

[54] BRACKETS

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[51] Int. Cl.² **A47F 5/00**

[58] Field of Search **248/223, 224, 225, 220.5, 248/DIG. 3; 211/87**

[56] **References Cited**

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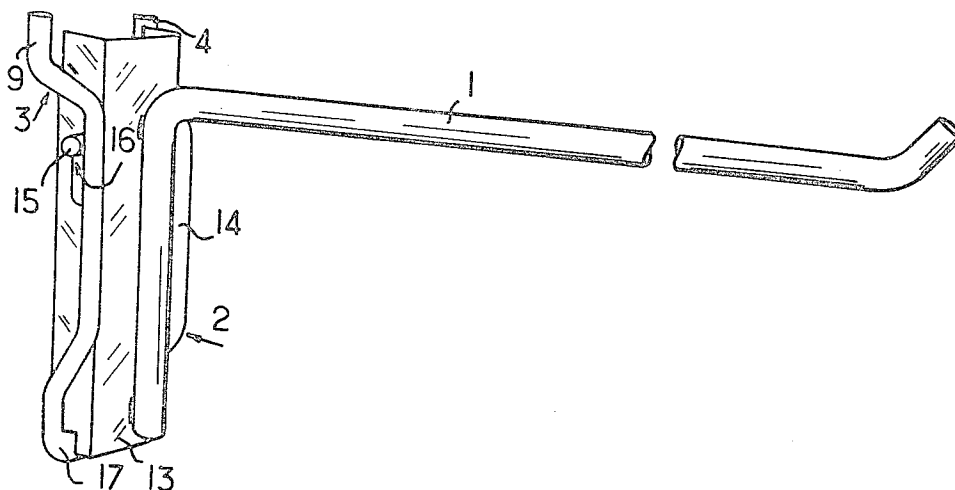
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[57] **ABSTRACT**

An improved article-supporting bracket assembly for perforated panels is disclosed. The improved bracket assembly is dynamically stable. The prong means is fixedly attached to a pivot pin which is slidably engaged within the bracket body. Upon insertion into a perforated board, the prong means are rotatable with the pivot pin to a non-forced locking position parallel to the perforated board. The bracket body is then slid down on the pivot pin to retain the prong means securedly against the perforated board. By this means the bracket assembly is retained securedly against the perforated board without the prong means or any other part of the bracket assembly being made to undergo a forced depression or fit. This imparts a dynamic stability to the normally fragile and unstable perforated board, since no force is required to either secure or unsecure the bracket assembly to the board. This is contrary to heretofore known devices in which the use of force upon insertion or removal of bracket assemblies not infrequently caused spilling of the articles on the board from the board. An additional provision is the inclusion of a support arm which is pivotable on the bracket body so that it may be swung out of the way when not in use.

4 Claims, 7 Drawing Figures



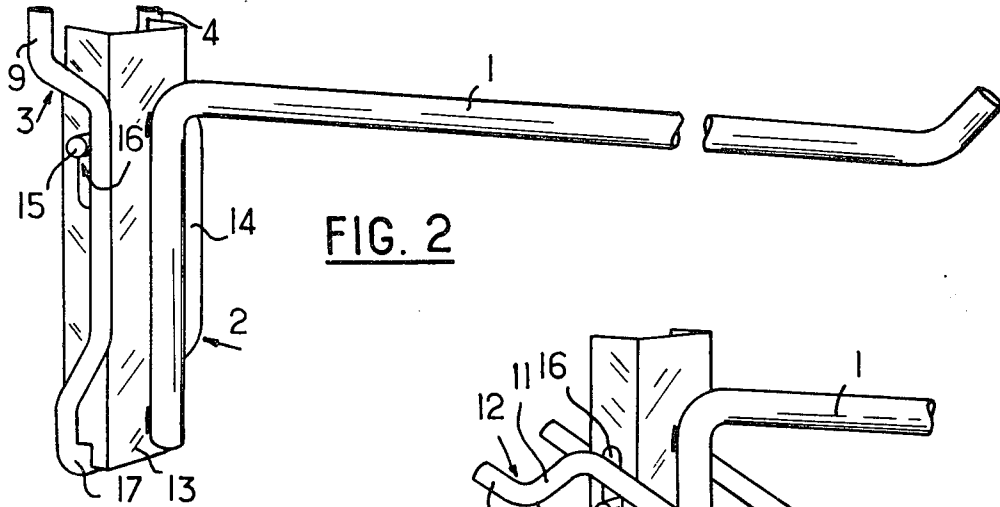


FIG. 2

FIG. 1

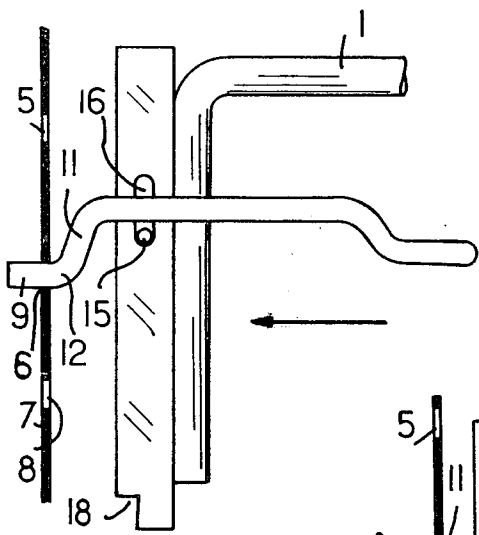


FIG. 3

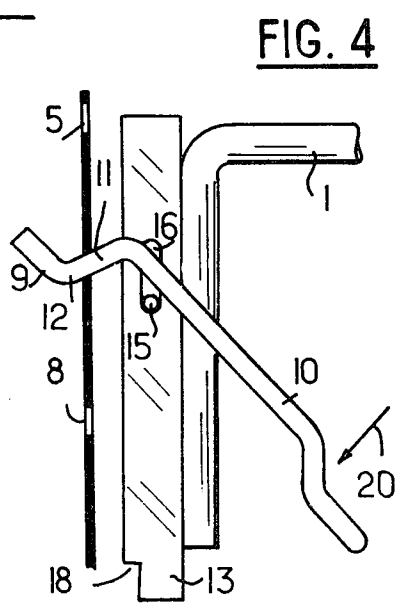


FIG. 4

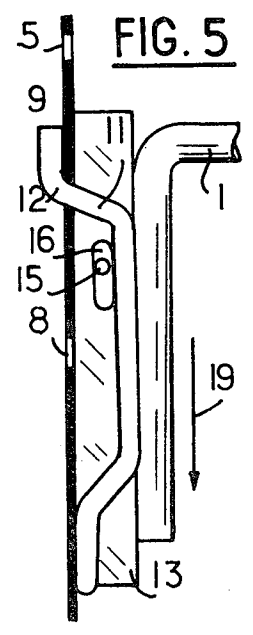


FIG. 5

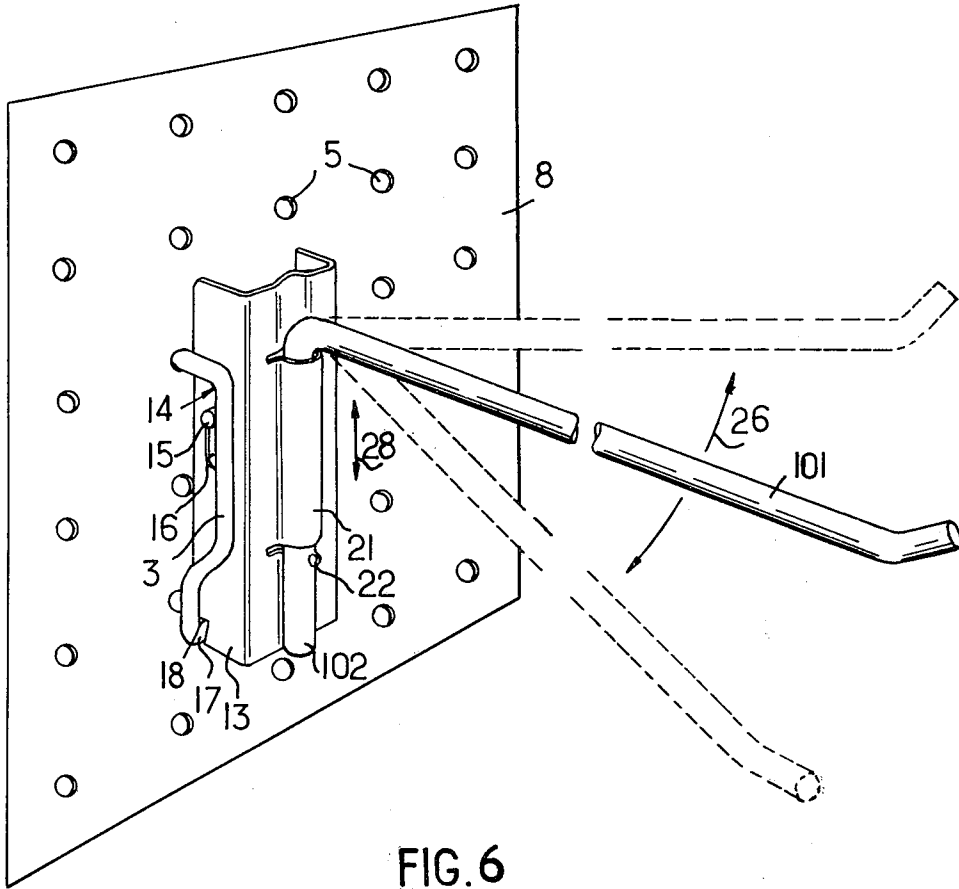


FIG. 6

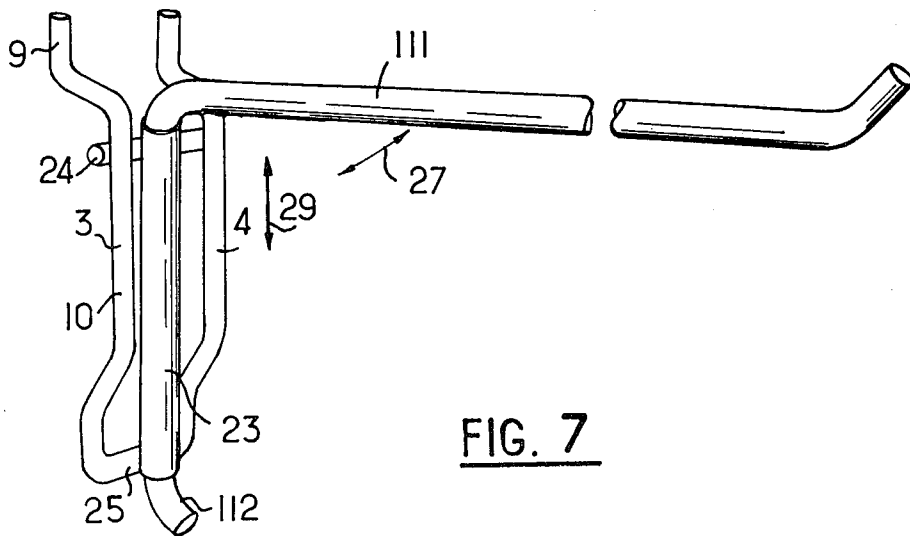


FIG. 7

BRACKETS

The present invention relates to improvements to the brackets of display units with vertical pins of bayonet shape penetrating holes in a vertical plate, the base of the pins bearing against the plate, the bayonet engaging in the hole.

Brackets of this type comprise a vertical part or support, at the top of which are located the bayonet shaped pins and one or more horizontal brackets serving for hanging products offered for sale. In order to engage said brackets on the vertical plates provided with holes whose spacing corresponds to the spacing of the bayonet pins, it is necessary to lift the brackets in order to introduce the point of the bayonet into the plate, then to fold back the bracket integral with the bayonet or bayonets in order that the curved part of the latter is appropriately located in the holes of the vertical plate. In this manner, the bracket is retained horizontally with the end of the bayonet pins wedged behind the vertical plate and the lower part of the pins or supports bearing against the vertical plate on the visible part of the latter. To detach the bracket it is necessary to lift it whilst acting in the reverse manner.

The two main drawbacks of this type of bracket are that it is easily disengaged when users lift it on picking up the objects displayed and that, in this movement, the brackets which are located above the raised bracket on the vertical perforated plate are raised, which means that there is a danger of disengaging several brackets. This same drawback exists when it is desired to remove a bracket. It is thus absolutely necessary to previously remove all the brackets located thereabove.

In general, all the brackets are fixed, that is to say that they are normally kept at right-angles to the vertical plate comprising holes which supports them. For the requirements of a display it may be found advantageous to be able to orientate the bracket laterally by pivoting it about a vertical pivot pin. This was virtually impossible and at the very least difficult with former brackets due to the fact that there was a danger of disengaging them.

The present invention is intended to remedy these drawbacks.

The bracket of the invention is characterized by the fact that the pin is divided into a vertical support part or base when the bracket is horizontal and into a part pivoted about a horizontal pivot pin in the manner of a lever of the first kind, with its horizontal pivot pin perpendicular to the bracket, its upper end in the form of a bayonet and its lower end being able to be locked on the support and by the fact that each of the horizontal parts of the bracket is pivoted about a vertical pivot pin on the base in order to be able to swing to the right and left so that it may possibly be folded back against the vertical plate comprising holes.

Preferably, the pin is locked by wedging its lower end between the support and the vertical plate. The pivot pin of the swinging part of the pin may move in slots allowing the lower portion of the swinging part to pass under the support, then to reascend into a locking notch between the support and the plate.

According to the invention, the pivoting of the bracket is produced by a vertical tubular housing integral with the vertical bayonet pins or the base, a housing in which a right-angled part of the bracket is engaged in order to be supported and retained therein by

appropriate means which may be a projection of the lower part of the bracket in the tubular housing.

For brackets simply fixed by bayonet pins in the vertical plate comprising holes, the tubular housing may be a section of tube welded to two cross-members connecting two vertical pins.

In brackets having a support or base, the tubular housing is formed by shaping the support having a U-shaped cross section in order to form a sleeve.

The following description gives two non-limiting examples of brackets of the invention which are illustrated by the accompanying drawings in which:

FIG. 1 is a perspective view of the bracket with the part pivoted about a horizontal pivot pin inclined with respect to the vertical part, base or support,

FIG. 2 is a perspective view of the bracket with the part pivoted about a horizontal pivot pin applied against the vertical part, base or support,

FIG. 3, 4 and 5 show various stages of fixing the bracket to a vertical plate.

FIG. 6 is a perspective view of a pivoted bracket of the invention designed for the bracket securing device described in the above patent application.

FIG. 7 is a perspective view of a pivoted bracket for an attachment device of customary type.

The bracket is constituted by a horizontal part 1 and a vertical part 2 and provided with bayonet shaped pins 3 and 4 which may penetrate holes 5, 6, 7 which have a corresponding spacing to that of a vertical plate 8. In existing customary brackets, there may be one or more horizontal parts 1, and, when a vertical force is applied to said parts 1, the bottom of the pins 3, 4 bears against the plate 8 when the bayonets engage the holes 5, 6, 7. The upper part of the pins 3, 4 comprises a vertical end 9, a vertical part 10, offset with respect to the end 9 and an oblique part 11 which connects the end 9 to the part 10. To place the bracket on the plate 8 it is necessary to orientate the pins 3, 4 perpendicularly to the plate 8 in order to introduce said pins 3, 4 into holes such as 5, 6, 7. Consequently, it is firstly necessary to introduce the end 9 horizontally, i.e. to place the part 1 almost vertically then, when the pin such as 3, 4 is introduced into holes such as 5, 6, 7 in the vicinity of the elbow 12, it is necessary to fold back the pin 3, 4 in order to place the part 11 horizontally like the part 1. Conversely, when it is desired to disengage the bracket from the holes of the vertical plate 8, it is necessary to lift the horizontal part in order to engage the elbow 12 in the hole and then to disengage the end 9 from said hole. It will be understood that these operations require a clear space above the horizontal part 1 both for the installation of the bracket and for the disengagement of the latter.

It will be understood that that which has been described corresponds to existing brackets and that the object of the invention will now be dealt with.

According to the invention, the pins such as 3, 4 are no longer rigidly fixed to the horizontal part 1. They are divided into a support 13, base or vertical part, when the bracket 1 is horizontal and into a part pivoted about a horizontal pivot pin 14. The part 14 is generally in the shape of a hairpin whose sides are connected by a pin 15 which is welded perpendicularly to said sides, which outwardly surround the support or base 13 at the point where the latter comprises vertical slots 16 in which the pin 15 passes. Thus the part 14 pivoted about a horizontal pivot pin is in the form of a lever of the first type, that is to say a lever whose fulcrum constituted by the

pin 15 is located between the two ends and the pin 15 is practically perpendicular to the horizontal part 1 of the bracket. The upper ends of the part 14 are in the form of a bayonet exactly as has been described for brackets existing before the invention.

One important feature of the present invention resides in the fact that the lower end of the part 14 is able to be locked at the lower part of the support or base 13. For this, the curved part 17 of the member 14 which connects the two pins 3 and 4 may pass below the support 13 when the pin 15 is located at the lower part of the slot 16 (FIGS. 3 and 4), on the other hand, when the pin 15 is located at the top of the slot 16, the part 17 abuts against the support or base 13 either in front of or at the rear of the latter. When it is desired to lock the pivoted part 14, the part 17 is passed under the support or base 13 in order to wedge said part 17 between the support 13 and the plate 8 (FIG. 5). To this end, a notch 18 is provided at the base of the support 13, said notch 18 having a slope ensuring the wedging of the part 17.

It will be understood that owing to the possibility of pivoting the part 14 with respect to the support 13, it is the part 14 which assumes all the inclinations required by the location of the pins 3 and 4 in the holes 5, 6, 7 without the horizontal part 1 ceasing to be horizontal. The various stages of tilting the part 14 for locating the bracket on the plate 8 are illustrated in FIGS. 3, 4, 5. FIG. 4 shows that at the time of folding the part 14 downwards, it is necessary to place the pin 15 in the lower part of the slot 16 in order to slide the part 17 under the support 13 and to engage said part 17 in the notch 18. The locking of the part 17 in the notch 18 between the support 13 and the plate 8 takes place by sliding the bracket arrangement (FIG. 5, arrow 19) vertically, with the exception of the part 14, this sliding movement being carried out until the moment when the pin 15 is located at the upper part of the slot 16. In this position, the end 9 of the part 14 bears against the reverse side of the plate 8 which is thus wedged between said end 9 and the support 13. This wedging thus has the effect that the bracket is undetachable with respect to the plate 8.

Conversely, when it is desired to disengage the bracket from the plate 8, it is necessary to exert a sliding movement on the bracket arrangement parallel to itself, vertically along the plate 8, the reverse movement to that indicated by arrow 19, in order to disengage the notch 18 from the part 17 and to allow said part 17 to pass under the support 13 by pivoting into the position shown in FIG. 4 but in the opposite direction to arrow 20. At this time, the bracket may be disengaged virtually horizontally without disturbing the brackets located thereabove.

Referring to FIG. 6, the bracket is constituted by a horizontal part 101 and a vertical part 102 with bayonet-shaped pins 3 and 4 which may penetrate holes 5 having a spacing corresponding to that of a vertical plate 8. As has been described in the above-mentioned U.S. Pat. application No. 72.24.185, the pins 3 and 4 are pivoted by a pin 15 on a support 13 having a U-shaped cross section, to which is fixed the vertical part 102 of the bracket 101. In this case, the invention consists of providing, at the time of shaping the support 13, a sleeve 21 of tubular section into which the part 102 may pass and rotate. The latter is retained in the sleeve 21 by a projection 22 provided at its lower part. The remainder of the bracket is similar to that which was de-

scribed in the above-mentioned patent application. In particular, the pin 15 may displace in a slot 16 in order that the lower part 17 may be located in the notch 18.

With reference to FIG. 7, the horizontal bracket 111 comprises a vertical part 112 which pivots in a section of tube 23 welded to a cross-member 24 and to the lower part 25 which connects the two pins 3 and 4. The latter comprise vertical parts 10 and ends 9 of bayonet-shape. The lower end of the vertical part 112 is bent in order to be retained in the section of tube 23.

It will be realised that all the drawbacks mentioned at the beginning of the present description have thus been completely eliminated.

An important advantage of the bracket of the invention is that the locking prevents its theft from the plates of the display unit.

In both cases illustrated in FIGS. 6 and 7, the horizontal part 101 or the horizontal part 111 may swing (arrows 26 and 27) to the right and left so that it may possibly be folded back against the vertical plate 8 comprising holes. The vertical displacement of the bracket (arrow 28 and arrow 29) in the sleeve 21 or in the section of tube 23 is prevented by the projection 22 or the lower curvature of the bracket. This advantage is particularly noticeable for the construction of FIG. 6 with the device which has already been described since the support or base 13 may thus be detached without separate operation and consequently it cannot allow any vertical movement of the bracket 101.

Thus, as shown in FIG. 6, it is seen how support arm 101 is pivotable about bracket body means 13, so that support arm 101 may be swung out of the way when not in immediate use. The dynamic stability of the improved article-surrounding bracket assembly for perforated panels of the present invention is shown in FIGS. 3, 4, and 5, which delineate the insertion of the bracket assembly of the present invention into a perforated board without the use of force which tends to knock articles off the support arm 101 during the insertion of the bracket assembly into the normally fragile, unstable perforated boards. As shown in FIGS. 3, 4, and 5, prong means 14 are partially inserted into the perforated panel perpendicular to the perforated panel while the bracket means 13 are in their final position flush against the perforated panel. Prong means 14 is then subsequently pivoted on pivot pin 15 which is securely attached and both pivotally and slidingly engaged in slot 16 of bracket means 13. The pivoting of prong means 14 brings ends 9 in position behind the perforated panel and end 17 parallel and flush with the perforated panel. Bracket means 13 is then slid down pin 15 in the direction of the arrow 19 such that notch of bracket means 13 slides over end 17 of prong means 14 so that prong means 14 is firmly secured against the perforated panel without the use of force. The absence of the use of force inserting the bracket assembly, or following the reverse procedure of removing the bracket assembly, from the perforated board makes the bracket assembly dynamically stable since previously known devices which required force to secure the bracket assembly to the perforated board tended to knock the articles off the article-receiving hook when the brackets were removed.

I claim:

1. A dynamically stable article-supporting bracket assembly for perforated panels, comprising:
 - a pivot pin;
 - prong means, fixedly attached to said pivot pin;

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bracket means, securely attached to said pivot pin and said prong means;

support arm means pivotally firmly attached to said bracket means;

said pivot pin rotoatably positioned within said bracket means such that said prong means may be partially inserted into a perforated panel perpendicular to the panel when said bracket means are in a final position of said bracket means, with subsequent pivoting of said prong means with said pivot pin while said bracket means remain unmoved, to a non-forced locking position of said prong means parallel to the panel; and

said pivot pin and said bracket means being mutually slidable with respect to each other, and said prong means and said bracket means being mutually relatively sized, such that after said prong means have been inserted in the panel and then pivoted to the non-forced locking position of said prong means, said bracket means may be slid over a portion of the prong means to firmly secure the prong means against the perforated panel.

2. An article-supporting bracket assembly for perforated panels, comprising:

- a pivot pin;
- prong means, fixedly attached to said pivot pin;
- bracket means, securely attached to said pivot pin and said prong means;
- support arm means pivotally firmly attached to said bracket means;

wherein a portion of said bracket means is adapted, after said prong means has been secured behind the

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perforated panel, to be slid over a portion of said prong means, thereby securing said prong means against the perforated panel behind said bracket means.

3. An article-supporting bracket assembly for perforated panels, comprising:

- a pivot pin;
- prong means, fixedly attached to said pivot pin;
- bracket means, securely attached to said pivot pin and said prong means;
- support arm means pivotally firmly attached to said bracket means;

wherein said pivot pin is rotatably positioned within said bracket means such that said prong means may be partially inserted into a perforated panel perpendicular to the panel when said bracket means are in a final position of said bracket means, with subsequent pivoting of said prong means with said pivot pins while said bracket means remain unmoved, to a non-forced locking position of said prong means parallel to the panel.

4. A bracket assembly according to claim 3, wherein said pivot pin and said bracket means are mutually slidable with respect to each other, and said prong means and said bracket means are mutually relative sized, such that after said prong means have been inserted in the panel and then pivoted to the non-forced locking position of said prong means, said bracket means may be slid over a portion of the prong means to firmly secure the prong means against the perforated panel.

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