Aug. 15, 1967 D. FRAZIER 3,335,992

CLAMPING BRACKETS FOR A RACK STRUCTURE

Filed Nov. 23, 1965

FIG. 1

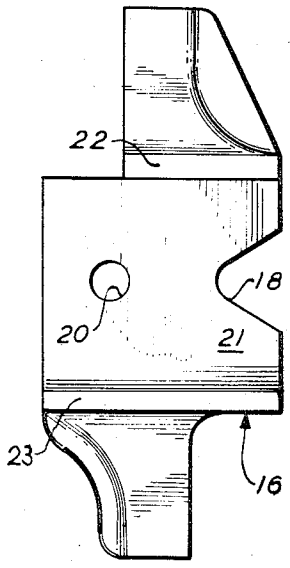


FIG. 2

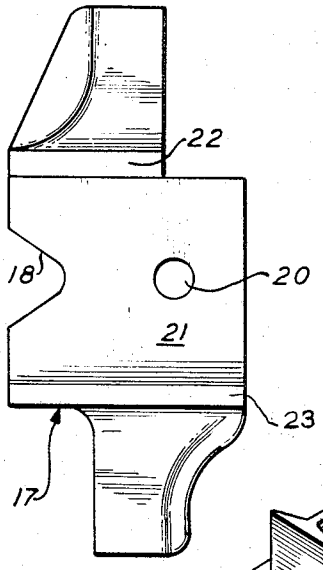
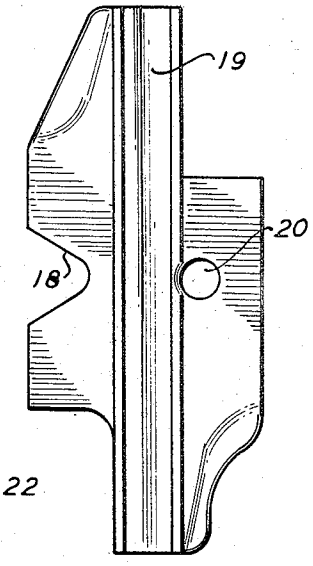


FIG. 3



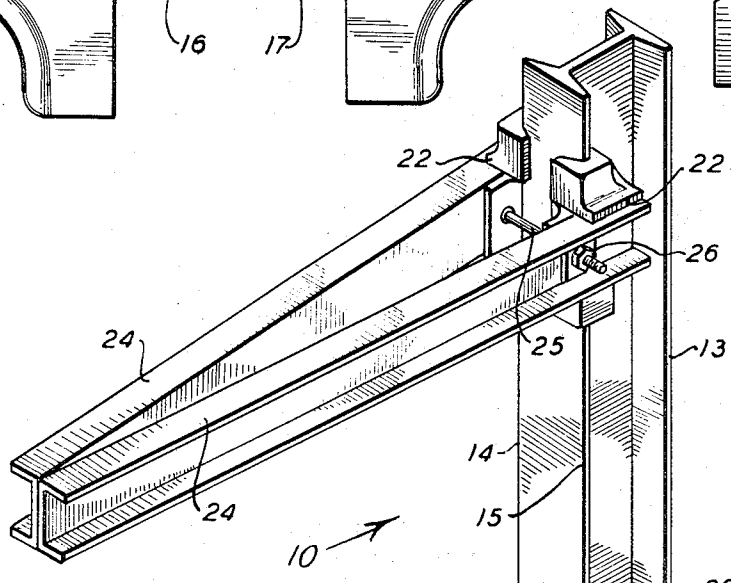


FIG. 4

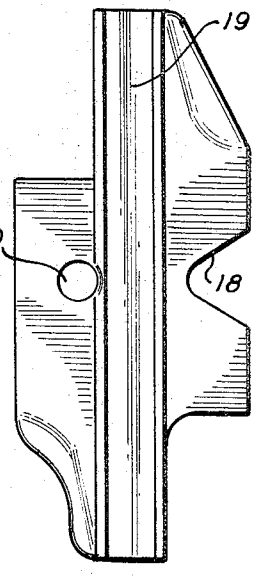
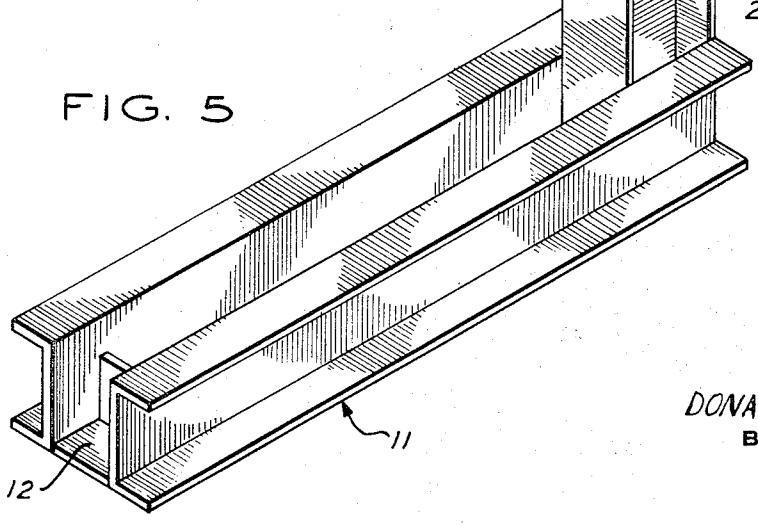


FIG. 5



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United States Patent Office 3,335,992
Patented Aug. 15, 1967

3,335,992

CLAMPING BRACKETS FOR A RACK STRUCTURE

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Filed Nov. 23, 1965, Ser. No. 509,380
5 Claims. (Cl. 248—245)

ABSTRACT OF THE DISCLOSURE

Clamping brackets clamped to a rack arranged in pairs with opposing vertical channels fitting vertical flanges on a support, and horizontal channels on the clamping brackets receiving horizontal supports.

This invention relates generally to racks, and more particularly to racks having specially devised brackets performing the dual function of supporting horizontal arms, and also adjusting their height. A rack according to the present invention is:

(1) Readily adjustable as to heights;

(2) Permits the application of a plurality of superposed arms without the necessity of removing arms or slipping them over the top;

(3) Provides rigid stationing, and easy adjustment of arms either upwardly or downwardly;

(4) Uses standard steel fabricated parts in the interest of attaining low cost, and constant availability of parts;

(5) Can support great weight;

(6) Can be setup and demounted with ease, and shipped with ease;

(7) Can be setup as a duplex rack, i.e., with arms extending both forward and rearward;

(8) Provides pairs of complementary brackets of great strength and ease of adjustment.

These objects and advantages, as well as other objects and advantages may be attained by way of illustration in the drawings, in which:

FIGURE 1 is a front elevational view of the outer face of one of a pair of brackets;

FIGURE 2 is a front elevational view of the outer face of the other of a pair of complementary brackets, and same being the mirror image of the one shown in FIGURE 1;

FIGURE 3 is a rear elevational view of the inner face of the bracket shown in FIGURE 1;

FIGURE 4 is a rear elevational view of the inner face of the bracket shown in FIGURE 2; and

FIGURE 5 is a view of a portion of a rack assembled with cantilever arms by the use of the brackets.

Referring now to the drawings in detail, a cantilevered rack **10** is provided, having a base **11** consisting of a pair of channels conected together at one end by a suitable member **12**. At the other end, the base **11** is connected to a vertical member **13**. While it is shown that this vertical member **13** is an I-beam, it is not necessary that the vertical member be of this type. It may be any type of steel member having at least a pair of edges **14, 15**. A pair of complementary brackets **16, 17** are provided for gripping the edges **14, 15**. In FIGURE 1 and FIGURE 2, there is shown the outer faces of this pair of brackets. The brackets **16, 17** are preferably provided with notches **18, 18**, which are merely for purposes of reducing the weight of the brackets **16, 17**. The brackets **16, 17** are provided with channels **19** on their inner faces, as shown in FIGURES 3 and 4. These channels are dimensioned to embrace the edges **14, 15** of a vertical member **13**. The brackets **16, 17** are provided with holes **20, 20**, which

extend through them but do not intersect with, and are offset from the vertical channels. The holes **20, 20** are on the opposite side of the notches **18, 18**. On the outer faces of the brackets **16, 17**, as shown in FIGURES 1, and 2, there are horizontal channels **21**, which are defined at the top by the lips **22**, and at the bottom by the lips **23, 23**. In these channels **21, 21**, the U-shaped members or channels **24, 24** are inserted. These U-shaped members **24, 24** are provided with holes (not shown) corresponding with the holes **20**, in the brackets **16, 17**. Through these holes, a bolt **25** is passed (see FIG. 5) and a nut **26** is arranged in threaded engagement with the bolt **25**. On tightening the nut **26**, the vertical channels **19, 19** are caused to be brought into seizing engagement with the edges **14** and **15**; likewise, the U-shaped members **24, 24** are firmly held in the channels **21, 21**. It is preferred, for added strength, that the U-shaped members **24, 24** shall be welded together at the outer ends of the said members **24, 24**, or be connected together by bolts, welding, or in some other manner in the interest of greater strength.

The attachment brackets **16, 17** are simple in form, sturdy, and readily applied to an I-beam to permit horizontal support members in U-shaped channels to be rigidly attached thereto, and the support members are readily adjustable upwardly and downwardly, so that the rack may accommodate many sizes or heights of materials thereon. Furthermore, in assembling a rack with a pair of brackets of this kind, it is not necessary to slide the brackets down over the top of the vertical support **13**, and even after the rack is assembled, additional horizontal channels may be applied thereto to provide additional storage space. Furthermore, the rack may be operated as a duplex rack by additional horizontal support arms extending in an opposite direction by attaching them to the opposite side of the vertical member **13**. It is noted that the channels do not interfere with each other when attached to the vertical support member **13**, so that the horizontal support members may be adjusted upwardly and downwardly with respect to each other on opposite sides of the vertical support **13**, without any interference, the one with the other. Since standard structural components are involved with the exception of the brackets, a low cost device composed of readily obtainable parts is provided with great versatility of adjustment, size, height, width and use.

The foregoing description is merely intended to illustrate an embodiment of the invention. The component parts have been shown and described. They each may have substitutes which may perform a substantially similar function; such substitutes may be known as proper substitutes for the said components and may have actually been known or invented before the present invention; these substitutes are contemplated as being within the scope of the appended claims, although they are not specifically catalogued herein.

What is claimed:

1. Clamping brackets for a rack structure comprising:

(a) a pair of right and left hand brackets adapted to be mounted on flanges of a vertical support in opposed relation;

(b) an inner and an outer face on each of the right and left hand brackets;

(c) a generally vertical channel on the opposing inner faces of each of the brackets, dimensioned to receive a generally vertical support member;

(d) a generally horizontal channel on the outer face of each of the brackets, dimensioned to embrace a horizontal support;

(e) means to connect the brackets together to seize the flanges of the vertical support.

2. In a rack structure comprising:
(a) the device according to claim 1,
(b) a generally vertical support member embraced by the brackets.

3. In a rack structure comprising:
(a) the device according to claim 1,
(b) a generally vertical I-beam defining the vertical support member, embraced by the brackets.

4. In a rack structure comprising:
(a) the device accordiing to claim 1;
(b) a pair of generally horizontal support members each engaged with the horizontal channel of one of the brackets.

5. A rack comprising:
(a) the device according to claim 1;
(b) a generally vertical support member embraced by the brackets;
(c) generally horizontal support members each positioned in the horizontal channels of one of the brackets;

(d) attaching members passed through the horizontal support members and the brackets, clinching them together, whereby the vertical support members are seized by the brackets, and the horizontal support members are held in the horizontal channels, and
(e) a base attached to the bottom of the vertical support member.

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