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(54) **Hanger assembly**

(57) A hanger assembly (34) for engagement with a wall (32). The hanger assembly (34) comprises a wall mount (36) for engagement with the wall and a hanger arm (38). The hanger arm (38) and wall mount (36) are configured to co-operate to provide a releasable locking

arrangement. In a first configuration the hanger arm (38) and wall mount (36) are substantially locked in position relative to one another. In a second configuration, the hanger arm (38) and wall mount (36) are pivotable relative to one another.

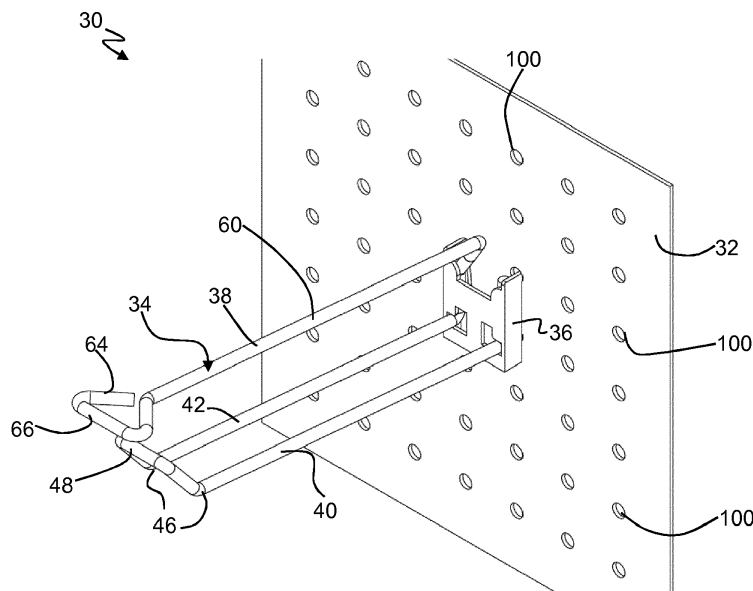


Figure 3

Description

[0001] The present disclosure relates to a hanger assembly.

[0002] In particular the disclosure is concerned with a hanger assembly for engagement with a wall.

[0003] Retail outlets commonly employ hanging systems for displaying products. An example hanging system is shown in Figure 1 and Figure 2. Figure 1 shows hanger assemblies 8 in adjacent rows, one above the other, in mounted positions on a wall plate 20. Figure 2 shows the lower of the hanger assemblies in the process of being inserted or removed from the wall plate 20.

[0004] The hanger assembly 8 comprises support members 10, 12 which extend from a mount 14. The mount 14 is provided with a hook 16 that extends through an aperture 18 in the wall plate 20. The wall plate 20 is commonly provided in the form of a metal sheet, with the apertures 18 being equally spaced and aligned with one another. The support members 10, 12 are rigidly fixed to the mount 14, and typically the support members 10, 12 are welded to the mount 14.

[0005] Products are suspended from support members 10, 12, although one or another of the support members 10, 12 may be used. The higher support member 12 may be used for suspending information relevant to the product suspended from support member 10.

[0006] In use the hanger assembly 8 is engaged with the wall plate 20 by angling the whole hanger assembly 8 at such an angle so that the hooks 16 can pass through the apertures 18 and then the whole assembly is rotated so that the mount 14 is brought into contact with the wall plate 20. The hanger assembly 8 is disengaged from the wall plate by the reverse process, namely the hanger assembly as a whole must be pivoted relative to the wall plate 20 such that the hooks can be removed from the apertures 18, allowing the hanger assembly to be detached from the wall plate 20.

[0007] The problem with this arrangement, as demonstrated in Figure 2, is that while it is robust and simple to operate, the angle through which the hanger assembly 8 must be rotated in order to engage and disengage it from the wall plate 20 is quite large, and depending on the spacing of the hanger assemblies, will be so large that a lower assembly 8 will collide with a higher hanger assembly 8 during the removal process. This is annoying and fiddly for the user. In some situations, because of this problem, a user arranging hangers 8 on a lower row must first remove the hangers of a higher row. If the display comprises five rows of hanger assemblies, and the user wishes to adjust the lowest of the hanger assemblies, perhaps to arrange the hangers appropriately for a new product to be suspended from it, the user must first remove all of the above four rows before the lowest row can be adjusted. Clearly this is time consuming and inconvenient, and adds to the cost and time associated with creating a display.

[0008] Hence a hanger assembly which is easy to de-

ploy without having to adjust or move hanger assemblies in adjacent rows is highly desirable.

Summary

[0009] According to the present invention there is provided a hanger assembly and hanger system as set forth in the appended claims. Other features of the invention will be apparent from the dependent claims, and the description which follows.

[0010] Accordingly there may be provided a hanger assembly for engagement with a wall; the hanger assembly comprising: a wall mount for engagement with the wall; and a hanger arm; whereby the hanger arm and wall mount are configured to co-operate to provide a releasable locking arrangement such that: in a first configuration the hanger arm and wall mount are substantially locked in position relative to one another; and in a second configuration, the hanger arm and wall mount are pivotable relative to one another.

[0011] The hanger arm may comprise a first support member and a second support member, each of the support members having a wall end, which in use is proximate the wall; and a distal end furthest from the wall; the first support member being joined to, and spaced apart from, the second support member by a span member such that the first support member and second support member are moveable between a first relative position and a second relative position, wherein the distance between the support members, at the wall end, in the first relative position is greater than the distance between the support members in the second relative position.

[0012] The hanger arm and wall mount may be configured such that in the second configuration the hanger arm and wall mount are slideable relative to one another.

[0013] The span member may define the first relative position of the first and second support members. The span member may be located away from the wall end, and towards the distal end, of the support members. The span member may be provided at the distal end of the first and second support members.

[0014] The first support member and second support member may be resiliently biased away from one another by a resilient member to thereby urge the support members from the second relative position to the first relative position.

[0015] The span member may be resilient and bias the first support member and second support member away from one another to thereby urge the support members from the second relative position to the first relative position.

[0016] In the first relative position, the support members may be substantially parallel.

[0017] Engagement features may be provided on the support members for engagement with engagement features provided on the wall mount to provide the releasable locking arrangement.

[0018] The engagement features may be configured

to be selectively engaged with one another in the first configuration; and configured to be selectively disengaged with one another in the second configuration to allow the hanger arm and wall mount to be moveable relative to one another.

[0019] The hanger arm further may further comprise a third support member which extends from one of the support member engagement features and has a corner such that at least part of the third support member is angled towards alignment with the first and second support members.

[0020] The support member engagement features may be provided at the wall end of the support members. The support member engagement features may extend at an angle away from the support member.

[0021] The hanger arm may be provided as one continuous element.

[0022] The wall mount engagement features may be provided as channels configured to :

capture and hold the support member engagement features in the first configuration when the support members are in the first relative position; and release the support member engagement features when the support members are in the second relative position.

[0023] The wall mount may comprise a first and second aperture through which the support member engagement features extend through such that the support member engagement features are located one side of the wall mount; and the remainder of the support members extend away from the other side of the wall mount.

[0024] The apertures may be "L" shaped such that support members may move from the first relative position to the second relative position, and be held in the second relative position by a translation and/or pivot of the wall mount relative to the support members.

[0025] The wall mount may further comprise : a wall abutment surface, for resting against the wall; a hook having a shoulder which extends at an angle to the wall abutment surface; and foot which extend from the shoulder in a direction substantially parallel to the wall abutment surface.

[0026] Each hook foot may be of a predetermined length, and the corner of the third support member may be spaced apart from the hook shoulder pivot point such that, in use, the hanger assembly is prevented from becoming disengaged from the wall while the hanger arm and wall mount are in the first configuration.

[0027] Each hook foot may be of a predetermined length, and the corner of the third support member may be spaced apart from, and in a predetermined position relative to, a hook shoulder pivot point around which the wall mount is pivotable relative to the wall, such that, in use, the hanger assembly is prevented from becoming disengaged from the wall while the hanger arm and wall mount are in the first configuration.

[0028] The wall mount may comprise at least two wall

abutment surfaces. The wall mount may comprise at least two hooks.

[0029] There may also be provided a hanger system comprising : a hanger assembly according to the present disclosure; and a wall provided with at least one aperture, the aperture being configured such that the hook(s) of the wall mount may extend through the at least one aperture when the wall mount is at a first angle to the wall; and such that the hook is free to pivot relative to the wall to thereby allow the wall mount to rotate to bring the wall abutment surfaces of the wall mount into abutment with one surface of the wall and bring the hook foot into abutment with another surface of the wall such that the wall mount may engage with, and hang from, the wall.

[0030] A plurality of apertures may be provided in the wall, and the apertures may be aligned and spaced to accommodate the hook(s) of the wall mount.

[0031] The at least one aperture may be provided as a slot for accommodating one or more hooks. The at least one aperture may extend from one side of the wall through to the other side of the wall.

[0032] There may be provided a cavity between one side of the wall and the other side of the wall; and the aperture extends from one side of the wall into the cavity. The cavity may extend at least part of the way from one edge of the wall to another edge of the wall.

[0033] At least one aperture may be provided along the length of the cavity.

[0034] The wall mount may be advantageously deployed by sliding the wall mount along the hanger arm to engage wall mount hooks with an aperture in the wall, and pushing the wall mount into place until it is in a locked configuration. The wall mount may be advantageously disengaged by squeezing together the support arms and pivoting and sliding the wall mount away from the wall such that the hook is disengaged from the aperture in the wall.

[0035] Hence there is provided a hanger assembly for use in a hanger system wherein support members can be attached to, and extracted from, the wall plate to which they are attached without having to angle the support members, as the wall mount provided as part of the hanger assembly is pivotable relative to its respective support member.

Brief Description of the Drawings

[0036] Examples of the present disclosure will now be described with reference to the accompanying drawings, in which:

Figures 1 and 2 show an example of the related art;

Figure 3 shows a view of a hanger system, including a hanger assembly, of the present disclosure;

Figures 4 to 7 show different views of the hanger arm of the hanger assembly of the present disclosure.

sure;

Figures 8 to 11 show examples of a wall mount of the hanger assembly of the present disclosure;

Figures 12 to 16 show different views of the hanger assembly of the present disclosure;

Figures 17 and 18 show an end view of the hanger assembly of the present disclosure in different configurations;

Figures 19 to 21 show a process of engagement of the hanger assembly as part of a hanger system according to the present disclosure;

Figures 22 to 24 show a release process of the hanger assembly as part of a hanger system according to the present disclosure;

Figure 25 shows a view of an alternative hanger system to that shown in Figure 3;

Figures 26 to 28 show a process of engagement of the hanger assembly as part of the hanger system as shown in Figure 25; and

Figures 29 to 31 show a release process of the hanger assembly as part of the hanger system as shown in Figure 25.

Detailed Description

[0037] Figure 3 shows a hanger system 30 including a wall 32 and a hanger assembly 34 of the present disclosure. The wall 32 may be provided as a sheet of material, and form a section of a larger support structure, which may be attached to a wall of a building, or may be free standing. The wall 32 is perforated with apertures 100. The hanger assembly 34 is shown mounted to the perforated wall 32. The hanger assembly 34 comprises a wall mount 36 for engagement with the wall 32, and also comprises a hanger arm 38. The hanger assembly 34 is configured for engagement with, and to be supported by a wall such as the perforated wall 32. However, it may also be mounted to walls having a different pattern of apertures to that shown, for example as described with reference to Figures 25 to 31.

[0038] The hanger arm 38 comprises a first support member 40 and a second support member 42. Each of the support members 40, 42 have a wall end 44, shown most clearly in figures 4 to 7. In use, when the hanger assembly 34 is mounted from the wall 32, the wall end 44 of the support members 40, 42 are proximate to the wall 32. Each of the support members 40, 42 also have a distal end 46 furthest from the wall 32. The first support member 40 is joined to, and spaced apart from the second support member 42 by a span member 48. As shown

in the figures, the support members 40, 42 are substantially parallel with each other.

[0039] The support members 40, 42 are provided with engagement features 50, 52 respectively for engagement with engagement features 54, 56 provided on the wall mount 36, described below.

[0040] The hanger arm 38 further comprises a third support member 60 which extends from one of the support member engagement features 50, 52. In the examples shown, the third support member 60 extends from engagement feature 52, which corresponds to the second support member 42. The third support member 60 has a corner (or "bend") 62 such that at least part of the third support member 60 is towards, that is to say approaches substantially being in alignment with, the first and second support members 40, 42. The third support member 60 may be provided at an angle to the first and second support members 40, 42.

[0041] The third support member 60 likewise has a wall end, which is defined in part by the corner 62. The third support member 60 also has a free end 64 which may, as shown in the figures, terminate in an enlarged region 66.

[0042] The first support member 40 and second support member 42 are moveable between a first relative position and a second relative position, wherein the distance between the support members 40, 42 in the first relative position is greater than the distance between the support members at the wall end 44 in the second relative position.

[0043] The device of the present disclosure is configured such that a user may squeeze the support members 40, 42 together at or towards their wall end 44 to move the support members from the first relative position to the second relative position. That is to say, when a user squeezes the support members 40, 42 together at or towards their wall end 44 to move the support members from the first relative position to the second relative position, the wall ends 44 of the support members 40, 42 will be closer together in the second relative position than in the first relative position.

[0044] Note that the first relative position is that shown in the figures, namely with the support members 40, 42 substantially parallel. Since the span member 48 spaces the free end 46 of the support members 40, 42 apart by a first distance, the second relative position results in the first and second support members 40, 42 being at an angle to one another, converging towards the wall end 44.

[0045] Alternatively, the support members 40, 42 may be at an angle to one another in the first relative position. For example, they may converge or diverge towards their free end 46, as desired and required by their application or desired aesthetics.

[0046] The span member 48 defines the first relative position of the first and second support members 40, 42. That is to say the span member 48 provides a spacer between the first support member 40 and the second support member 42 such that they are spaced apart. The

span member 48 is located away from the wall end 44, and towards the distal end 46 of the support members 40, 42. In the examples shown, the span member 48 is provided at the distal end 46 of the first and second support members 40, 42.

[0047] The first support member 40 and second support member 42 are resiliently biased away from one another by a resilient member to thereby urge the support members 40, 42 from the second relative position to the first relative position. That is to say, there is provided a means to bias the support members 40,42 towards the first relative position which defines a predetermined and desirable distance between the support members. The resilient member may be provided as a spring member, or other some appropriate alternative. The resilient member may be provided in addition to the span member 48.

[0048] However, in the examples shown in the figures, the span member 48 is at least in part resilient and biases the first support member 40 and second support member 42 away from one another to thereby urge the support members 40, 42 from the second relative position ("unlocked") to the first relative position ("locked").

[0049] The support member engagement features 50, 52 are provided at the wall end 44 of the support members 40, 42 respectively, and extend at an angle away from their respective support members 40, 42. In the example shown, the support member engagement features 50, 52 extend at right angles away from, and are a continuation of, their respective support members, 40, 42.

[0050] The hanger arm 38 may be provided as one continuous element as shown in the figures. This may either be provided as moulded product, for example made out of plastic, or may be manufactured from a length of wire or metal rod bent to shape.

[0051] The wall mount 36 is shown in detail in Figures 8 to 11. The wall mount engagement features 54, 56 are provided as channels 70,72. That is to say the wall mount engagement features 54,56 are channels 70, 72 defined by walls of the wall mount 36. The channels 70, 72 are sized and configured to be complementary in shape to the engagement features 50, 52 of the support members 40, 42. The channels 70, 72 are configured to capture and hold the support member engagement features 50, 52. The channels 70, 72 are also configured to release the support member engagement features 50, 52.

[0052] As best shown in Figure 8, the wall mount 36 further comprises a first aperture 80 and a second aperture 82 through which the support member engagement features 50, 52 of the first support member 40 and second support member 42 respectively extend. Thus, when assembled, the support member engagement features 50, 52 are located on one side of the wall mount 36, and the remainder of the support members 40, 42 extend away from the other side of the wall mount 36, as shown in Figure 1 and figures 12 to 16. The apertures 80, 82 are "L" shaped, the horizontal base of the "L" of each extending in opposite directions. That is to say the "L" shaped apertures are orientated differently to one another, ar-

ranged such as one is a reflection of the other. With this arrangement, the support members 40, 42 may move left to right and right to left in the horizontal channel of the "L". This arrangement also provides that the wall mount 36 may pivot and/or translate in a vertical direction relative to the support members 40, 42, along the vertical channel of the "L" shape.

[0053] Thus when the support members 40,42 are squeezed together from the first relative position shown in Figure 17 to adopt the second relative position shown in Figure 18, the support members 40,42 move horizontally in the horizontal channel of the "L" shapes apertures 80,82 such that the wall ends 44 are closer together. Having reached the vertical channel of the "L" shaped apertures 80,82, the support members 40,42 are then free to pivot (ie rotate) and slide relative to the wall mount 36.

[0054] As shown in figures 9 to 11, the wall mount 36 comprises a wall abutment surface 90 for resting against the wall 32. In some examples there may be provided only one wall abutment surface 90. In the examples shown, there are provided two wall abutment surfaces 90. In further examples there may be provided more than two wall abutment surfaces 90. Each wall abutment surface 90 may be continuous, or discontinuous. The wall abutment surface may have a coating or resilient material applied to act as a vibration and impact damper between the wall mount 36 and the wall 32.

[0055] The wall mount 36 further comprises a hook 92 having a shoulder 94 which extends at an angle away from the wall abutment surface 90. The hook 92 also has a foot 96 which extends from the shoulder of 94 in a direction substantially parallel to, but away from, the wall abutment surface 90. In alternative examples, the foot may extend from the shoulder 94 in a direction at an angle to the wall abutment surface 90.

[0056] There may be provided only one hook 92. In the examples shown there are provided two hooks 92. In further examples there may be provided more than two hooks 92.

[0057] The hanger arm 38 and wall mount 36 are configured to cooperate to provide a releasable locking arrangement such that in a first configuration the hanger arm 38 and the wall mount 36 are substantially locked in position relative to one another, and in a second configuration, the hanger arm and wall mount are pivotable relative to one another. That is to say, in the first configuration, the hanger arm 38 and wall mount 36 are in a fixed locked relationship relative to one another, and the hanger arm 38 and wall mount 36 are configured such that in the second configuration, the hanger arm and wall mount are moveable relative to one another. That is to say in the second configuration, the wall mount 36 may pivot relative to the hanger arm 38, and vice versa. At the same time the wall mount 36 and hanger arm 38 may be slideable relative to one another.

[0058] When the hanger arm 38 and wall mount 36 are in the first configuration, the support members 40,42 are

in the first relative position. The support members 40, 42 must be moved to their second relative position in order for the hanger arm 38 and wall mount 36 to achieve the second configuration.

[0059] The releasable locking arrangement is provided by the support member engagement feature 50, 52 in cooperation with the engagement features 54, 56 on the wall mount 36. As shown in Figure 17, the engagement features 50, 52; 54, 56 are configured to be selectively engaged with one another in the first configuration, such that the support member engagement features 50, 52 are held within the grooves 70, 72 of the wall mount 36, thereby locking the hanger arm 38 and wall mount 36 into engagement. The engagement features 50, 52; 54, 56 must be selectively disengaged from one in order for the hanger arm 38 and wall mount 36 to achieve the second configuration, as shown in Figure 18. When the engagement features 50, 52 of the hanger arm 38 are disengaged with the engagement features 54, 56 of the wall mount 36, they are removed from the grooves 70, 72 to allow the hanger arm 38 and wall mount 36 to achieve the second configuration in which the hanger arm 38 and wall mount 36 become pivotable, and slide-able relative to one another.

[0060] That is to say, the channels 70, 72 of the wall mount 36 are configured to capture and hold the support member features 50, 52 in the first configuration when the support members are in the first relative position, and the channels 70, 72 are configured to release the support member engagement features 50, 52 to allow the support members 40, 42 to reach their second relative position. The "L" shaped apertures 80, 82 allow the support members 40, 42 to move from the first relative position, where they are spaced apart by a distance defined by the span member 48, to the second relative position where the first and second support members 40, 42 are closer to each other at least at the wall end 44 of the support members, 40, 42. When the support members 40, 42 are engaged in the vertical part of the "L" shaped apertures 80, 82, they are held in the second relative position. That is to say after the wall end 44 of the support members 40, 42 have been brought together such that the engagement features 50, 52 disengage from the channels 70, 72 the wall mount 36 may pivot and slide relative to the support members 40, 42 such that the support members 40, 42 are held in the upper portion of the "L" shaped apertures, and hence held in the first relative position.

[0061] In the present example, the hanger system of the present disclosure comprises the hanger assembly 30 and the perforated wall 32, as shown in Figures 19 to 24. The perforations may be provided as apertures 100, and the apertures 100 may be aligned and spaced to accommodate the hooks 92 of the wall mount 36. The apertures 100 extend from one side of the wall 32 through to the other side of the wall 32.

[0062] Figure 19 shows the approach of the wall mount 36 to the wall 32. As can be seen, the wall mount 36 is at an angle to the support members 40, 42, and is slide-

able relative along the support members 40, 42 to arrive at a position at the wall end 44 of the support members 40, 42 to extend through the apertures 100 in the wall 32, as shown in figure 20. The wall mount 36 is then pivoted relative to the hanger arm 38 to bring it into a vertical orientation, as shown in Figure 21. When engaged (ie in contact with) the edge of the aperture 100, the hook shoulder 94 provides a pivot point around which the wall mount 36 rotates to bring the wall abutment surfaces 90 into abutment with one side (i.e. the user side) of the wall 32. As the wall mount 36 is rotated to a vertical position as shown in Figure 21, the hook foot 96 is brought into abutment with the other side of the wall 32, such that the wall mount 36 is engaged with, and hangs from, the wall 32. The surfaces of the wall 32 in contact with the abutment surfaces 90 and hook foot 96 respectively are opposite one another. Note that during this process, the hanger arm 38 remains at a constant angle relative to the wall 32.

[0063] Each hook foot 96 is of a predetermined length chosen in conjunction with the distance of the corner 62 of the third support member 60 such that the corner 62 of the third support member 60 is spaced apart from the hook shoulder 94 pivot point such that the hanger assembly 34 is prevented from becoming disengaged with the wall 32 when the hanger arm 38 and the wall mount are in the first configuration. That is to say, the hanger arm is locked in position on the wall 32 by virtue of the relative spacing of location of the corner 62 and hook foot 96. Hence should the hanger arm 38 be knocked by a customer or user, then the hanger assembly 34 cannot become disengaged from the wall 32 because the predetermined relative position of the corner 62 and the shoulder 94 prevents the hanger assembly 34 pivoting relative to the wall 32.

[0064] The removal process is shown in Figures 22 to 24. Since the support members 40, 42 are biased away from one another such that they, at rest, are urged into the grooves 70, 72 of the wall mount 36, it takes a positive action by a user to squeeze the support members 40, 42 together before the wall mount 36 can be pivoted and slid away from the wall 32. This action extracts hook 92 from apertures 100. Note also that because the wall mount 36 can pivot and slide relative to the hanger arm 38, the hook 92 of the wall mount 36 can be removed from the apertures 100 of the wall 32 while the hanger arm 38 is maintained at a constant angle relative to the wall 32 while the wall mount 36 is removed from the wall 32. Hence the hanger assembly 34 can be disengaged from the wall 32 without having to angle the support arm 30 relative to the wall 32.

[0065] An alternative hanger system 108 is shown in Figures 25 to 31.

[0066] As shown in Figure 25, the hanger assembly 34 as previously described may also be used in conjunction with a channelled wall 110 instead of the wall 32 of the previous example, where the wall 32 is perforated with apertures 100.

[0067] In the example of figures 25 to 31, the wall 110 is provided with at least one aperture 112 configured as a slot 114 for accommodating one or more hooks 92 of the wall mount 36. There is provided a cavity 116 between one side of the wall 110 and the other side of the wall 110. The aperture 112 extends from one side of the wall 112 into the cavity. That is to say, the aperture 112 defines an entrance to the cavity 116, and the entrance/aperture 114 opens onto the external surface of the wall 110 upon which the hanger assembly 34 is supported. Apart from the aperture 112, the cavity may be closed, although other apertures or perforations may be provided in the wall 110 as hook engagement means, as a weight saving measure, and/or for aesthetics. The cavity 116 extends at least part of the way from one edge of the wall 110 to another edge of the wall 110. The aperture 112 is provided at least along part of the length of the cavity 116.

[0068] Instead of a continuous slot 114 as shown in the figures, a series of slots may be provided along the length of the cavity 116. In an alternative example, there may be provided a series of cavities 116 and slots 114 in the wall 110, where the series of cavities 116 and slots 114 may be aligned or offset from one another. There may be provided only one slot 114 per cavity 116.

[0069] The operation of the example of Figures 25 to 31 is similar to that described with reference to Figures 19 to 24.

[0070] Figure 26 shows the approach of the wall mount 36 to the wall 110. As can be seen, the wall mount 36 is at an angle to the support members 40, 42, and is slideable relative along the support members 40, 42 to arrive at a position at the wall end 44 of the support members 40, 42 to extend through the slot 112, 114 into the cavity 116, as shown in figure 27. The wall mount 36 is then pivoted relative to the hanger arm 38 to bring it into a vertical orientation, as shown in Figure 28. When engaged (ie in contact with) the edge of the slot 114, the hook shoulder 94 provides a pivot point around which the wall mount 36 rotates to bring the wall abutment surfaces 90 into abutment with one side (i.e. the user side) of the wall 110. As the wall mount 36 is rotated to a vertical position as shown in Figure 28, the hook foot 96 is brought into abutment with the surface of the wall of the cavity 116. That is to say, the hook foot 96 is brought into abutment with the wall which defines the cavity 116 inside the wall 110. The surfaces of the wall 110 in contact with the abutment surfaces 90 and hook foot 96 are opposite one another. Hence the wall mount 36 is engaged with, and hangs from, the wall 110. Note that during this process, the hanger arm 38 remains at a constant angle relative to the wall 110.

[0071] Each hook foot 96 is of a predetermined length chosen in conjunction with the distance of the corner 62 of the third support member 60 such that the corner 62 of the third support member 60 is spaced apart from the hook shoulder 94 pivot point such that the hanger assembly 34 is prevented from becoming disengaged with the wall 110 when the hanger arm 38 and the wall mount

are in the first configuration. That is to say, the hanger arm is locked in position on the wall 110 by virtue of the relative spacing of location of the corner 62 and hook foot 96. Hence should the hanger arm 38 be knocked by a customer or user, then the hanger assembly 34 cannot become disengaged from the wall 32 because the predetermined relative position of the corner 62 and the shoulder 94 prevents the hanger assembly 34 pivoting relative to the wall 110.

[0072] The removal process is shown in Figures 29 to 31. Since the support members 40, 42 are biased away from one another such that they, at rest, are urged into the grooves 70, 72 of the wall mount 36, it takes a positive action by a user to squeeze the support members 40, 42 together before the wall mount 36 can be pivoted and slid away from the wall 110. This action extracts hook 92 from the cavity 116 and slot 112, 114. Note also that because the wall mount 36 can pivot and slide relative to the hanger arm 38, the hook 92 of the wall mount 36 can be removed from the cavity 116 and slot 112, 114 of the wall 110 while the hanger arm 38 is maintained at a constant angle relative to the wall 110 while the wall mount 36 is removed from the wall 110. Hence the hanger assembly 34 can be disengaged from the wall 110 without having to angle the support arm 30 relative to the wall 110.

[0073] Thus there is provided a hanger assembly and hanger system in which the hanger arm can be inserted and removed from a wall by a simple operation without interference with hanger assemblies on any other row mounted on the wall.

[0074] Thus in a scenario where there are a plurality of hanger assemblies on a wall, arranged in a number of rows extending above one another, should a user wish to remove or adjust the position of a hanger assembly on a lower row, then this may be done without having to adjust the position of the hanger assemblies on higher rows. This is because the hanger assembly of the present disclosure can be removed whilst keeping the hanger arm at a constant angle relative to the wall, and hence its removal or insertion does not interfere with hanger assemblies on any other row mounted on the wall.

[0075] This has a significant advantage over devices of the related art, since it provides a time and thus cost saving for the user. As the wall mount also positively locks the hanger assembly to the wall, it also provides for a more robust hanging assembly than that of the related art, preventing accidental removal of the hanger assembly from the wall to which it is attached.

[0076] Although the wall is shown as a series of aligned holes spaced apart by equal amounts, other perforated wall arrangements may be used in conjunction with the hanger assembly of the present disclosure.

[0077] Attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.

[0078] All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

[0079] Each feature disclosed in this specification (including any accompanying claims, abstract and drawings) may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

[0080] The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

Claims

1. A hanger assembly (34) for engagement with a wall (32);
the hanger assembly (34) comprising :

a wall mount (36) for engagement with the wall (32); and
a hanger arm (38) which comprises ;

a first support member (40) and a second support member (42),
each of the support members having a wall end (44), which in use is proximate the wall (32); and a distal end (46) furthest from the wall (32);
wherein engagement features (50,52) are provided on the support members (40,42) for engagement with engagement features (54,56) provided on the wall mount (36) to provide a releasable locking arrangement; the first support member (40) being joined to, and spaced apart from, the second support (42) member by a span member (48);
such that the first support member (40) and second support member (42) are moveable between a first relative position and a second relative position, wherein the distance between the support members (40,42), at the wall end (44), in the first relative position is greater than the distance between the support members (40,42) in the second relative position;

whereby the support member (40,42) and wall mount (36) engagement features (40,42;54,56)

are configured to be selectively engaged with one another in a first configuration when the first support member (40) and second support member (42) are in the first relative position, such that the hanger arm (38) and wall mount (36) are substantially locked in position relative to one another; and

configured to be selectively disengaged with one another in a second configuration when the first support member (40) and second support member (42) are in the second relative position, to allow the hanger arm (38) and wall mount (36) to be moveable relative to one another such that the hanger arm (38) and wall mount (36) are pivotable relative to one another; and the hanger arm (38) further comprises a third support member (60) which extends from one of the support member engagement features (50,52) and has a corner (62) such that at least part of the third support member (60) is angled towards alignment with the first and second support members (40,42).

2. A hanger assembly (34) as claimed in claim 1, wherein the hanger arm (38) and wall mount (36) are configured such that in the second configuration the hanger arm and wall mount are slideable relative to one another.

3. A hanger assembly (34) as claimed in claim 1 or claim 2 wherein the span member (48) is located away from the wall end (44), and towards the distal end (46), of the support members (40,42).

4. A hanger assembly (34) as claimed in claim 3 wherein the span member (48) is provided at the distal end (46) of the first and second support members (40,42).

5. A hanger assembly (34) as claimed in any one of claims 1 to 4 wherein the first support member (40) and second support member (42) are resiliently biased away from one another by a resilient member to thereby urge the support members from the second relative position to the first relative position.

6. A hanger assembly (34) as claimed in any one of claims 1 to 4 wherein the span member (48) is resilient and biases the first support member (40) and second support member (42) away from one another to thereby urge the support members (40,42) from the second relative position to the first relative position.

7. A hanger assembly (34) as claimed in any one of the preceding claims wherein :

the support member engagement features

- (50,52) are provided at the wall end (44) of the support members; and extend at an angle away from the support member (50,52).
8. A hanger assembly (34) as claimed in any one of the preceding claims wherein the hanger arm (38) is one continuous element.
9. A hanger assembly (34) as claimed in any one of the preceding claims wherein the wall mount (36) engagement features (54,56) are provided as channels (70,72) configured to :
- capture and hold the support member engagement features (50,52) in the first configuration when the support members (40,42) are in the first relative position; and release the support member engagement features (50,52) when the support members (40,2) are in the second relative position.
10. A hanger assembly (34) as claimed in any one of the preceding claims wherein the wall mount (36) comprises a first and second aperture (80,82) through which the support member engagement features (50,52) extend through wherein the apertures (80,82) are "L" shaped such that support members (40,42) may move from the first relative position to the second relative position, and be held in the second relative position by a translation and/or pivot of the wall mount relative to the support members, and such that the support member engagement features are located one side of the wall mount; and the remainder of the support members extend away from the other side of the wall mount.
11. A hanger assembly (34) as claimed in any one of claims 1 to 12 wherein the wall mount (36) further comprises :
- a wall abutment surface (90), for resting against the wall (32);
a hook (92) having a shoulder (94) which extends at an angle to the wall abutment surface; and foot (96) which extends from the shoulder in a direction substantially parallel to the wall abutment surface wherein each hook foot is of a predetermined length, and the corner (62) of the third support member is spaced apart from, and in a predetermined position relative to, a hook shoulder (94) pivot point around which the wall mount (36) is pivotable relative to the wall, such that, in use, the hanger assembly (34) is prevented from becoming disengaged from the wall while the hanger arm (38) and wall mount are in the first configuration.
12. A hanger assembly (34) as claimed in claim 11 wherein wall mount (36) comprises :
- at least two wall abutment surfaces (90); and at least two hooks (92).
13. A hanger system (30) comprising :
- a hanger assembly (34) as claimed in claim 11 or claim 12; and a wall (32) provided with at least one aperture (100, 112), the aperture (100,112) being configured such that the hook(s) (92) of the wall mount (36) may extend through the at least one aperture (100,112) when the wall mount is at a first angle to the wall; and such that the hook is free to pivot relative to the wall to thereby allow the wall mount to rotate to bring the wall abutment surfaces (90) of the wall mount into abutment with one surface of the wall and bring the hook foot into abutment with another surface of the wall such that the wall mount may engage with, and hang from, the wall.
14. A hanger system as claimed in claim 13 wherein the at least one aperture (112) is provided as a slot (114) for accommodating one or more hooks (92).
15. A hanger system as claimed in claim 13 or claim 14 wherein there is provided a cavity (116) between one side of the wall (110) and the other side of the wall; and the aperture (112) extends from one side of the wall into the cavity (116); the cavity (116) extends at least part of the way from one edge of the wall (110) to another edge of the wall (110), and at least one aperture (112) is provided along the length of the cavity.

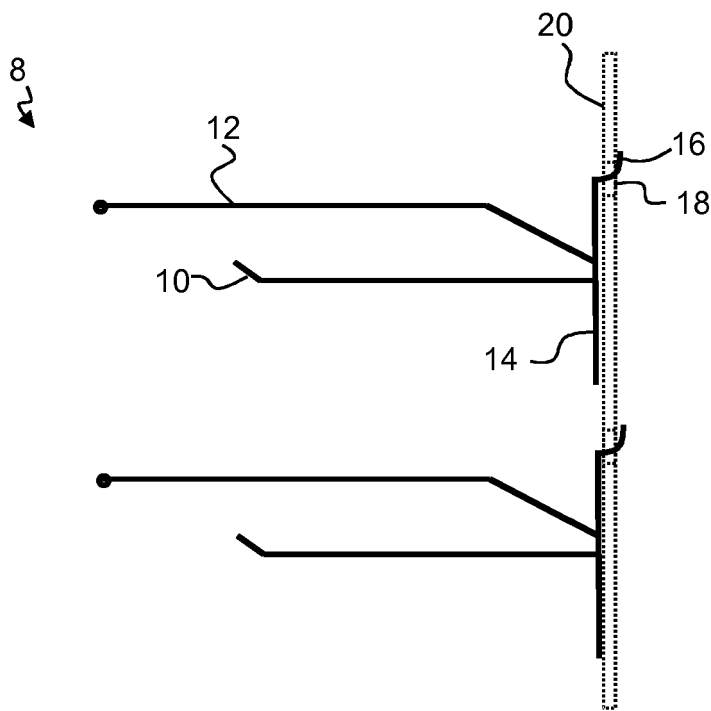


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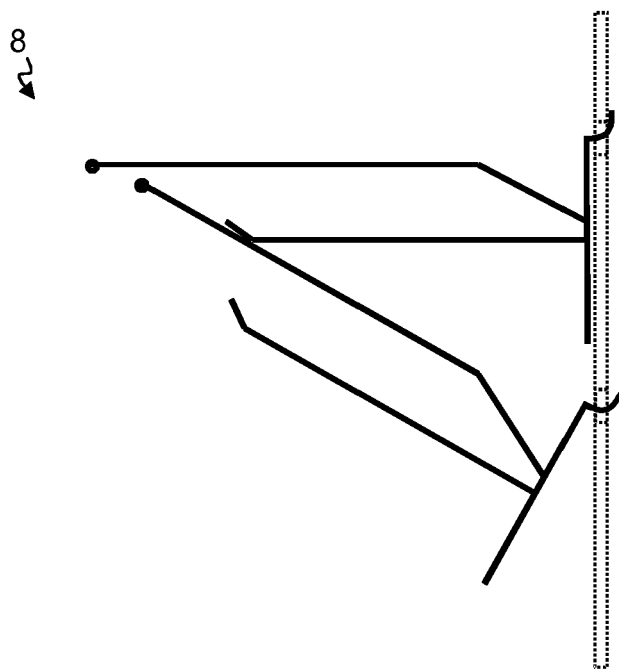


Figure 2

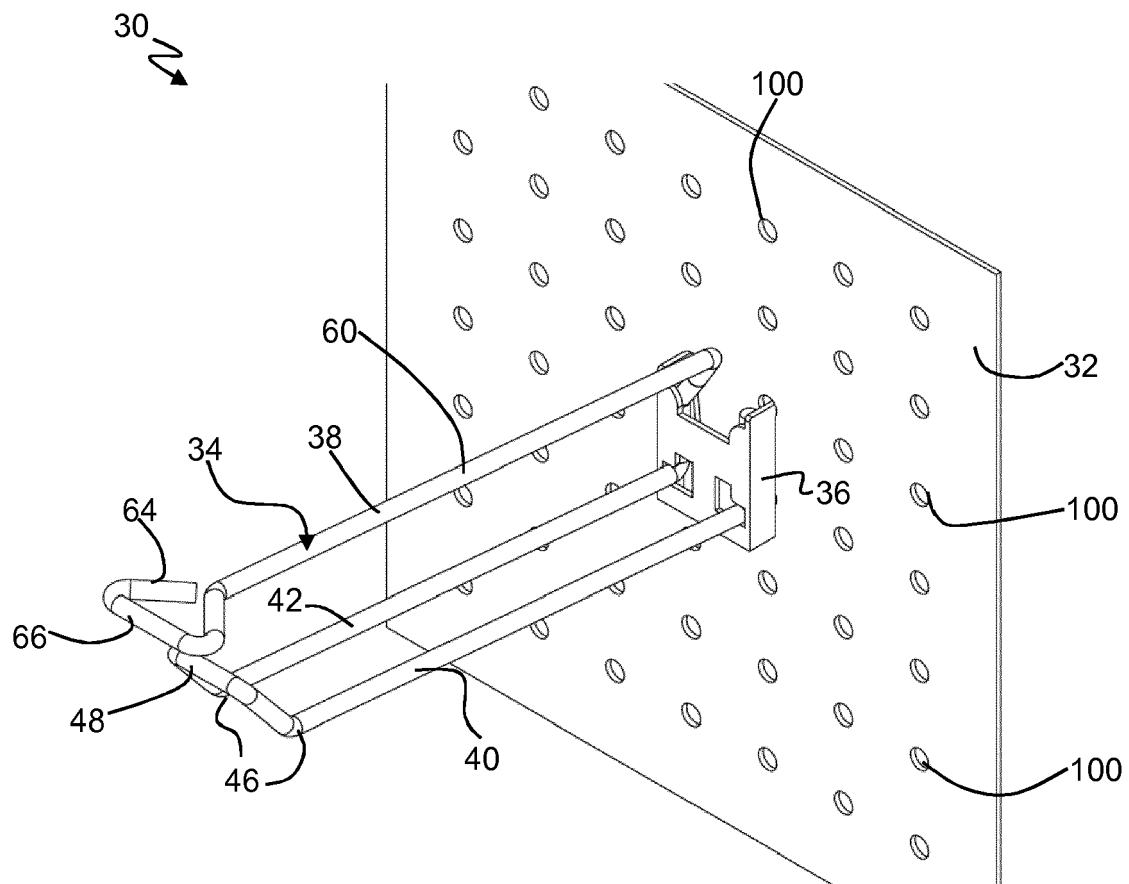


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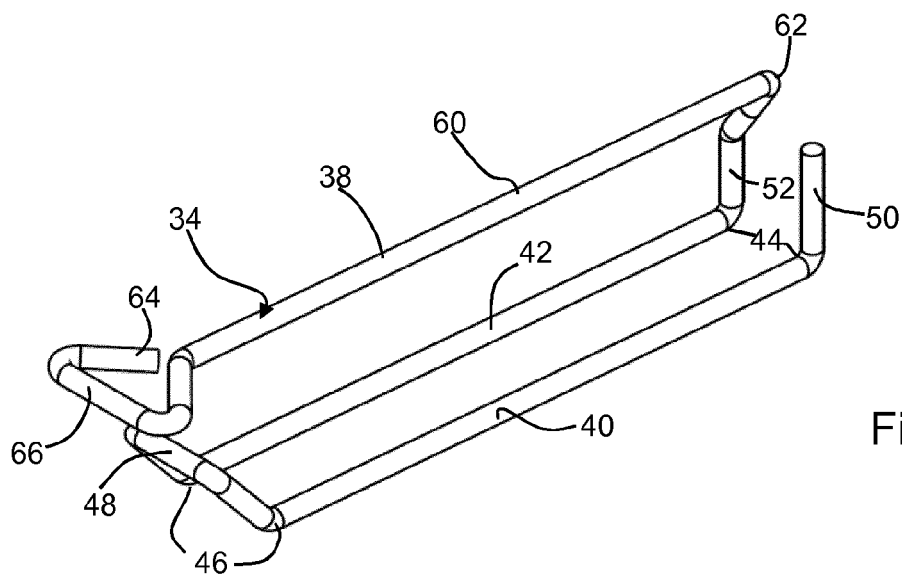


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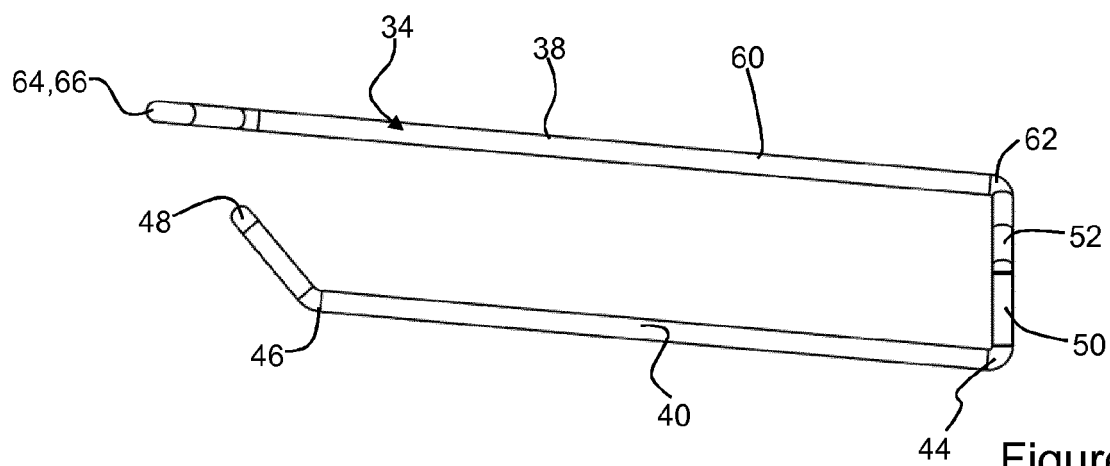


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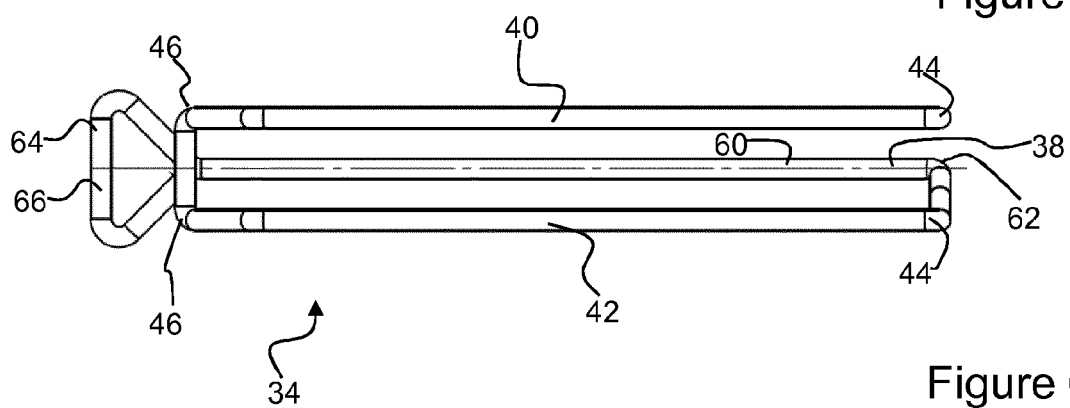


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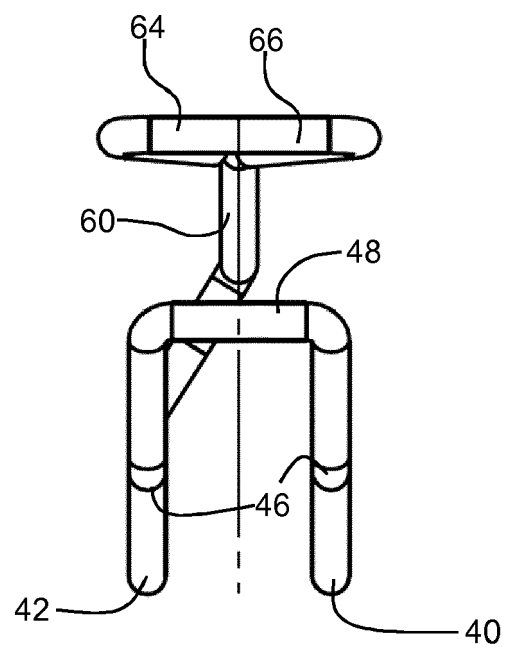


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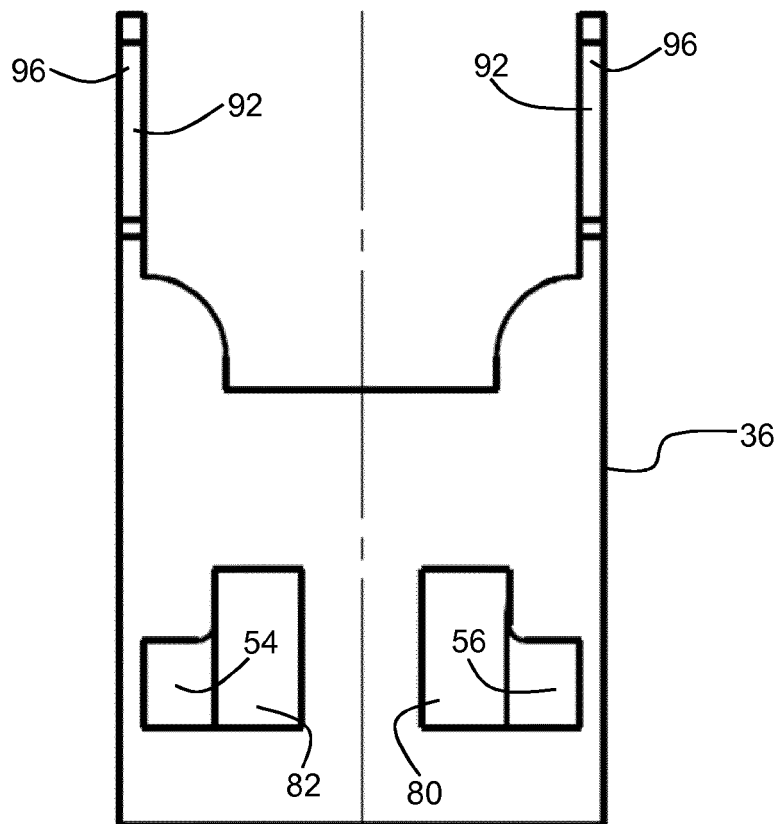


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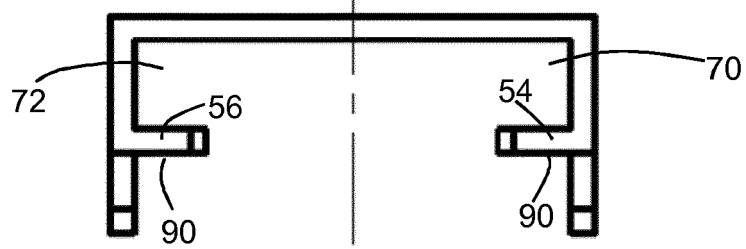


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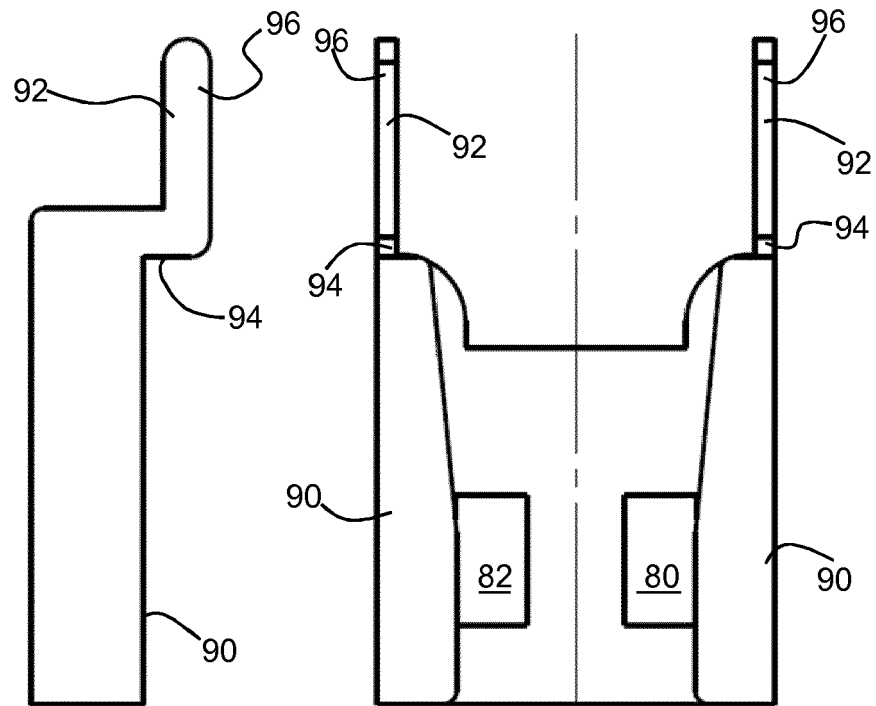


Figure 10

Figure 11

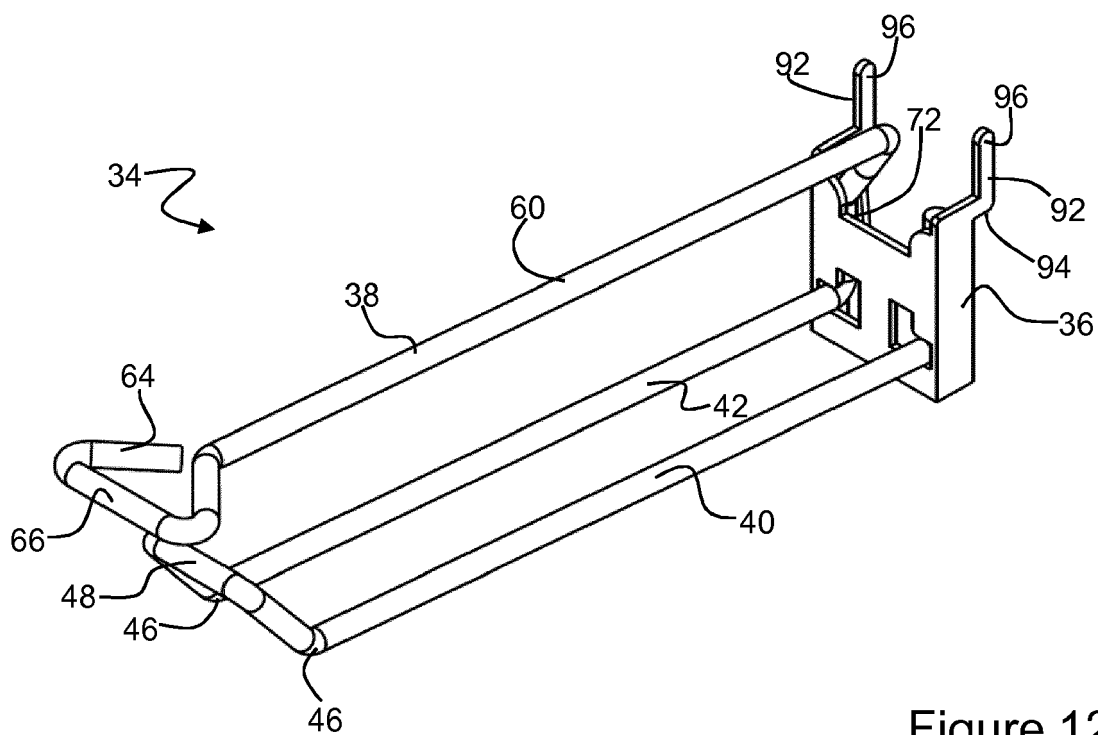


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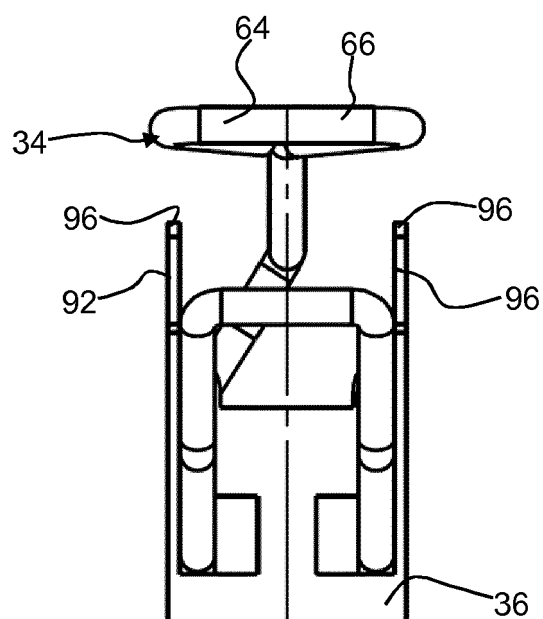


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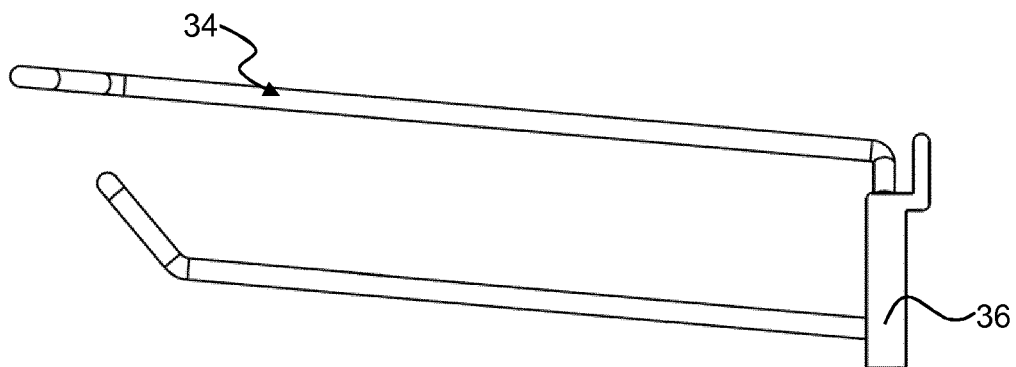


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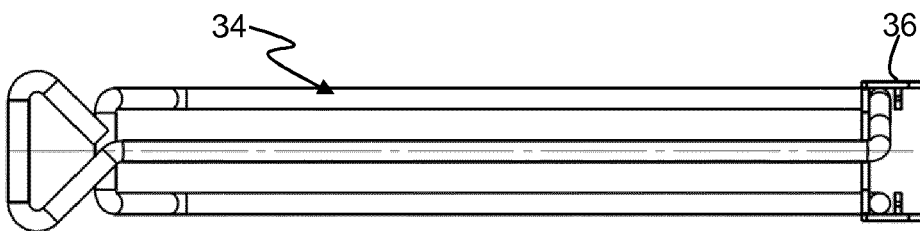


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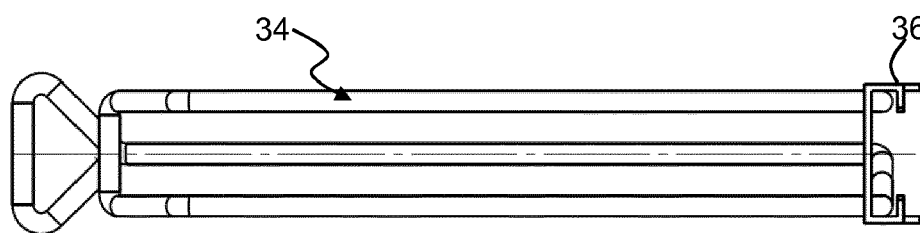


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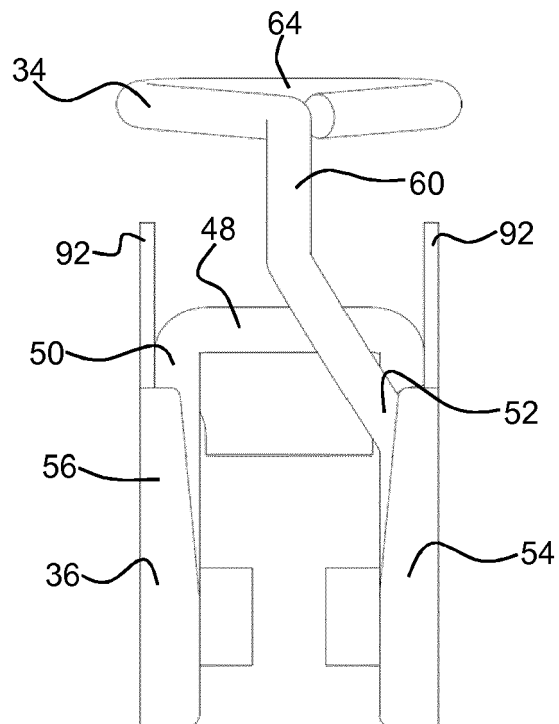


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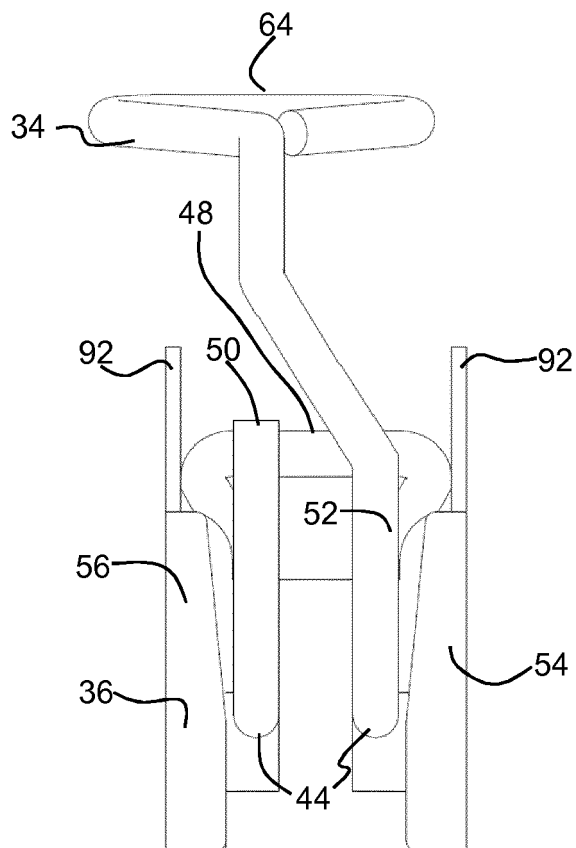


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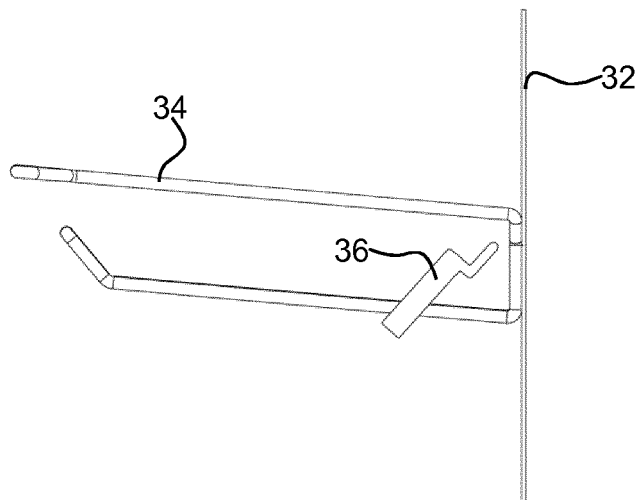


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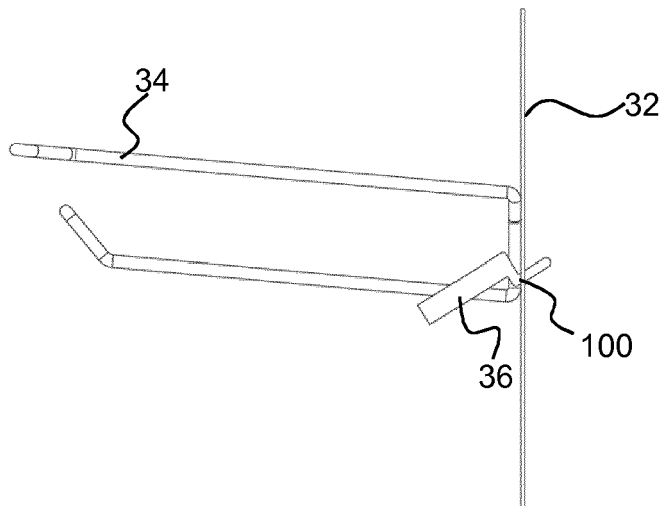


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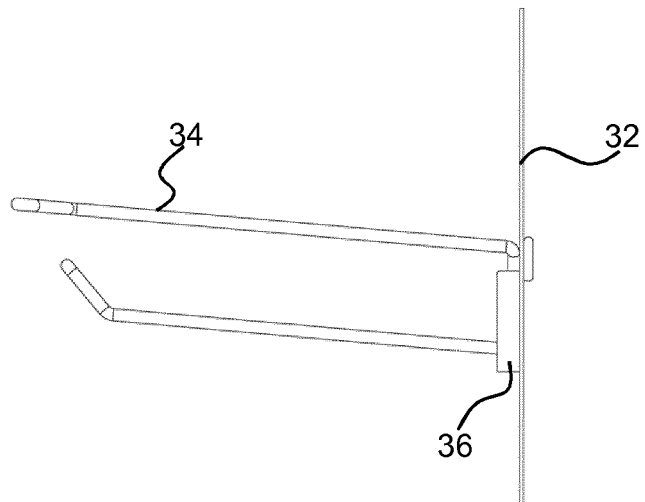


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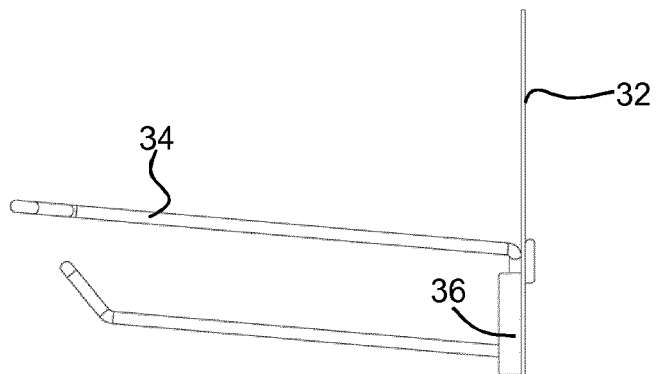


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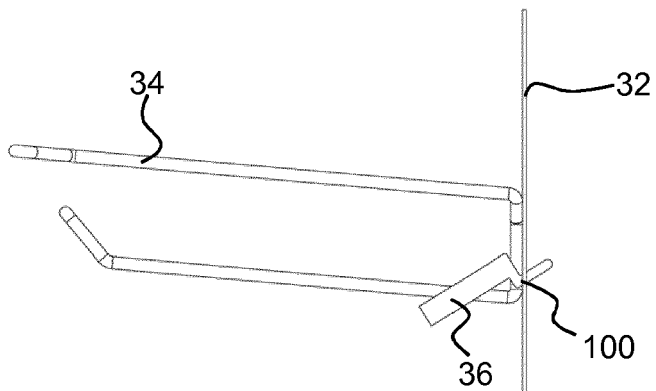


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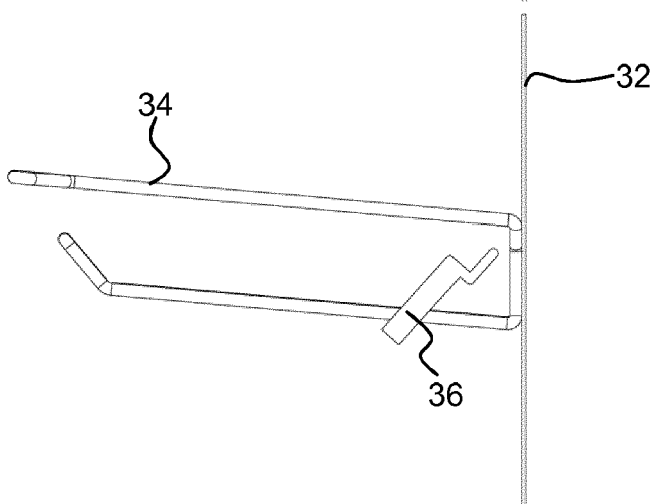


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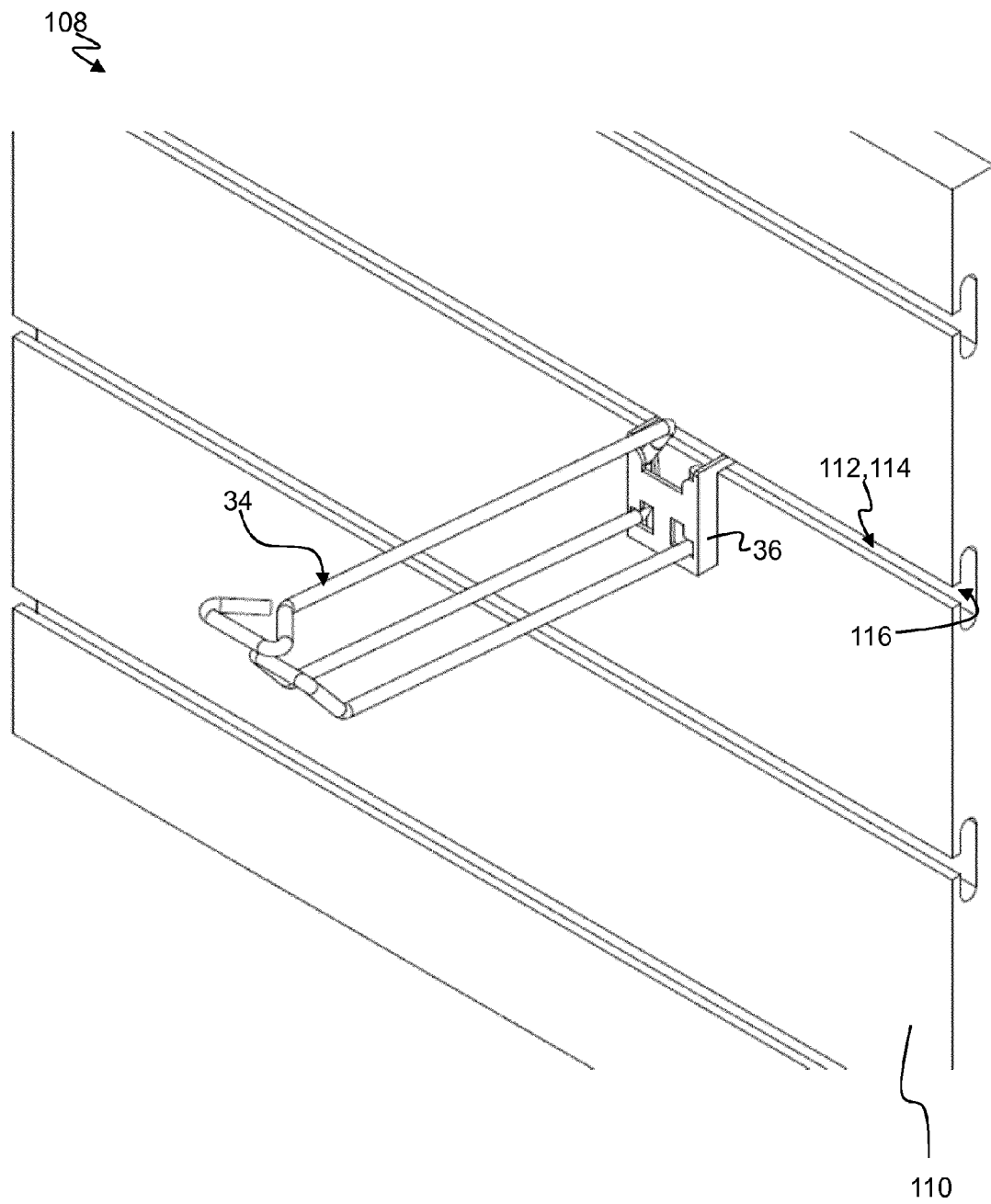


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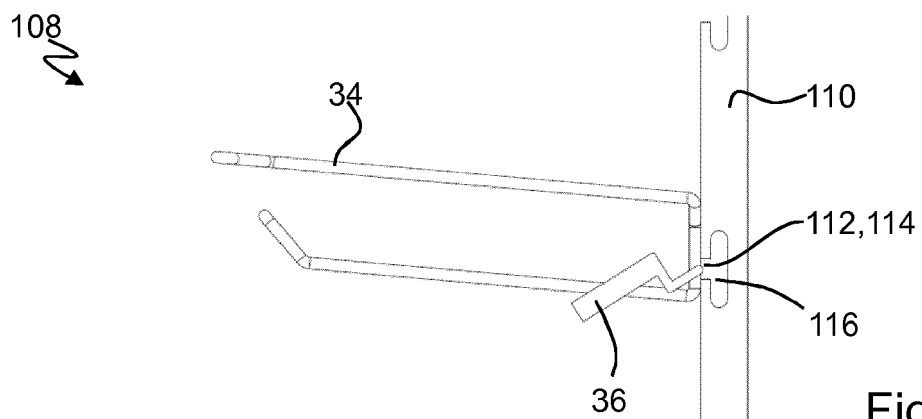


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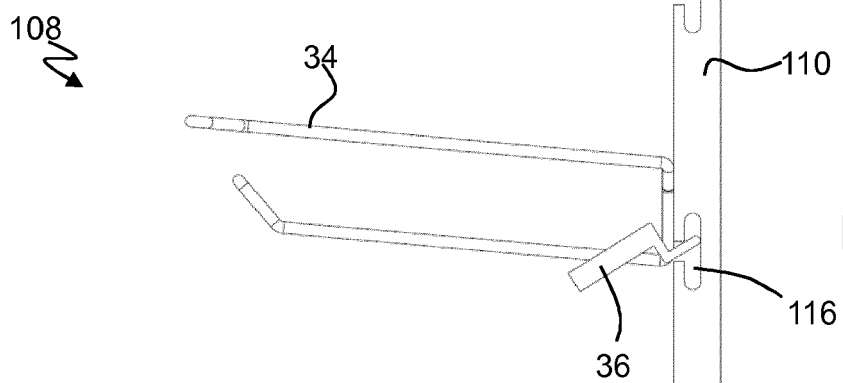


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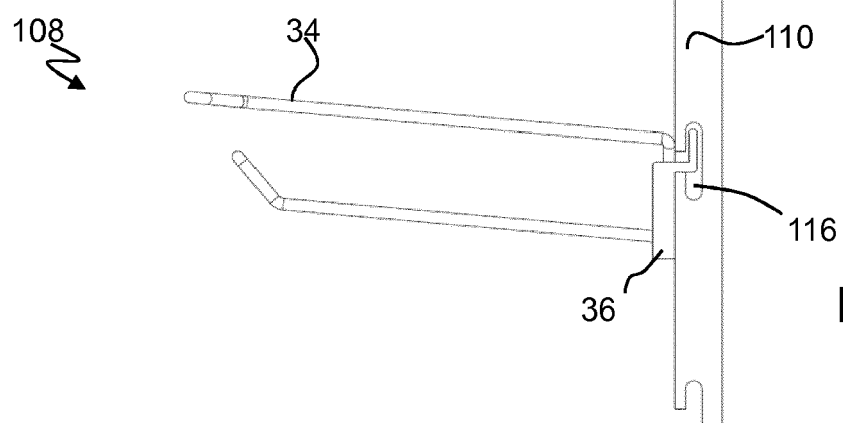
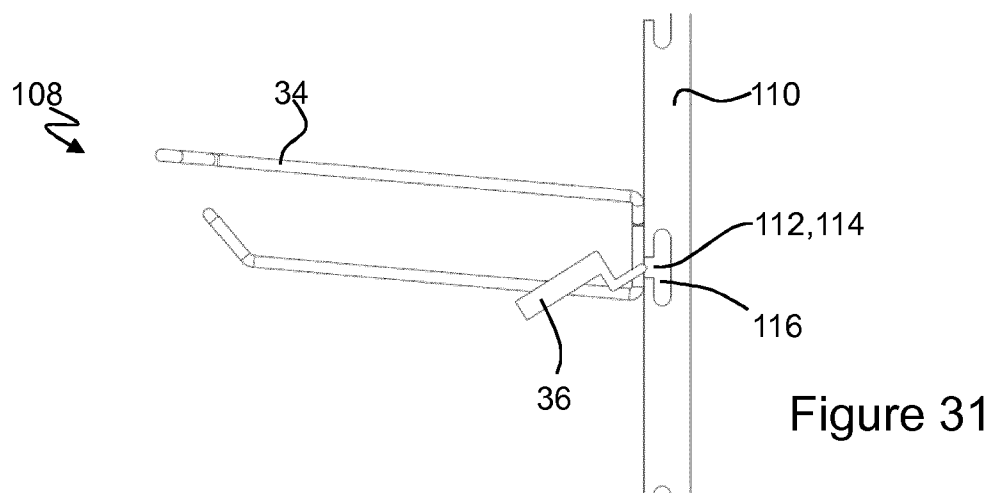
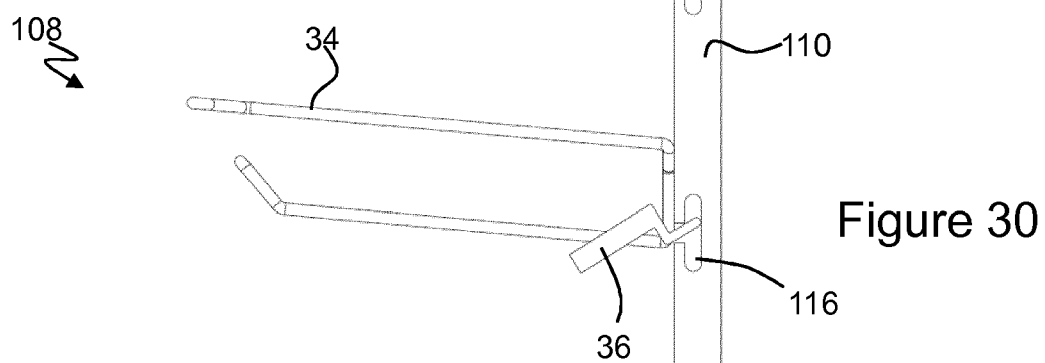
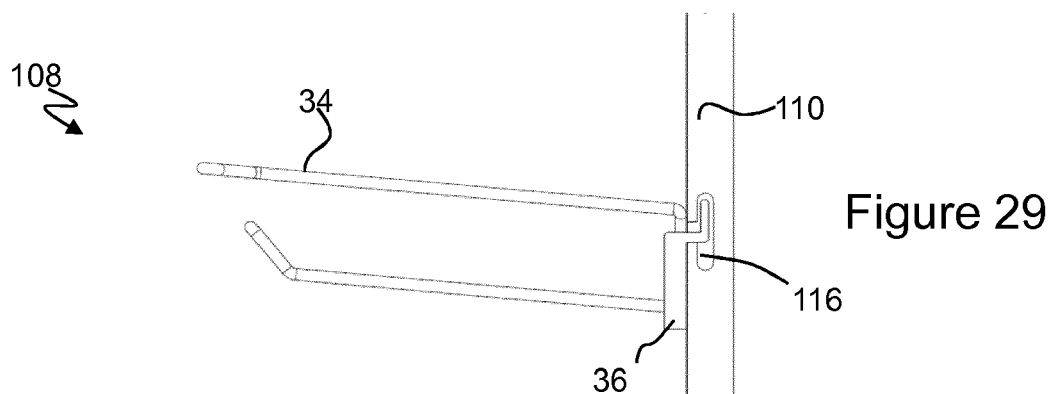


Figure 28





EUROPEAN SEARCH REPORT

Application Number
EP 15 16 0966

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 87 16 575 U1 (HOHAGE GMBH) 18 February 1988 (1988-02-18) * page 3, line 1 - page 7, line 34; figure 2 *	1-7	INV. A47F5/08
X	----- US 6 561 362 B1 (CUMMINS JIM [US]) 13 May 2003 (2003-05-13) * column 1, line 60 - column 5, line 48; figures 1-4 *	1-7	
A	----- DE 33 35 214 A1 (PRYM WERKE WILLIAM [DE]) 11 April 1985 (1985-04-11) * page 5, line 5 - page 18, line 15; figures 1-7 *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 August 2015	Examiner Kohler, Pierre
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 16 0966

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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21-08-2015

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DE 8716575	U1	18-02-1988	NONE
US 6561362	B1	13-05-2003	NONE
DE 3335214	A1	11-04-1985	NONE

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82