Oct. 31, 1950 O. VALASEK 2,527,899

SUPPORTING BRACKET

Filed Feb. 26, 1948

Fig. 1

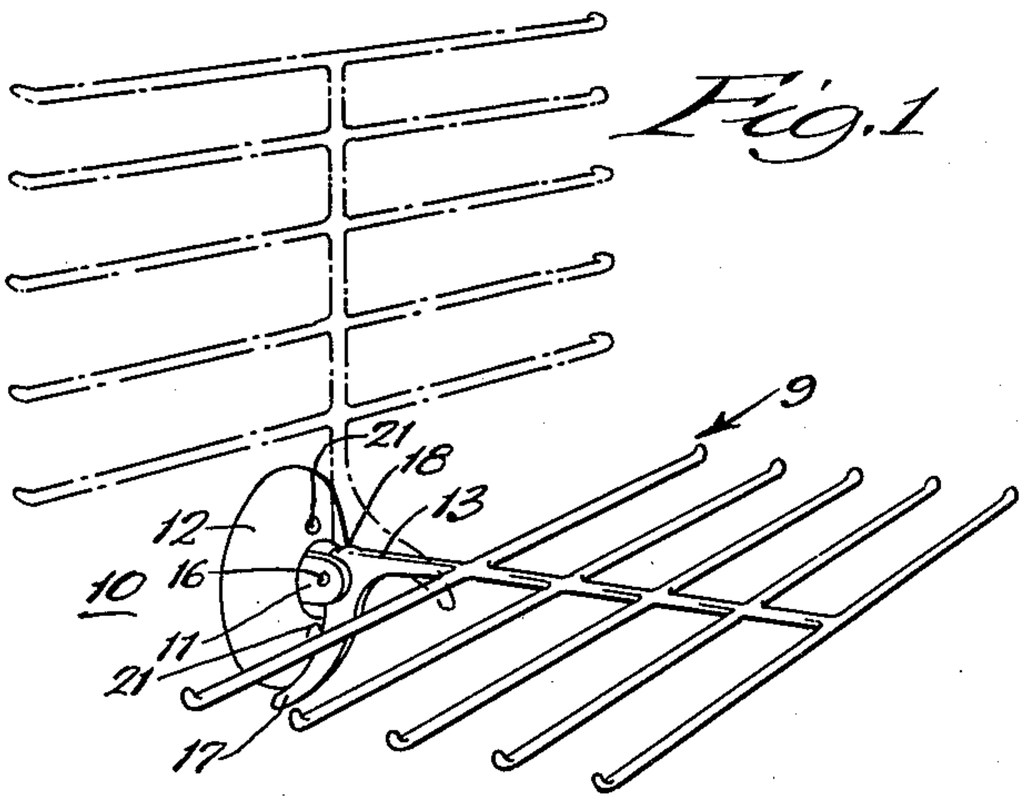


Fig. 2

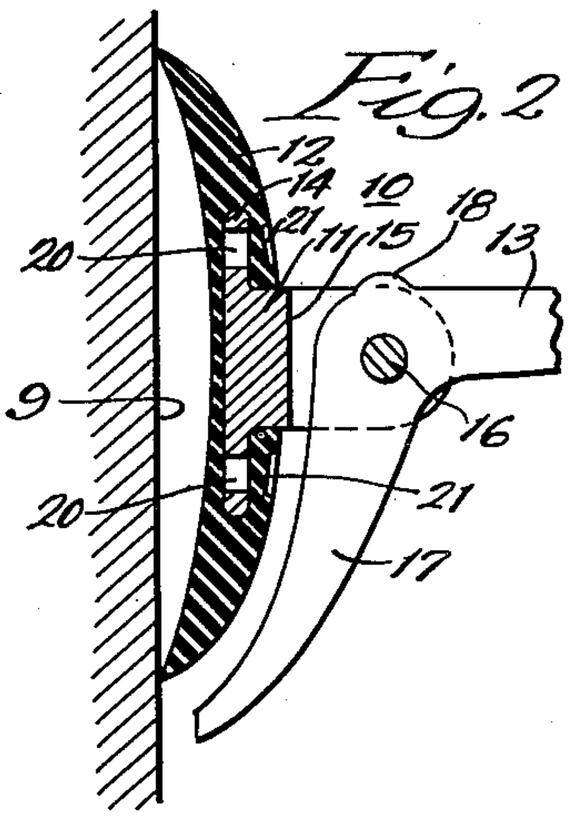


Fig. 3

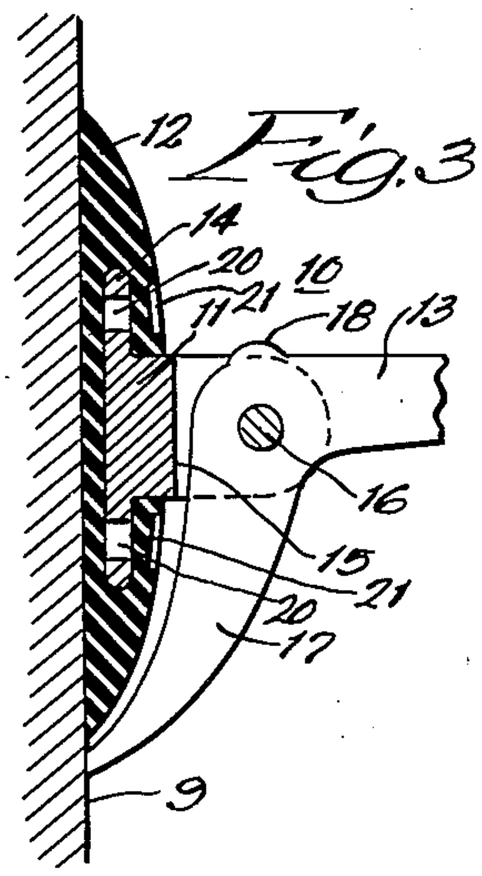


Fig. 4

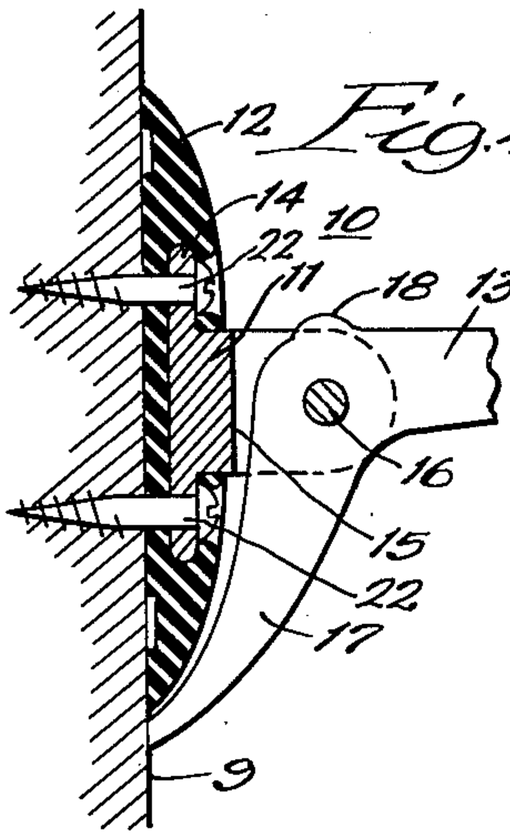


Fig. 5

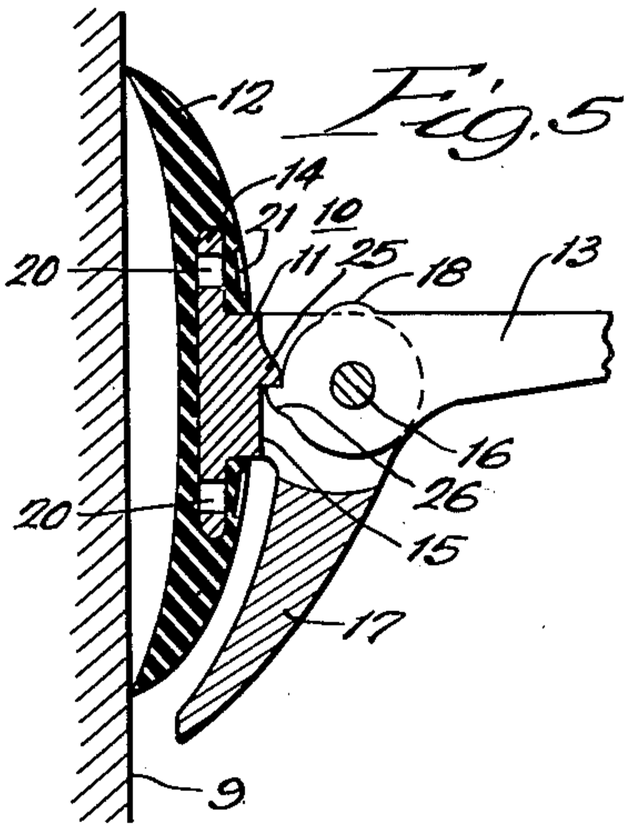
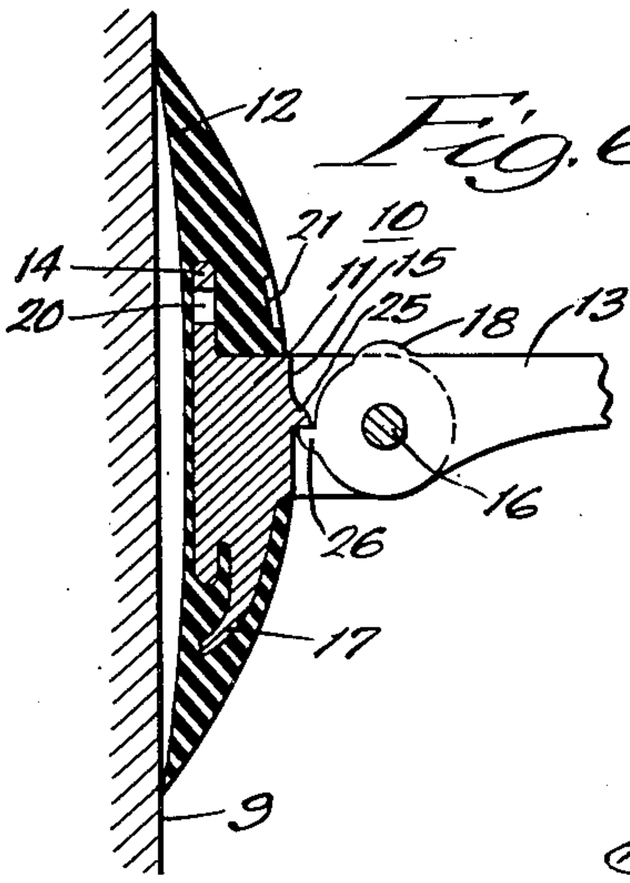


Fig. 6



Inventor:
Otakar Valasek,

By Dawson, Orms, Booth & Spangenberg,
Attorneys.

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2,527,899

SUPPORTING BRACKET

Otakar Valasek, Chicago, Ill.

Application February 26, 1948, Serial No. 11,092

8 Claims. (Cl. 248—206)

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This invention relates to supporting brackets.

The principal object of this invention is to provide an improved supporting bracket for supporting articles outwardly from a vertical surface wherein the supporting bracket is readily secured to the vertical surface, wherein it is securely held in place thereon, and wherein it may be readily removed therefrom. The supporting bracket of this invention is capable of innumerable uses, but it is particularly useful in connection with towel racks, tie racks, drying racks, coat racks and the like.

In accordance with this invention the supporting bracket preferably includes a horizontally extending core for supporting the articles outwardly from the vertical surface, a mounting member carried by the core for securing the core to the vertical surface, and a depending arm carried by the core for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the mounting member. This leverage action afforded by the depending arm reacting on the vertical surface substantially eliminates shearing or sliding and twisting reactions in the mounting member where it is secured to the vertical surface and resolves substantially all of the force caused by the weight of the supported articles into substantially a single horizontal pulling force. As a result the supporting bracket is more securely mounted on the vertical surface than if the depending arm were omitted.

This is particularly true when the supporting member is of the type having a surface adapted to be adhesively secured to the vertical surface or of the suction cup type wherein it is held in place on the vertical surface by suction. It is found that the adhesive mounting and the suction mounting are considerably stronger in tension resulting from horizontal pull than in shear or sliding or twist resulting from outwardly suspended weight. The mounting member may also have provision for receiving fastening screws if a strictly permanent installation is desired and the arrangement is such that such provision will in no way affect the operation of the mounting member when semi-permanent or removable installation by adhesive or suction is desired.

The depending arm may be formed integrally with the core member and may be located within the mounting member or externally thereof. The core member, if desired, may pivotally carry a supporting member for the articles and in that event the depending arm may be carried by the supporting member or by the core member.

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Other objects and advantages will becomes apparent to those skilled in the art upon reference to the accompanying specification, claims and drawing in which:

Figure 1 is a perspective view showing the supporting bracket secured to a vertical surface;

Figure 2 is a sectional view through one form of the invention showing the supporting bracket about to be secured to the vertical surface;

Figure 3 is a sectional view similar to Figure 2, but showing the supporting bracket secured to the vertical surface by suction or adhesive;

Figure 4 is a sectional view similar to Figure 3, but showing the supporting bracket secured to the vertical surface by fastening screws;

Figure 5 is a sectional view similar to Figure 2, but showing another form of the invention,

Figure 6 is a sectional view similar to Figures 2 and 5, but showing still another form of the invention.

Referring first to Figure 1, the supporting bracket of this invention is generally designated at 9 and is shown to be secured to a vertical surface 10. The supporting bracket includes a core 11 and a mounting member 12 carried by the core for mounting the supporting bracket on the vertical surface. The core 11 carries a supporting member 13 and as shown in Figure 1 for illustration purposes, the supporting member comprises a towel rack. Also, as shown in Figure 1 the supporting member 13 is pivotally carried by the core 11 so that it may assume an extended horizontal position as indicated in solid lines or a retracted vertical position as indicated in dotted lines.

Referring now to Figures 2 and 3, the core 11 is provided at its inner end with a flange 14 over which is formed the mounting member 12. The mounting member 12 illustrated in Figures 2 and 3 is of the suction cup type and is made of rubber or like material. The rubber suction cup 12 is molded over the flange 14 of the core 11 which is preferably made of metal or suitable hard plastic.

The outer end of the core 11 is bifurcated at 15 for receiving the supporting member 13 between the bifurcated ends. The supporting member 13 is pivotally mounted between the bifurcated ends by a suitable pivot pin 16. The supporting member 13 is provided with a depending arm 17 which is adapted to react with the vertical surface 9 by contacting the same when the suction cup 12 is secured to the vertical surface.

Figure 2 shows the supporting bracket about to be secured to the vertical surface by suction and Figure 3 illustrates the same so secured. It is noted that in Figure 3 the depending arm 17 en-

gages the vertical surface 9 beneath the suction cup 12, and hence below the core 11. When articles are placed on the supporting member 13, the weight thereof pivots the supporting member 13 about the pivot pin 16 and causes the depending arm 17 to forcefully engage the vertical surface 9. The point of engagement of the depending arm 17 with the vertical surface provides a fulcrum point about which the supporting bracket tends to rotate, and hence the weight carried by the supporting member reacts to provide a substantially horizontal pull upon the suction cup 12. The lever action provided by the depending arm 17 substantially eliminates the shear or sliding or twisting forces which would be set up in the suction cup 12 if the depending arm were eliminated. Since the force exerted on the suction cup by the weight of the articles supported by the supporting bracket is substantially a horizontal pull as distinguished from a shearing, sliding or twisting force the suction cup is more securely held in place on the vertical surface.

The supporting member 13 is preferably provided with a lug 18 which is adapted to engage the core 11 when the supporting member 13 is pivoted to a vertical position, and thus provide a detent means for maintaining the supporting member 13 in the vertical position.

The supporting member 13 is maintained in the horizontal position by the depending arm 17 engaging the vertical surface 9.

The flange 14 of the core 11 is preferably provided with holes 20 and the mounting member 12 is provided with indicators in the form of dimples 21 in alignment with the holes 20 for indicating the positions of such holes. Thus, if it is desired to permanently secure the supporting bracket to the vertical surface, this may be accomplished by inserting fastening screws 22 through the dimples 21 and the holes 20 as is illustrated in Figure 4.

The mounting member 12 in lieu of being secured to the vertical surface by suction or by the fastening screws may be adhesively secured thereto by a suitable adhesive applied to the inner surface of the mounting member. Rubber cement or other types of adhesive may be used for this purpose. In the case of adhesively securing the mounting member to the vertical surface, the curvature of the inner surface thereof may be reduced or may even be flat and, in the latter event it may be desirable to make the mounting member of more rigid material than if the mounting member were of the suction cup type. In order to provide additional capacity for the adhesive material the interior surface of the mounting member 12 may be provided with an annular groove as indicated in Figure 4.

From the foregoing it is seen that there is provided a supporting bracket which may be secured to a vertical surface by suction, adhesive or fastening screws and provision is made whereby any of these securing methods may be interchangeably utilized. For example, the provision of the holes 20 in the flange 14 for receiving the securing screws 22 has no effect whatsoever upon the suction characteristics of the mounting member 12 when suction mounting is desired for these holes are completely encased by the mounting member.

The form of the invention illustrated in Figure 5 is substantially the same as that illustrated in Figures 2 to 4 with the exception that the depending arm 17 is formed on the core 11 rather than on the supporting member 13. The function, however, of the depending arm 17 is exactly the same in both cases.

In order to maintain the supporting member 13 in a horizontal position the inner end thereof is provided with an abutment 26 to engage an abutment 25 formed on the core 11. When the supporting member 13 is pivoted to the vertical position the lug 18 cooperates with the abutment 25 to form a detent means for maintaining the same in a vertical position.

The form of the invention illustrated in Figure 6 is the same as that in Figure 5 with the exception that the depending arm 17 formed on the core 11 is wholly encased within the mounting member 12. While the depending arm 17 in Figure 6 does not directly contact the vertical surface it nevertheless reacts with the vertical surface below the core 11 to obtain substantially the same beneficial results which are obtained by the other forms of this invention.

While for purposes of illustration several forms of this invention have been disclosed, other forms may become apparent to those skilled in the art, and therefore, this invention is to be limited only by the scope of the appended claims.

I claim:

1. A supporting bracket for supporting articles outwardly from a vertical surface comprising a horizontally extending core, a supporting member pivotally mounted on the outer end of the core to be extended outwardly from the wall for supporting the articles, an abutment on the supporting member, a stop on the core engageable with the abutment for holding the member in extended position, a single piece suction cup rigidly secured to the inner end of the core for supporting and securing the core to the vertical surface, and a depending arm carried by the core for reacting on the vereical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the suction cup.

2. A supporting bracket for supporting articles outwardly from a vertical surface comprising a horizontally extending core, a supporting member pivotally mounted on the outer end of the core to be extended outwardly from the wall for supporting the articles, an abutment on the supporting member, a stop on the core engageable with the abutment for holding the member in extended position, detent means for holding the member in retracted position adjacent the vertical surface, a single piece suction cup rigidly secured to the inner end of the core for supporting and securing the core to the vertical surface, and a depending arm carried by the core for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the suction cup.

3. A supporting bracket for supporting articles outwardly from a vertical surface comprising a horizontally extending core, a supporting member pivotally mounted on the outer end of the core to be swung vertically from a vertical position adjacent the vertical surface to a horizontal position away from the vertical surface, a single piece suction cup rigidly secured to the inner end of the core for supporting and securing the core to the vertical surface, and a depending arm carried by the supporting member for reacting on the vertical surface below the core when the horizontal member is horizontally disposed to provide a leverage action whereby the weight of the supported articles produces a

substantially horizontal pull on the suction cup.

4. A supporting bracket for supporting articles outwardly from a vertical surface comprising a horizontally extending core, a supporting member pivotally mounted on the outer end of the core to be swung vertically from a vertical position adjacent the vertical surface to a horizontal position away from the vertical surface, detent means for holding the supporting member in the vertical position, a single piece suction cup rigidly secured to the inner end of the core for supporting and securing the core to the vertical surface, and a depending arm carried by the supporting member for reacting on the vertical surface below the core when the horizontal member is horizontally disposed to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the suction cup.

5. A supporting bracket for supporting articles, outwardly from a vertical surface comprising a horizontally extending core for supporting the articles and provided with a flange on its inner end, a mounting member formed over the flange of the core for securing the core to the vertical surface, holes in the flange of the core for receiving fastening screws extending through the mounting member, indicators on the mounting member indicating the position of the holes in the flange of the core member, and a depending arm carried by the core for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the mounting member.

6. A supporting bracket for supporting articles, outwardly from a vertical surface comprising a horizontally extending core for supporting the articles and provided with a flange on its inner end, a mounting member formed over the flange of the core for securing the core to the vertical surface, holes in the flange of the core for receiving fastening screws extending through the mounting member, indicators on the mounting member indicating the position of the holes in the flange of the core member, and a depending arm carried by the core and contained within the mounting member for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the mounting member.

7. A supporting bracket for supporting articles, outwardly from a vertical surface comprising a horizontally extending core for supporting the articles and provided with a flange on its inner end, a suction cup formed over the flange of the core for securing the core to the vertical surface, holes in the flange of the core for receiving fastening screws extending through the suction cup, indicators on the suction cup indicating the position of the holes in the flange of the core member, and a depending arm carried by the core for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the suction cup.

8. A supporting bracket for supporting articles, outwardly from a vertical surface comprising a horizontally extending core for supporting the articles, a mounting member carried by the core and having a surface adapted to be adhesively secured to the vertical surfaces, holes in the flange of the core for receiving fastening screws extending through the mounting member, indicators on the mounting member indicating the position of the holes in the flange of the core member, and a depending arm carried by the core for reacting on the vertical surface below the core to provide a leverage action whereby the weight of the supported articles produces a substantially horizontal pull on the mounting member.

OTAKAR VALASEK.

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