May 31, 1955 J. C. HAMILTON 2,709,562

SHELF AND SUPPORTING MEANS THEREFOR

Filed Nov. 5, 1952

Fig. 1.

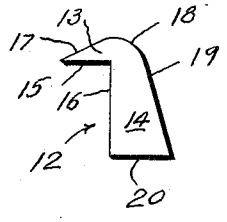
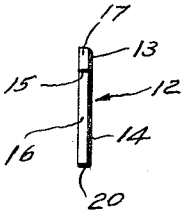


Fig. 2.



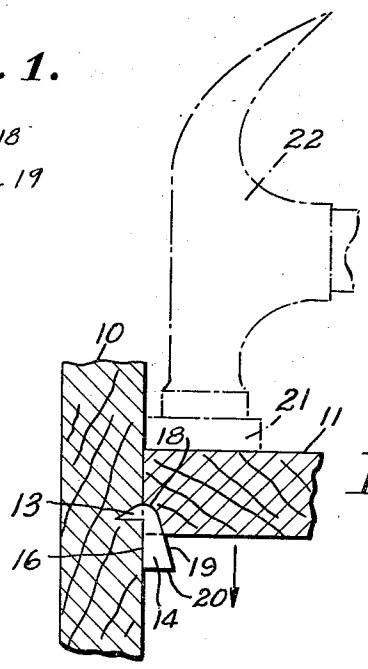


Fig. 4.

Fig. 3.

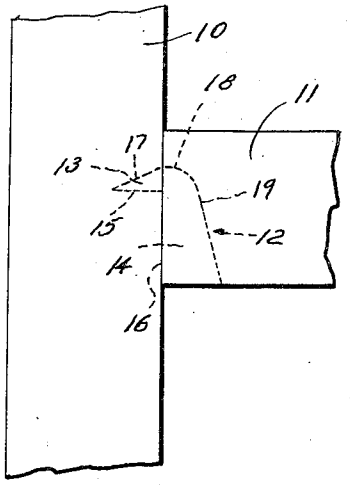
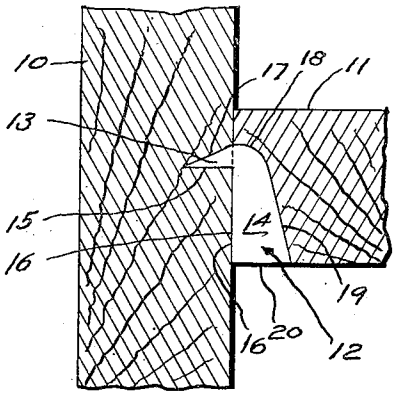


Fig. 5.



INVENTOR.

James C. Hamilton.

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SHELF AND SUPPORTING MEANS THEREFOR

James C. Hamilton, Santa Rosa, Calif.

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7 Claims. (Cl. 248—216)

My present invention relates to shelves and supporting means therefor.

The principal object of my invention is to produce an improved cabinet shelf support.

Another object is to produce a cabinet shelf support to mount shelves on, which is very cheap in cost and which can be made with one machine operation.

Another object is to produce a support of the type above outlined which is not only cheap and simple to manufacture, but which is hidden when in use.

Still another object is to produce a shelf support which may be removed and relocated without the use of tools other than a hammer.

Other objects and novel features comprising the construction and operation of the device will be more apparent as the description of the same progresses.

In the drawings illustrating the preferred form of my invention:

Fig. 1 is a front elevation of a shelf support, the opposite side being a duplicate thereof;

Fig. 2 is an edge elevation as viewed from the pointed side of the spur;

Fig. 3 is a fragmentary front elevation of a segment of a cabinet with a mounted shelf, the shelf support being shown in dotted lines;

Fig. 4 is a fragmental cross-section showing the shelf support in elevation, other parts being indicated in dot-and-dash lines. This figure shows the shelf in a preliminary stage of being mounted on the support, and

Fig. 5 is a cross-section of Fig. 4 cut back to the front surface of the shelf support which is in elevation.

Referring more in detail to the drawing, 10 indicates one corner of a cabinet as viewed from the front edge. 11 indicates one end of a shelf, as viewed from the front corner of the cabinet.

The shelf support is indicated in general at 12, as shown in Figs. 1, 2, and 4, 5, and in dotted lines in Fig. 3.

The shelf support 12 is preferably punched, in one operation, from sheet metal or the equivalent, of approximately twelve gauge. It might also be a casting.

On one side of the shelf support, I have provided a wedge-like spur portion 13 which is integral with a body portion 14. The under side of the spur portion 13 is provided with a horizontal edge 15 forming a right angle with the edge 16 of the body portion 14. The upper side edge 17 of the spur portion 13 is pitched upwardly tangentially engaging a radial curved edge 18 which in turn tangentially engages a straight edge 19. The edge 19 is angularly disposed to the opposite side edge 16, the lower end of which terminates at the bottom edge 20 of the shelf support which is at right angles to the vertical edge 16.

Each end of the cabinet shelf is provided with two or more of these supports 12 and in the case of a cabinet in which adjustable shelves are desired, preformed spur holes may be located by a special gauge or other means. In the case of cabinets not having been prepared with prelocated spur holes, the shelf support may

be mounted in a new location by driving the bracket spur 13 into the wood of the cabinet wall 10 by the use of a hammer. The shelf support 12 may be easily removed by use of the thumb and forefinger of the operator when the shelf is raised and removed.

The end edges of the shelf 11 are each provided with a recess the thickness of the support 12 and having the exact contour of the curved edge 18 and the angular edge 19 of the support 12, in the following manner, without the use of any tools other than a hammer.

Shelf supports 12 are mounted in the side walls 10 of a cabinet. The shelf cut to the right width between the side walls 10 is now snugly placed on the radial curved tops 18 of the shelf supports 12 with the shelf back edge against the back wall of the cabinet. A short piece of wood 21 is now laid against the cabinet wall 10 over the end of the shelf and a hammer 22 is used to pound down the shelf ends on the supports 12. The corners of the support 12 cut a recess into the wood fibers pushing the fibers back and compacting them. When the shelf 11 is down so that the bottom surface of the shelf is flush with the bottom edge 20 of the shelf support, the operation is complete.

Fig. 4 shows the shelf 11 being driven down into place on the support 12. The wood fibers engaged against the edges 18 and 19 of the support 12 are pressed back and compacted and by the time the operation is completed, as shown in Fig. 5, there is an area of compressed wood fibers over the support 12 which is very hard and solid. This compacting of the wood fibers greatly strengthens the wood shelf directly above the shelf supports 12 which is not possible where the recess is formed by milling out a recess for the support.

When the shelf is in place it has the appearance of being permanently mounted in the cabinet such as being glued in place or nailed there. No cracks between the edges of the shelf and cabinet walls are present and there is no shelf support in sight except the bottom edge 20 which is flush with the under side of the shelf and takes careful examination to find. The shelf can now only be moved in one direction which is upwardly in the case of removal for new location.

It should be observed that when the shelf 11 is mounted on the support 12, the support cannot move in any direction and the load on it is vertical; therefore in order to cause a breakdown either the shelf must be forced downwardly forcing the support edges 18 and 19 up through the compacted area of the wood or the shelf support must be broken off at the spur 13. Neither of these results are practical with any load usually applied to a cabinet shelf. Tests have shown that two shelf supports 12 of the size shown in the drawings mounted at either end in a cabinet having a shelf eight inches wide by three-quarter of an inch thick and three feet long will carry a distributed load of five hundred pounds without showing any signs of rupture of the ends of the shelf or the shelf supports 12.

While I have shown the invention in its preferred form yet it is to be understood that I may vary the shape, proportion, angles, and curves within wide latitude while still remaining within the spirit of the appended claims.

Having thus described my invention in detail, what I claim as new is:

1. In a cabinet shelf or the like having an end-carried wall-engaging supporting member therefor, said supporting member comprising a flat, and comparatively thin guage element providing a main body portion which is adapted to be forcibly impaled in the stock of the shelf adjacent an end of the latter and upwardly from the bottom thereof, the plane of said main body portion intersecting that of said shelf end, said member providing when the shelf is in use an outer vertical wall-engaging

edge which is substantially vertically coplanar with at least one of the top and bottom edges of said shelf end, an integral outwardly projecting wall-engaging anchoring prong extending from the wall-engaging edge of said main body portion and substantially coplanar with the latter, said prong having an upwardly inclined top edge extending to said main body portion adjacent the upper end of the latter, and the main body portion of said member being narrowed in the direction of its upper end and providing an inner edge having an upper blunt edged cam portion outwardly inclined in the direction of the upper end of said main body portion and terminating adjacent the latter; and the upper end of said body portion providing a blunt convexly curved shelf-entry portion connecting said inclined prong edge with said cam portion whereby when the member is forced into the bottom of a fibrous material shelf a load-sustaining compacting of shelf material will take place and longitudinal splitting of the shelf if of wood or the like will be prevented.

2. The structure set forth in claim 1, and the length of the main body portion of said supporting member being less than the thickness of said shelf whereby said main body portion may be completely housed in and concealed by said shelf when in use.

3. In a cabinet shelf or the like having an end-carried wall-engaging supporting member therefor, said supporting member comprising a flat, and comparatively thin guage element providing a main body portion which is adapted to be forcibly impaled in the stock of the shelf adjacent an end of the latter and upwardly from the bottom thereof, the plane of said main body portion intersecting that of said shelf end, said member providing when the shelf is in use an outer vertical wall-engaging edge which is substantially vertically coplanar with at least one of the top and bottom edges of said shelf end, an integral outwardly projecting wall-engaging anchoring prong extending from the wall-engaging edge of said main body portion and substantially coplanar with the latter, the main body portion of said member being narrowed in the direction of its upper end and providing an inner edge having an upper blunt edged cam portion outwardly inclined toward and terminating adjacent the upper end of said main body portion, and the upper end of said main body portion providing a blunt convexly curved fibre-compacting shelf-entry portion as a continuation of said cam portion and terminating at the plane of the outer wall-engaging edge of said main body portion, whereby when the member is forced into the bottom of a fibrous material shelf a load-sustaining compacting of shelf material will take place and longitudinal splitting of the shelf if of wood or the like will be prevented.

4. In a cabinet shelf or the like having an end-carried wall-engaging supporting member therefor, said supporting member comprising a flat, and comparatively thin guage element providing a main body portion which is adapted to be forcibly impaled in the stock of the shelf adjacent an end of the latter and upwardly from the bottom thereof, the plane of said main body portion intersecting that of said shelf end, said member providing when the shelf is in use an outer vertical wall-engaging edge which is substantially vertically coplanar with at least one of the top and bottom edges of said shelf end, an integral outwardly projecting wall-engaging anchoring prong extending from the wall-engaging edge of said main body portion and substantially coplanar with the latter, said prong having an upwardly inclined top edge extending to said main body portion adjacent the upper end of the latter and the main body portion of said member being narrowed in the direction of its upper end and providing an inner edge having an upper cam portion inclined in the direction of the top end of said main body portion and terminating adjacent the latter; and the upper end of said body portion providing a shelf entry portion which is narrowed widthwise of said body in the direction of its outer end and extends as a continuation of said cam portion to the plane of the outer edge of said main body portion.

5. In a cabinet shelf or the like having an end-carried wall-engageable supporting member therefor, said supporting member comprising an elongated flat-sided main body portion of substantially uniform thickness and which is reduced in width in the direction of its upper end, said main body portion providing an outer longitudinal edge and an inner cam-providing longitudinal edge which latter is inclined in the direction of the upper end of said body portion, the outer longitudinal edge of said main body portion having a coplanar load-supporting prong for engagement in a carrier wall whereby to give the prong the greatest load sustaining capacity, the length of said main body portion of the supporting member being less than the thickness of said shelf, said shelf having a main body portion-receiving slot opening upwardly from its bottom surface and in communication with the shelf end from which said prong projects, said slot having a closed upper end engaged by the upper end of said main body portion, the slot being dimensioned in substantial conformity to said main body portion of said supporting member, said slot providing an inclined shelf-load-transmitting inner wall bearing against the inclined cam-providing edge of said main body portion, the outer prong-carrying edge of the main body portion being substantially flush with the shelf end whereby when the shelf is in service to provide a carrier wall-engaging bearing surface for transmitting shelf load thereto from said longitudinal cam edge whereby to maintain said prong in operative position and relieve the closed upper slot end of some of the shelf load so as to avoid possibility of splitting of the shelf at the site of the slot.

6. A bracket-like support for cabinet shelves and the like comprising an elongated flat sided main body portion of substantially uniform thickness and which is reduced in width in the direction of its upper end, said main body portion providing an outer longitudinal edge and an inner cam providing longitudinal edge which latter is inclined upwardly toward the plane of the outer longitudinal edge and terminates short of the upper end of said main body portion, the outer longitudinal edge of said main body portion having a coplanar load-supporting prong for engagement in a carrier wall whereby to give the prong the greatest load-sustaining capacity by having its greatest transverse dimension disposed in the direction of load, a narrowed shelf entry portion formed at the top of said main body portion and extending from substantially the plane of said outer edge, said shelf entry portion having an edge inclined in the direction of and merging with said inner cam-providing longitudinal edge, said prong having a load-supporting edge which intersects the outer longitudinal edge of said main body portion at an angle not materially exceeding ninety degres, and the inner cam-providing longitudinal edge of said main body portion and the edge of said shelf entry portion at the upper end thereof being blunt whereby to compact shelf fibre when driven into the stock of a shelf from the lower surface of the latter.

7. The structure set forth in claim 6 and the edge of said narrowed shelf entry portion being curved, and the plane of the load-supporting edge of said prong being substantially normal to the plane of the outer longitudinal edge of said main body portion.

References Cited in the file of this patent

UNITED STATES PATENTS

892,542	McMaster	July 7, 1909
1,581,658	Owens	Apr. 20, 1926
2,261,078	Shockey	Oct. 28, 1941

FOREIGN PATENTS

2,398	Great Britain	of 1908
27,043	Great Britain	of 1908