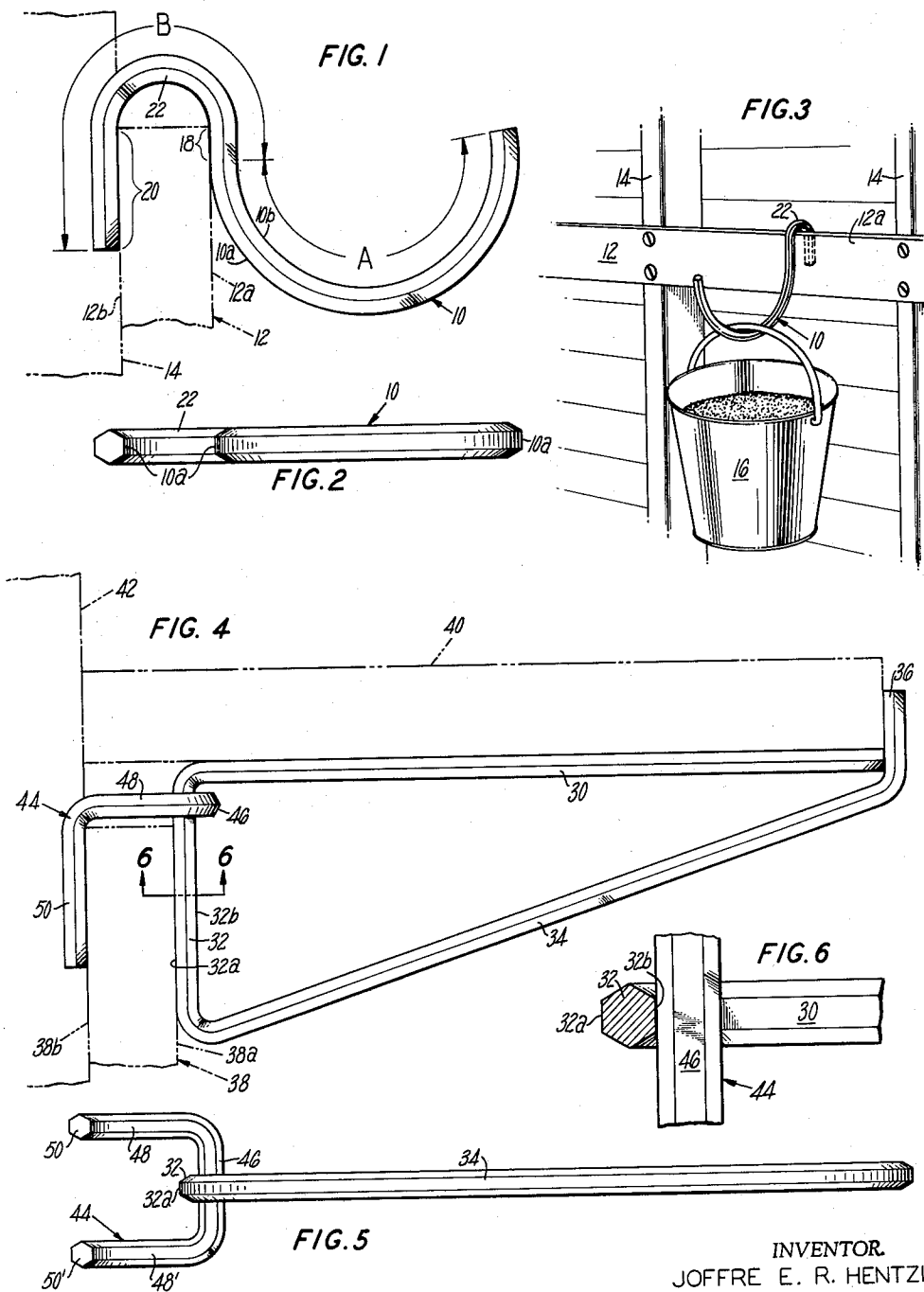


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J. E. R. HENTZI
DETACHABLE BRACKET
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DETACHABLE BRACKET

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This invention relates generally to detachable brackets and is more specifically directed to improved brackets which are removably secured to a wall support or the like for upholding a vertical load.

A primary object of the present invention is the provision of an improved bracket which is particularly suited to be attached to a horizontal support rail without perforating or otherwise preparing its surface and without requiring additional attachments or the use of special tools. Included in this object is the aim of providing a support rail and bracket assembly for supporting different objects of various weights.

An additional primary object of the present invention is the provision of an improved bracket which is removably mounted at one end over a support rail to project outwardly therefrom in securely hooked engagement so as to resist canting and the lateral displacement or wobble often encountered in cantilever brackets.

A more specific object of the present invention is the provision of an improved bracket of the type described having a simplified integral construction which is economically manufactured to provide a rugged and efficient structure for repeated use over extended periods of time.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth, and the scope of the application of which will be indicated in the appended claims.

In the drawing:

FIG. 1 is a side view of one embodiment of a bracket constructed in accordance with the present invention;

FIG. 2 is a bottom view of the bracket of FIG. 1;

FIG. 3 is a perspective view of the bracket of FIG. 1 illustrated on a reduced scale and mounted in operative position on a support rail;

FIG. 4 is another embodiment of a bracket constructed in accordance with the present invention;

FIG. 5 is a bottom view of the bracket of FIG. 4; and

FIG. 6 is an enlarged fragmentary cross-sectional view taken along the line 6—6 of FIG. 4.

Referring first to that form of the invention illustrated in FIGS. 1—3, inclusive, a relative rigid bracket, generally designated by the numeral 10, is preferably formed of a suitable metallic wire cut and bent to a desired shape, such as that comprising a U-shaped semi-circular arm A integrally connected opposite its free end to an inverted U-shaped support hook B forming a coplanar cantilever structure. The bracket 10 is thus adapted to be removably hooked over a wall support or the like, such as the horizontal rail 12 secured to vertical wall studs 14, to provide a cantilever arm A extending outwardly in a plane perpendicular to the support rail 12 for upholding different objects of various weights, for example, the depending bucket 16 illustrated in FIG. 3.

In order to provide a stable bracket which will effectively resist lateral displacement and wobbling in accordance with this invention and which will also minimize the intensity of pressure on the supporting surfaces of rail 12, the metal wire of which bracket 10 is composed is shown as being formed with a hexagonal cross section to provide a rod having six flat sides while at the same time retaining a generally circular shape for maximum

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utility. One end of a rod is bent into hook B so that the flat side 19a is formed in a diametrically opposed relationship and presented parallel to the surface of rail 12, shown in phantom in FIG. 1, so as to engage opposite faces thereof, the extent of engagement being defined by first and second gripping fingers or vertical members 18 and 20 extending downwardly from an interconnecting arcuate segment 22 forming the throat of hook B and overlying the top of rail 12.

In this manner, first and second fingers 18 and 20 are uniformly spaced apart a predetermined distance corresponding to the maximum dimension of the throat of hook B for respectively engaging a front face 12a and rear face 12b of rail 12. The broad engagement between side 10a and faces 12a and 12b reduces the tendency of bracket 10 to dent the rail 12, and even greater stability can be obtained if desired by providing a slight interference fit. In this regard, hook B is sufficiently resilient so that members 18 and 20 can be slightly spread apart for clamping engagement on rail 12. When a length of 1 x 4 inch board having a finished thickness of $2\frac{3}{32}$ inch is used as the rail 12 and fingers 18 and 20 are spaced apart $\frac{3}{4}$ inch to provide interference in the order of $\frac{1}{32}$ inch, the assembly has been found to work satisfactorily.

Upon being mounted on rail 12, side 10b of bracket 10 additionally provides a broad bearing surface for receiving the vertical load, side 10b being diametrically opposed to the side 10a of the hexagonal rod. Such a bearing surface additionally promotes the lateral stability of the bracket 10 in providing increased frictional resistance to reduce shifting of the load and consequent wobbling which is so often encountered in cantilever brackets. When it is desired to remove the bracket 10, it is simply pulled upwardly to release the hook B from the rail 12.

In the embodiment of the invention illustrated in FIGS. 4—6 inclusive, a two-piece rod assembly is employed, which again utilizes wire shown as being hexagonal in cross section, but rather being curved it is bent at selected points to form generally rectilinear rod segments performing the same general functions as those described in connection with the first embodiment.

In this form of the invention, a length of rod is successively bent to form a right triangle having a pair of perpendicular members 30 and 32, corresponding respectively to the arm A and the first finger 18 of the previous embodiment, and a connecting member 34 extending outwardly and upwardly from member 32 to the free end of arm 30 at which point member 34 is secured as by welding and terminates in an upwardly extending portion 36 which provides a stop for a supported object. Member 32 is relatively short and vertically disposed so as to be adapted to be engaged against the front face 38a of a rail 38 and is provided with a flat side 32a which bears against face 38a which additionally provides a bearing surface on the horizontally extending arm 30 for receiving a shelf 40 or the like, the rail 38 and shelf 40 being shown in phantom in FIG. 4 braced against a stud 42.

A further feature of the embodiment shown in FIGS. 4—6 is that a second length of hexagonal rod is formed into a straddle-legged bracket, generally designated by the numeral 44, symmetrically connected adjacent the junction of arm 30 and the vertical member 32 to cooperate therewith in providing a hook for supporting the arm 30. Bracket 44 generally comprises a connecting link 46 joining the free ends of two horizontal segments 48 and 48' of a pair of substantially identical inverted L-shaped legs which are uniformly spaced apart. Each of the horizontal segments 48 and 48' overlie the top of the rail 38 and have depending vertical segments

50, 50' extending downwardly with a flat side in engagement with its rear face 38b.

The connecting link 46 is thereby formed in mutually perpendicular relationship with the horizontal segments 48 and 48' of the L-shaped legs and also with the vertical member 32 which is integrally formed in continuation with the fixed end of arm 30. As best seen in FIG. 6, the flat side 32b of member 32 engages the edge of the connecting link 46 upon their being positioned in assembled relationship prior to being secured, for example, by welding to assure perpendicular alignment and increased strength due to the broad area of contact between the component rods provided by the flat side 32b diametrically opposed to side 32a of member 32. In addition, there is a saving of assembly time by virtue of the described structure.

The present invention provides a stable cantilever bracket particularly suited for substantially wobble-free support of an applied loading force on a broad bearing surface of the bracket. The bracket can be manufactured at low cost utilizing a wire construction which is readily finished to a smooth surface which may be treated so as to be free from oxidation. In the event a plurality of rod segments are to be joined in accordance with the invention, a bracket of increased strength will be obtained at reduced cost of assembly by virtue of the disclosed structure.

As will be apparent to persons skilled in the art, various modifications and adaptations of the structure above described will become readily apparent without departure from the spirit and scope of the invention, the scope of which is defined in the appended claims.

I claim:

1. For engageably hooking over a support rail, a detachable bracket comprising a rodlike body of hexagonal cross section including a cantilever arm extending outwardly from a rail, said arm being positioned with a side forming a flat bearing surface on the uppermost portion thereof for receiving a vertical load, and a hook for holding the arm having a first vertical member fixed to the arm, and a second vertical member interconnected with the first vertical member, the first and second vertical members respectively presenting opposed flat sides engageable with opposite faces of a rail and spaced apart a predetermined distance for providing an interference fit therewith for increased bracket stability.

2. A detachable bracket for engageably hooking over a support rail and comprising a rodlike body including a cantilever arm portion for receiving a vertical load, and a hook portion attachable to a rail for holding said arm portion, said hook portion having a substantially identical pair of inverted L-shaped legs uniformly spaced apart, said legs each having a horizontal segment for overlying the top of a rail and a connected vertical segment depending from said horizontal segment, a connecting link extending between said legs and fixed to an end of said horizontal segment of each of said legs for joining the same, and a vertical member fixed to said arm portion in spaced opposed relation to a plane containing said vertical segments of said legs, said vertical segments and said vertical member respectively presenting a flat side for intimate surface-to-surface contact with opposite faces of a rail, said vertical member further including a flat contact surface diametrically opposed to said flat side thereof, and said connecting link being rigidly fused intermediate its ends to said flat contact surface of said vertical member thereby to provide increased dimensional stability between said hook portion and said arm portion.

3. The bracket of claim 2 wherein said rodlike body of said bracket is bent to shape and is of hexagonal cross section, and wherein said cantilever arm portion extends horizontally outwardly and is positioned with an upwardly facing side forming a flat bearing surface for receiving a vertical load.

References Cited by the Examiner

UNITED STATES PATENTS

2,291,178	7/1942	Vanderwerp et al.	248—303
2,606,733	8/1952	Krajewski	248—215
2,904,300	9/1959	Kirk	248—340
2,954,125	9/1960	Husted	108—62

FOREIGN PATENTS

869,120	1/1953	Germany.
15,072	1909	Great Britain.
331,760	7/1930	Great Britain.
934,767	8/1963	Great Britain.

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