Oct. 18, 1938. G. JOHNSON 2,133,781

SHELF SUPPORT

Filed Dec. 14, 1935

Fig. 1.

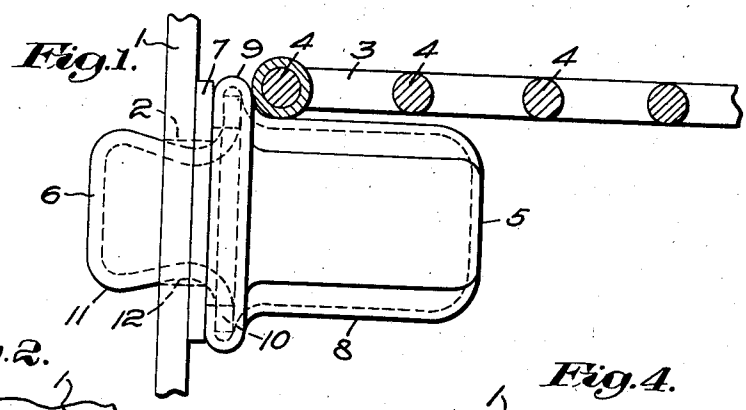


Fig. 2.

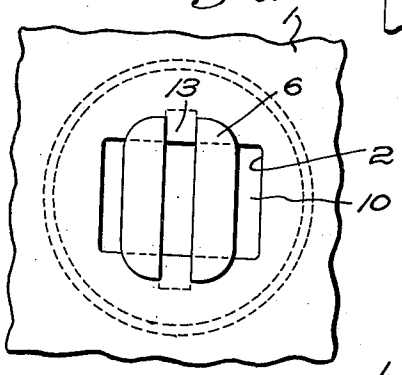


Fig. 4.

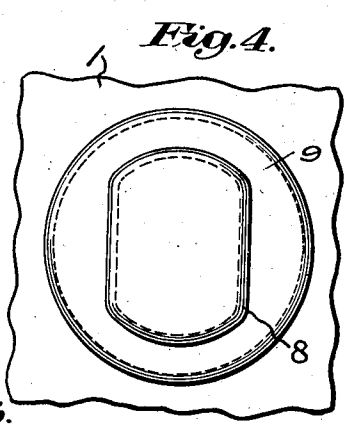


Fig. 3.

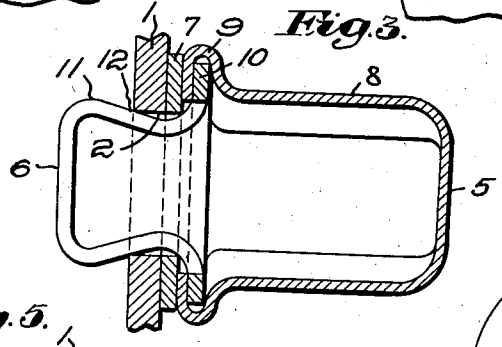


Fig. 7.

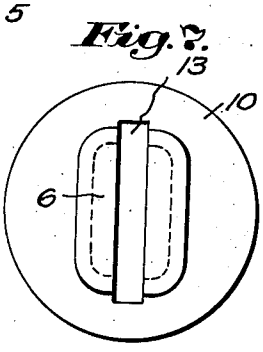


Fig. 5.

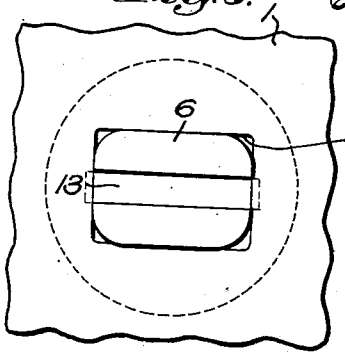
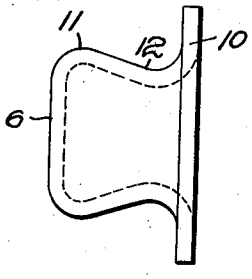


Fig. 6.



Inventor:
Gustav Johnson,
by Walter S. Jones
Atty.

Patented Oct. 18, 1938 2,133,781

UNITED STATES PATENT OFFICE

2,133,781

SHELF SUPPORT

Gustav Johnson, West Roxbury, Mass., assignor to United-Carr Fastener Corporation, Cambridge, Mass., a corporation of Massachusetts

Application December 14, 1935, Serial No. 54,490

4 Claims. (Cl. 248—239)

My invention relates to improvements in shelf support fasteners for refrigerators and the like structures and installations for the same.

Referring to the drawing, which represents a preferred embodiment of my invention:

Figure 1 is a sectional view of my improved fastener including a wall, a shelf and shelf support fastener;

Fig. 2 is an elevation of the installation shown in Fig. 1 as it appears when viewed from the left of the figure;

Fig. 3 is a sectional view of my improved shelf support fastener attached to a supporting wall;

Fig. 4 is an elevation of the installation shown in Fig. 3 taken from the right of the figure;

Fig. 5 is an end view of the parts shown in Fig. 3 showing the manner of attaching the fastener to the supporting wall;

Fig. 6 is a side elevation of the attaching part of my fastener member;

Fig. 7 is a front elevation of the attaching part shown in Fig. 6.

The particular purpose of my invention is to provide a shelf support fastener of simple construction which is adapted to be easily attached to a refrigerator wall from the front face of the wall. By this means, greater speed in assembly of the refrigerator units is obtained as it is not necessary to go behind the wall to attach the fasteners, such an action being inevitable in the case of the fasteners of the nut and screw type which are now in common use.

Although my invention is especially adapted for use in connection with shelf supports for refrigerators, I do not wish to limit it to the same, because there are many other uses to which my improved fasteners could be put which would fall within the scope of the present invention.

Referring to the drawing, I have illustrated in Fig. 1 a portion of a supporting structure, such as a refrigerator wall 1, having a noncircular aperture 2, a shelf 3 made up of the wires 4, and my improved shelf support fastener 5 which is adapted to engage the shelf 3 and be detachably secured to the wall 1 by means of the resilient stud member 6. A washer 7, preferably made of fibrous material, is located, in my preferred form, between the shelf support 5 and the wall 1 and adapted to take up any looseness between the wall and the fastening means.

The shelf support 5, as best illustrated in Figs. 3, 4 and 5, has a relatively narrow tubular projection 8 which is slightly flattened at opposite longitudinal sides, in my preferred form (Fig. 4), so that a tool may be attached to it for the purpose which will be hereinafter more fully described. Integral with the open end of the tubular projection I have provided the flanged portion 9. The longitudinal edges of the projection 8 extend from the portion 9 in a plane which is substantially perpendicular to that of the wall 1 so as to provide a suitable surface upon which the shelf 3 may rest.

In order to secure the projection to the wall, I have provided an attaching member (Figs. 6 and 7) which has a base plate 10 adapted to fit within the flanged base 9 of the tubular projection 8. The peripheral edges of the flange 9 are crimped over the peripheries of the base plate, as illustrated in Figs. 1 and 3, thereby firmly securing the parts of the fastener together.

Integral with the base plate I have formed the stud member 6 which, as shown in Figs. 6 and 7, includes a head 11 and a neck 12 struck up from the plate 10. The stud 6 is noncircular in cross-section and adapted to register in one position with the noncircular aperture 2 of the wall 1 as illustrated in Fig. 5. The stud is made contractible and expansible by a slot 13 running lengthwise of the head and neck and extending into the plate 10 on both sides of the stud. The stud is thus divided by the slot into two longitudinal halves which are yieldable in a transverse direction to permit engagement and disengagement of the stud and cooperating socket.

In attaching the shelf support to the wall 1, the washer 7 may be placed over the head of the stud 6 and the stud is then brought into registering relation with the aperture 2 and snapped through the aperture so that the longitudinal sides of the head portion will bear upon the walls surrounding the longitudinal edges of the aperture, as illustrated in Fig. 5.

The stud is then turned 90° so that its major axis or longer dimension will lie across the minor axis or shorter dimension of the aperture. During the turning movement, a pair of opposite diagonal corners of the stud will engage the longitudinal edges of the wall around the aperture contracting or distorting the halves sufficiently to permit the lateral ends of the stud head to move into a position wherein they overlie the longitudinal walls of the aperture, as shown in Fig. 2. The stud is not resilient in this final position and cannot be detached from the wall unless intentionally turned back to its first position. The stud is turned, in my preferred form, by a tool (not shown) which is adapted to fit over and engage the noncircular projection 9 (Fig. 4).

When the shelf support is in final position the washer will be located adjacent to the outside surface of the wall 1 and the crimped-over edges of the base flange 8.

I have thus provided a shelf support of simple construction which is comparatively easy to assemble with its wall support, and which, when finally located in secured position, may not be unintentionally disengaged.

The walls of the retainer may be provided with as many shelf support fasteners as are necessary to carry properly the shelf or shelves to be located within the retainer.

Although I have illustrated and described a preferred embodiment of my invention, I do not wish to be limited thereby as my invention is best defined in the following claims.

I claim:

1. A fastener member for securing an article to a support, said fastener having a neck portion and a head portion on said neck, said head portion having a major axis and a minor axis, a slot along one axis of said head portion whereby said portion is divided into substantially identical resilient portions, said resilient portions adapted to be snapped into a noncircular hole of a support and turned into nonregistering relation to said hole.

2. A shelf support having a stud at one end and a shelf-engaging projection at its other end, said stud having a resilient noncircular head portion, said shelf-engaging projection having a flanged base and a tubular shelf-engaging part extending relatively perpendicular to said base, said stud having a portion assembled with said base, the head portion of said stud adapted to be snapped into a noncircular hole of a support and turned into nonregistering relation to said noncircular hole.

3. A shelf support comprising a tubular supporting member having a flanged base and an attaching member assembled with said base, said attaching member providing a noncircular stud adapted to snap into a noncircular cooperating aperture of a supporting structure for temporarily attaching said shelf support to said supporting structure, said supporting member having a noncircular cross-sectional shape for co-engagement with a tool means whereby said stud may be turned into nonregistering relation to said noncircular aperture for more securely attaching said shelf support to said supporting structure.

4. A fastener member for securing an article to a support, said fastener having a neck portion and a head portion on said neck, said head portion being elongated in shape and having a longitudinal diameter which is greater than the diameter of said neck whereby said head portion has shoulders at opposed longitudinal ends, said head portion having a slot along its longitudinal axis whereby said portion is divided into substantially identical resilient portions, said resilient portions being adapted to be extended into a noncircular hole of a support and turned into nonregistering relation to said hole.

GUSTAV JOHNSON.