This invention relates to structural shapes particularly useful as stud or beam members, as shelf-supporting bracket members, and for other purposes in merchandise display equipment, wall structures or the like.

The primary object of the invention is the provision of a strong and durable structural member capable of a multiplicity of uses in various structures, and particularly in a merchandise display unit whereby to facilitate easy and quick setting up or knocking down of such structure.

Other objects and advantages of the invention will be apparent from the following detailed description of the invention and preferred embodiments thereof illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective view of a wall and display unit embodying the invention, with parts broken away; Fig. 2 is a perspective view of a structural unit embodying the invention, with a part broken away; Fig. 3 is an enlarged cross-section on the line 3—3 in Fig. 2; Fig. 4 is a perspective view of such a unit with a bracket arm attached thereto and itself embodying one of said structural units; Fig. 5 is an enlarged cross-section on the line 5—5 in Fig. 4, and in a partially disassembled condition; and Fig. 6 is an enlarged cross-section of an alternative form of a structural unit of the invention.

Referring to the drawings, 11 designates a structural unit embodying the invention and which in Fig. 1 is shown as comprising the frame members of a partition like structure 12 which may be part of a merchandise display unit, as illustrated.

The structural unit 11 (Figs. 2 and 3) is of channel-bar form substantially U-shape in cross-section with its opposed side walls or flanges 13, 13 each provided at or near its free edge with a U-shaped reentrant portion 14 which portion 14 forms an outwardly opening side channel 15B throughout its length which parallels the main channel 16B of the unit and has its opening transverse thereto. The bottom or cross webs of the side channel portions 14B are spaced to provide a restricted opening or neck portion 17B for the channel 16B. The web or bottom portion of the channel 16B has a U-shaped reentrant portion 18B of channel form which opens posteriorly with respect to the channel 17B. The channels 15B and 18B of the unit 11B are all analogous to the channels 15 of the unit 11, and may serve various purposes in the same manner.

In Fig. 1 the units 11 of the wall structure 12 are shown as having brackets 25 attached thereto for supporting shelves 26, which may constitute part of a merchandise display unit or structure. Each bracket 25, in the present instance, as shown in Fig. 4, includes as its body a bar 27 which constitutes a suitable length of a channel unit 11 with its channel opening 17 facing upward. The inner end of the bar is attached by welding or otherwise to the side flanges 28 of a channelled clamping member 29. The bar is also braced relative to the member 29 by a triangular flange 30 attached to a side of the bar 27 and at its broad end to the face of a registering flange 28 of the member 29. Such attaching is preferably by welding. The channel portion of the member 29 is of an outside width adapting it to fit into the restricted channel opening 17 of a structural unit 11 and its bottom is apertured to receive a bolt or threaded stem 31 that carries at its inner end an oblong plate 32 which when turned in one position is freely movable through and in another position engages under the neck restricting portion 14 of the unit, as shown in Figs. 4 and 5. The bracket arms are thus prevented from turning relative to the channel units 11 and project rigidly therefrom.

The shelves 26 may be secured to the bracket bars 27 by clips 33 attached to the undersides of the shelves and having interposed under flanges or lips 34 engaging in the registering side channels of the bar, which channels are here designated 15B. These clips may be slipped lengthwise onto the bracket bar from its outer end.

The structural units 11 may also serve as cross members in a structure 12 to connect one or more of the units 11 thereto, and in such case may serve to hold divider plates 36 in desired positions over a shelf, as shown in Fig. 1. These cross members are designated 11R and may serve to receive in the side channels thereof the respective upper and lower separated panel sections 20. The major channel of a member 11R opens forwardly over a shelf 26 and the division plates may be attached thereto by clips 37, which are similar to the clips 29 in construction and manner of attachment to the frame units. The inner end of a divider plate 36 is firmly received by a U-member 38 that is welded crosswise to opposed base portions of the clip. The clips 37 and attached plates may be adjusted lengthwise of a cross-bar 11B by loosening the clamping bolt.

The cross-bars 11R are attached at each end to a respective upright member 11 by means of a clip 48 which engages with the restricted channel neck of both members and is attached thereto by respective clamping elements.

The bottom or platform member 42 (Fig. 1) is shown as attached at its rear or inner edge to a cross-bar 11B of the wall structure 12 by means of hooked fingers 46 which are fixed to the member 42 and have hooked engagement within the body channel thereof through its restricted neck opening. The front or outer end of the member 42 may have one or more adjustable supports 44. In Fig. 1 a cross-bar 11B is disposed at the lower ends of the vertical bars or units 11 and connected thereto by clips 40. The bar 11B also receives in the upper one of
its side channels the lower edges of respective vertical panels 20, and in its lower side channel the upper edge of a foot panel 20 which, in the present instance, rests at its lower edge on a floor or other subjacent support.

The clamping clips or fastening means 29, 37 and 3-40 are described and claimed in a co-pending application Serial No. 263,669, filed December 27, 1951.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. In a frame unit and support structure which includes at least one upright structural member, and a support carried by said member, the improvement comprising a structural member generally of channel form comprising a web and side walls, and two angle reentrant portions, each forming internal and external shoulders extending lengthwise of the member, said angle reentrant portions comprising arms extending inwardly from the free edges of said side walls which are generally parallel to the web, and arms extending outwardly from the free edges of said first-named arms which are generally parallel to the side walls and form a restricted side channel opening, together with a support comprising a supporting part and an engaging means structurally integral with said supporting part, and at an angle thereto, said engaging means having a generally flat body member and a channel shaped projection extending lengthwise thereof and seated in the restricted side opening of said structural member, and a clamping means inserted through an opening in the rear wall of said projection and turned into a retainer, said retainer having a minimum longitudinal dimension greater than the inside spread of the webs of said side channels and a maximum transverse dimension no greater than the inside spread of said webs, and extending transversely of said structural member and engaging the internal shoulders formed by said side channels.

3. A support for engagement with a structural member generally of channel form having a restricted channel opening, which support comprises a supporting part and an engaging means structurally integral with said supporting part, and at an angle thereto, said engaging means having a generally flat body member with a channel shaped projection extending lengthwise thereof and adapted for seating in the restricted channel opening of a structural member, and means adapted for clamping said engaging means on a structural member.

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