

United States Patent

Loucks

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[54] SNAP-ON BRACKET

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[51] Int. Cl. F16m 13/02

[58] Field of Search 248/226 E, 246, 295, 296, 221

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901,926 10/1908 Watt 248/295

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[57]

ABSTRACT

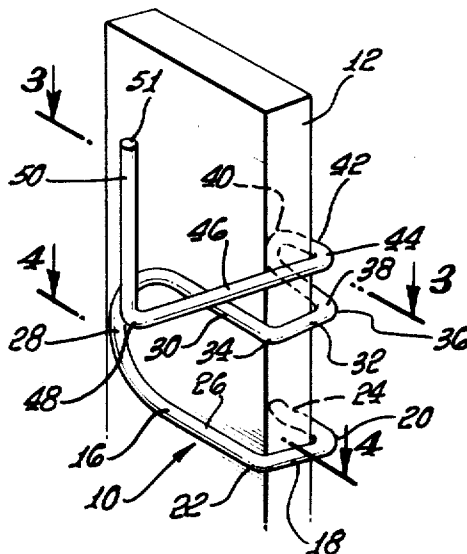
A snap-on bracket of unitary resilient construction adapted to be releasably positioned on a support structure. The bracket includes at least three spaced apart areas of gripping contact with said support structure wherein downward pressure on said snap-on bracket will enhance the binding relationship between said bracket and said support structure.

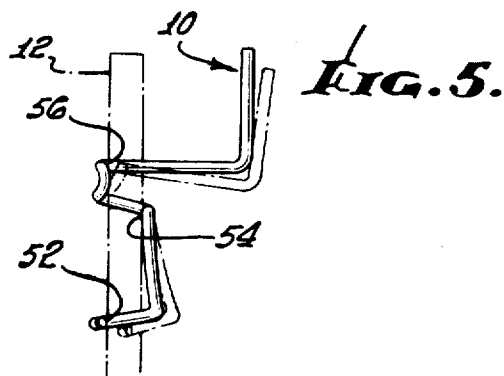
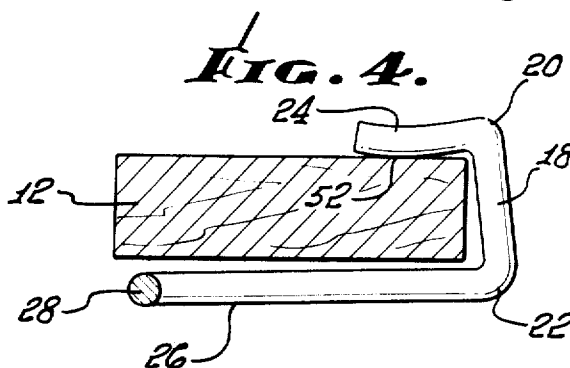
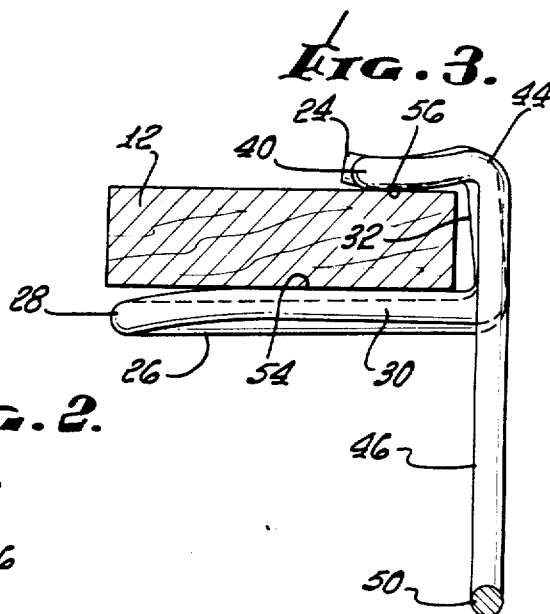
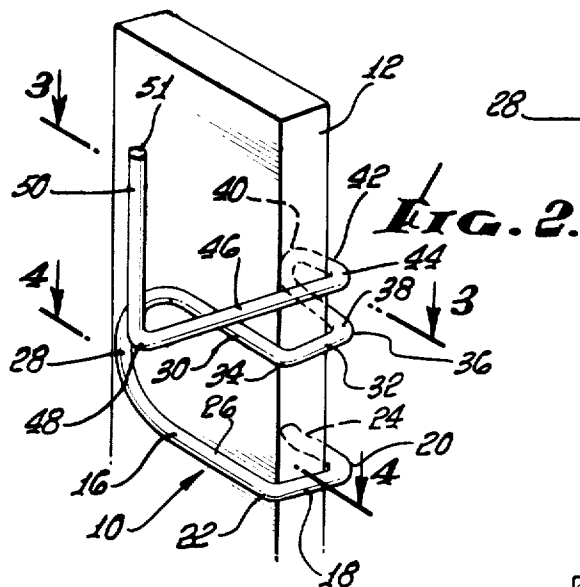
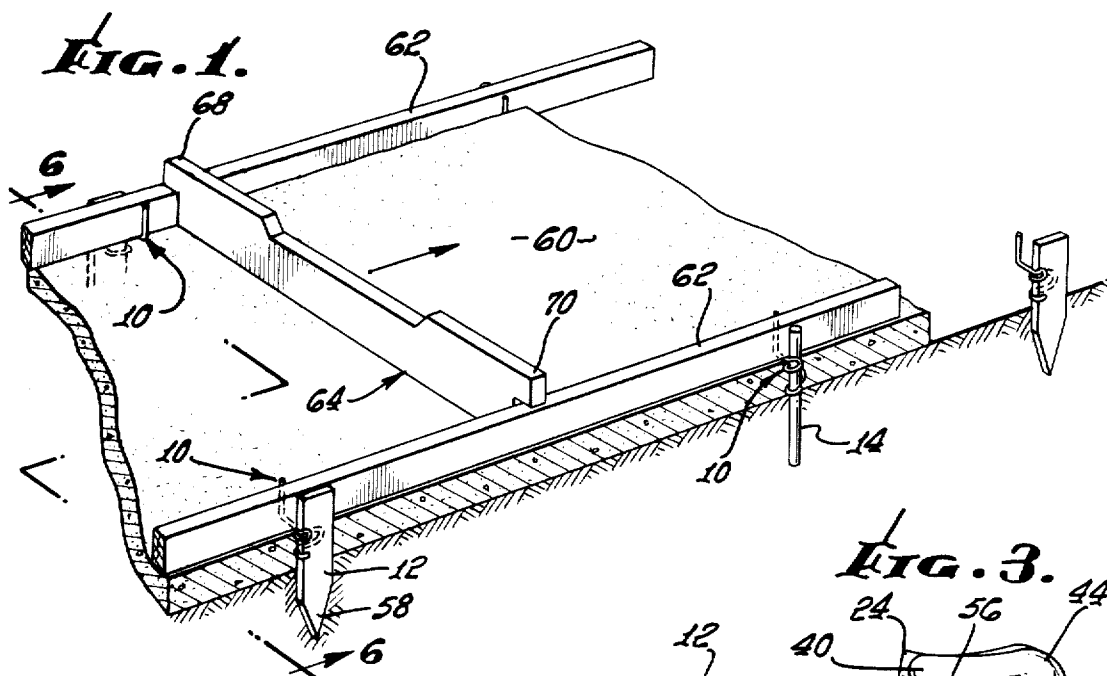
4 Claims, 9 Drawing Figures

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FIG. 6.

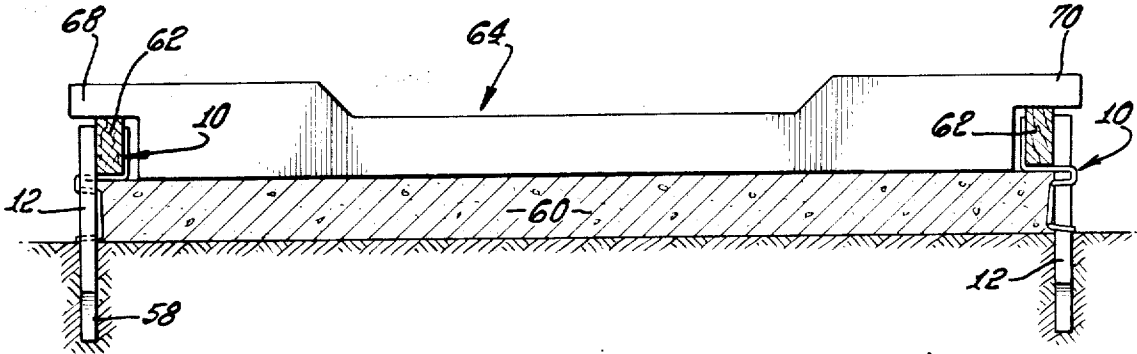


FIG. 7.

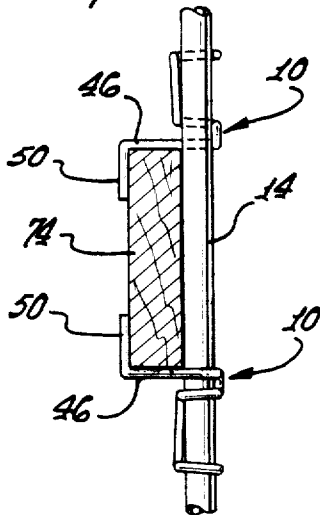


FIG. 8.

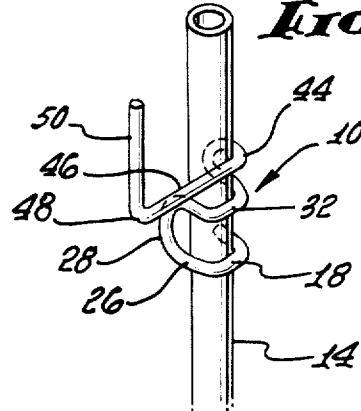
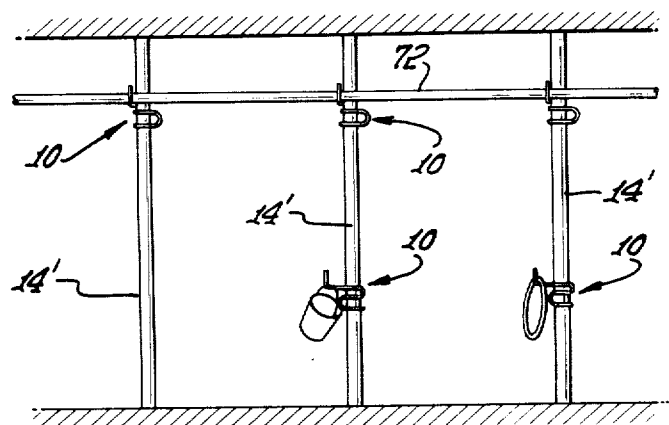


FIG. 9.



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SNAP-ON BRACKET

BACKGROUND OF THE INVENTION

The snap-on bracket of this invention is particularly adapted to be used as a screed hanger in the laying of concrete.

Heretofore, prior art screed hangers have usually required the use of a collar and adjustment screw whereby the hanger may be moved vertically and set at the desired position. Such structure has been costly to manufacture and when using such a structure around any wet concrete it has been found that the concrete can work itself into the collar and cause wear as well as in some cases, freezing the hanger at the last set position.

Other prior art screed hangers commonly used by concrete masons are of the fixed variety wherein a screed is nailed or screwed to pegs which are in turn set into the ground and once the screed has served its purpose, at that particular area, it is broken up and discarded. Such practices are costly because of the need for additional new wood to prepare the screeds for use in laying of larger expanses of concrete.

Additionally, previous brackets which can be used for hanging, shelving or other items have not been of the snap-on releasable feature and for the most part have required an element other than the bracket to maintain the bracket in position on a pole, post or other vertical support means.

SUMMARY OF THE INVENTION

The snap-on bracket which is the subject of this invention is a unitary resilient construction formed from wire or steel rod into various configurations and is adapted to be fitted to a piece of wood, metal, plastic or any other type of vertical support and may also be utilized with vertical supports of relatively different cross sections.

The snap-on bracket is relatively easy to install in what is termed as a "one-handed" operation and can be removed in the same manner.

Another object of this invention is to provide areas of contact with the vertical support structure wherein the gripping or binding power of the snap-on bracket will be enhanced as there is greater downward pressure placed on the bracket.

These and other objects and advantages will become apparent from the following description and drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective, environmental view of one of the uses of the snap-on bracket, the subject of this invention, where it acts as a screed hanger;

FIG. 2 is a perspective view of the snap-on bracket in position on a vertical support;

FIG. 3 is an enlarged cross sectional view of the bracket as mounted taken on line 3—3 of FIG. 2;

FIG. 4 is an enlarged cross sectional view of the bracket as mounted taken on line 4—4 of FIG. 2;

FIG. 5 is an end elevational view of the snap-on bracket as it is mounted on a vertical support member and there is included phantom lines representing the shape of the snap-on bracket prior to mounting on the vertical support;

FIG. 6 is a view partially in cross section taken on line 6—6 of FIG. 1;

FIG. 7 is a side elevational view of a pair of snap-on brackets mounted upon the same vertical support to maintain a board or frame therebetween;

FIG. 8 is a perspective view of the snap-on bracket as it is maintained on a circular vertical support; and

FIG. 9 is an elevational, environmental view of several other uses of the snap-on bracket.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. 2 and 8 are good illustrations of the subject matter of this invention, namely a snap-on bracket generally designated 10. As can be seen in the case of FIG. 2, bracket 10 is secured

to a generally rectangular, vertical support 12 such as wood, whereas in FIG. 8, the snap-on bracket is attached to a circular or tubular vertical support 14 such as a pipe or rod.

The snap-on bracket 10 is of a unitary multibend construction preferably formed from steel wire or rod 16 of a suitable diameter in cross section to provide the necessary rigidity as well as to allow resiliency. In the present disclosure, the diameter of the wire or rod 16 comprising the snap-on bracket 10 is illustrated as being approximately one-fourth inch.

The bracket 10 as can be seen is bent to form the necessary gripping areas with the vertical supports 12 and 14.

The wire or rod 16 used to form the bracket 10 includes a lower medial portion 18, of a length corresponding to the thickness of the support 12 or diameter of the support 14. Each end of said medial portion 18 terminates in right angle bends 20 and 22 providing beyond the right angle bend 20, a relatively short arcuate gripping lug or leg 24 all forming a first reverse bend. Extending from the right angle bend 22 generally parallel with the short arcuate leg 24 is a relatively long lower leg 26, which terminates in a curved loop 28 extending in a generally vertical plane upward from the leg 26. Extending from the curved loop 28, above the lower leg 26 is an upper leg 30 of a length comparable with that of the lower leg 26. Joined to the upper leg 30 is an upper medial portion 32 terminating in right angle bends 34 and 36. At the right angle bend 34 the upper leg 30 is joined with the upper medial portion 32.

Extending from the right angle bend 36 and in a vertical plane, is a relatively short upwardly inclined lug or leg 38 which terminates in a relatively short curved loop 40. Extending from the curved loop 40 forward is an upper biasing leg 42 wherein the leg 38, loop 40 and leg 42 form a second reverse bend. Leg 42 is bent at a right angle 44 forming a load receiving portion or support leg 46 which is generally horizontal. Opposite the right angle bend 44 the support leg 46 terminates in a right angle bend 48 providing beyond the right angle bend 48 a generally vertical riser 50 terminating in end 51.

With the bending of the wire or rod 16 the bracket 10, when in an at rest position, that is, not affixed to a support, will assume a bent position such as shown in the phantom lines of FIG. 5. In order to attach the snap-on bracket 10 to a support such as 12 or 14, it is necessary to mount that portion of the bracket which includes the support leg 46 and upper medial portion 32 adjacent the front edge of the support 12 or against the rod support 14 and press the lower leg 26 inwardly whereby the arcuate leg 24 may be hooked around the support and will engage the opposite side of the support from that engaged by the upper leg 30.

As can be seen from FIGS. 3 and 4, when the snap-on bracket 10 is appropriately positioned on a support, there will be in general, three areas of direct contact with the support. The first or lower area designated 52 is the innersurface of the arcuate leg 24. The second or intermediate area of contact 54 is the innersurface along the upper leg 30 as best seen in FIG. 3. Also, as best seen in FIG. 3, the third or upper area of contact 56 is the inner surface of the curved loop 40 and upper biasing leg 42 as again best seen in FIG. 3.

Therefore, when the bracket is in position, the areas of contact, as best seen in FIG. 5, are 52, 54 and 56. Because the material utilized in the snap-on bracket 10 is resilient, the biasing of the bracket in the three areas just referred to will assure a tight fit on a support when affixed thereto. In order to release the bracket from the support, it is merely necessary to flex the lower medial portion 18 toward the support 12 or 14 so that the arcuate leg 24 may be disengaged from the side of the support and then the bracket 10 may be pivoted so that there is complete disengagement of the arcuate leg 24 and first and lower area 52 of the leg from the support. Once this is accomplished, the entire bracket 10 may be pulled away and removed from the support.

One practical application for the snap-on bracket 10, is illustrated in FIG. 1 where it is used as a screed hanger. It should be noted that the support 12 is in this case of wood,

having a pointed end 58 which is driven into the ground and the bracket may be positioned on the support 12 so that the support leg 46 of the bracket is the desired height above the ground depending on the thickness of concrete 60 which is to be laid thereon. When the desired height of the support leg 46 is determined, a plurality of supports 12 or 14 utilizing the snap-on bracket 10 are aligned and resting on the support legs 46 of each of the brackets 10, as can also be seen in FIG. 1, are a series of guide screeds 62.

With concrete 60 poured between the respective screeds 62, a leveling bar generally designated 64 which is preferably formed of a two-by-four 66 having a length corresponding to the space between the respective screeds 62 and there is included handle elements 68 and 70 affixed thereto and extending or overlapping the top of the guide screeds 62.

As the concrete is poured the leveling bar 64 is pulled forward in the direction of the arrow (FIG. 1) which levels the concrete to the height of the undersurface of the guide screeds 62.

When utilizing a snap-on bracket 10 such as shown in the drawings, the bracket may be adjusted vertically on the support post 12 whereby the end 51 of the riser 50 is flush with or lower than the top of the support 12 so that the leveling bar 64 may be directed thereover without interference or any need for lifting it over any obstruction.

Preferably, the length of the support leg 46 of the bracket 10 will be such that the guide screeds 62 will be relatively tightly interfitted between the vertical side of the support 12 and the riser 50. This will assure stability of the guide screed 62.

In operation, once an area such as shown in FIG. 1 has been laid with concrete, a plurality of the supports 12 or 14 having been spaced in line, the screed guide 62 is moved horizontally to a next series of supports and brackets so that there may be a continuous flow of concrete and leveling in the designated area.

Another use for this type of snap-on bracket is illustrated in FIG. 9 where for purposes of illustration there are illustrated a plurality of tubular vertical supports 14' and affixed to the supports 14' are individual snap-on brackets 10. In the case of the lower brackets they can be utilized individually to hang buckets or any other type of item. When a series of brackets 10 are utilized in horizontal alignment such as seen in the upper portion of FIG. 9, they will act a horizontal support for tubing 72 or the like.

In certain cases where it is desired to assure complete rigidity of a guide or frame on a vertical supporting rod 14, two snap-on brackets 10 may be utilized such as viewed in FIG. 7. There it can be seen that there is a lower snap-on bracket 10 which receives a board 74 and an upper bracket 10 which is reversed so that the leg 46 may be forced down on top of the board 74 against the lower leg of the lower bracket 10 and each of the risers 50 will grip the board 74 thus locking it in the position desired.

While the snap-on bracket 10 has been illustrated and described in several uses, it is to be recognized that it has many uses for receiving articles of various types or items which are to be positioned horizontally such as shelving all of which may be accomplished by varying the length of the support leg 46.

Further, as can be seen by the drawings and as is evidenced from the specification, downward pressure on the support leg

46 of the snap-on bracket 10 will increase the areas of contact against a vertical support and will assure a tighter bite whereby the bracket will not move vertically until fully released from the vertical support.

Although I have herein shown and described my invention in what I conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention.

What is claimed is:

1. A unitary spring wire clamp and bracket for supporting a screed on a vertical post and comprising: a loop having spatially separated legs, one leg terminating in a generally U-shaped first reverse bend, the other leg terminating in a generally U-shaped second reverse bend lying generally in vertical alignment with the first bend, a return section continuing vertically from the second bend, and a horizontal support section normal to the return section and in general vertical spaced alignment with a portion of the second return bend and extending across and beyond the vertical plane of the loop, the clamp and bracket being a continuous piece of spring wire formed in the structure defined, a leg of the loop being adapted to abut against one side of the post with which it is to be associated, the reverse bends being adapted to abut against the opposite side of such a post for clamping the post between the leg and the reverse bends, and the horizontal support section being adapted to receive thereon a screed and adapted under the influence of weight which may be imposed by said screed tending to twist at least one of the reverse bends and a portion of the loop into tighter clamping relationship with the post.

2. In combination: a substantially rigid elongated vertical member adapted to sustain a horizontal beam, a unitary spring wire clamp and bracket removably mounted on the vertical member adapted to support the beam on the member, the clamp and bracket comprising a pair of vertically spaced apart lugs disposed in the same general vertical plane and bearing against one side of the member, a loop bearing against the opposite side of the member, the lugs being joined respectively to opposite ends of the loop, and a horizontal section extending from the upper lug normal thereto above and past the loop adapted to receive said beam, the lugs, the loop and the horizontal section being a continuous piece of spring wire formed in the structure defined, and the horizontal section being responsive to weight imposed thereon by a beam to bias at least the upper lug into added force against the vertical member to bind the clamp and bracket thereto.

3. The combination defined in claim 2 in which the loop comprises upper and lower legs joined by a bridging section, the upper leg disposed in contact with the vertical member, a portion of the bridging section and the lower leg being out of contact with the vertical member in the absence of weight on the horizontal section so that when weight such as a beam is imposed on the horizontal section there is clearance for the lower leg to shift toward the vertical member as torque initiated by the weight is transmitted through the upper lug bearing on the vertical member to the loop.

4. The combination defined in claim 2 wherein the horizontal section terminates past the loop in a vertical riser whereby said beam may be maintained between said riser and said substantially rigid elongated vertical member to prevent lateral displacement of said beam.

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