shelf from sliding off of the brackets.

In assembling the brackets 17 on a pilaster 12, a pair of holes 13 are selected for supporting a shelf in the desired position, and the finger 21 of one bracket is inserted through the selected hole 13 while the extension 22 is pressed through the next lower hole 13 with the shoulders 23 seated against the pilaster laterally of such hole 13. The other bracket of the pair is similarly mounted upon the opposite aligned pilaster 12. With four of the brackets 17 in place the horizontal legs 18 lie in the same plane and provide the necessary support for a shelf. Obviously such support is stable only as long as the refrigerator or other body is in its normal position for use, but when tilted or turned upside down, as occurs in handling and shipping, the shelf becomes dislodged and causes sometimes serious damage to the cabinet interior as previously pointed out.

In order to prevent such damage, the present invention provides a shelf locking means in the form of a spring-wire latching clip, the clip being shown in FIGURES 6 and 7 as comprising a straight body length 25 formed at the upper end with an arcuate offset 26 which terminates in a catch illustrated as a reversely bent hook 27. The opposite end of the length 25 is bent outwardly into the plane of the offset 26 as an end loop 28 dimensioned to pass through a selected pilaster hole 13. The free end

of the loop 23 projects reversely to the opposite side of the length 25 where it is bent into an eye 29. The overall length of the so-formed springwire latching clip is such that the hook 27 may be engaged in the hole 13 within which is disposed the finger 21 of bracket 17, the offset 26 extending over the adjacent side of the shelf frame 15 and leg 18 of bracket 17 (as indicated in dotted lines in FIGURE 6) with the body length 25 extending downward therefrom. The body length 25 is now tensioned by snapping the loop 23 through the hole 13 next below the hole in which the extension 22 of the bracket 17 is located. As so set, the loop 23 and eye 29 coact with the pilaster 12 to latch the springwire clip in place with its tensioned body part firmly pressed against the V-shaped junction of the legs 18 and 20 of the mounted bracket 17. Thus, the shelf frame 15 and its support brackets 17 are both effectively interlocked with the apertured pilaster 12.

Having now described our invention with reference to a particularly illustrated embodiment thereof it will be apparent that modifications of the same may now occur from time to time to those persons normally skilled in the art without departing from the essential spirit or scope of the invention, and accordingly it is intended to claim the same broadly as well as specifically, as indicated by the appended claim.

What is claimed as new and useful is:

An assembly comprising in combination, a pilaster having a row of lengthwise-aligned spaced holes formed in one wall thereof, a pilaster-carried shelf support bracket formed by first and second legs, a hook on said first leg to engage said pilaster through a selected pilaster hole, an extension on said second leg projectable into another pilaster hole and pilaster wall engaging means on said second leg disposed laterally of said extension to support said bracket with said first leg projecting horizontally from said pilaster, a shelf seatable on said bracket first leg, a springwire latching clip positionable about said bracket and a part of said shelf, and means on said clip coacting with said pilaster through a pair of said spaced pilaster holes for locking said shelf and bracket to said pilaster.

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