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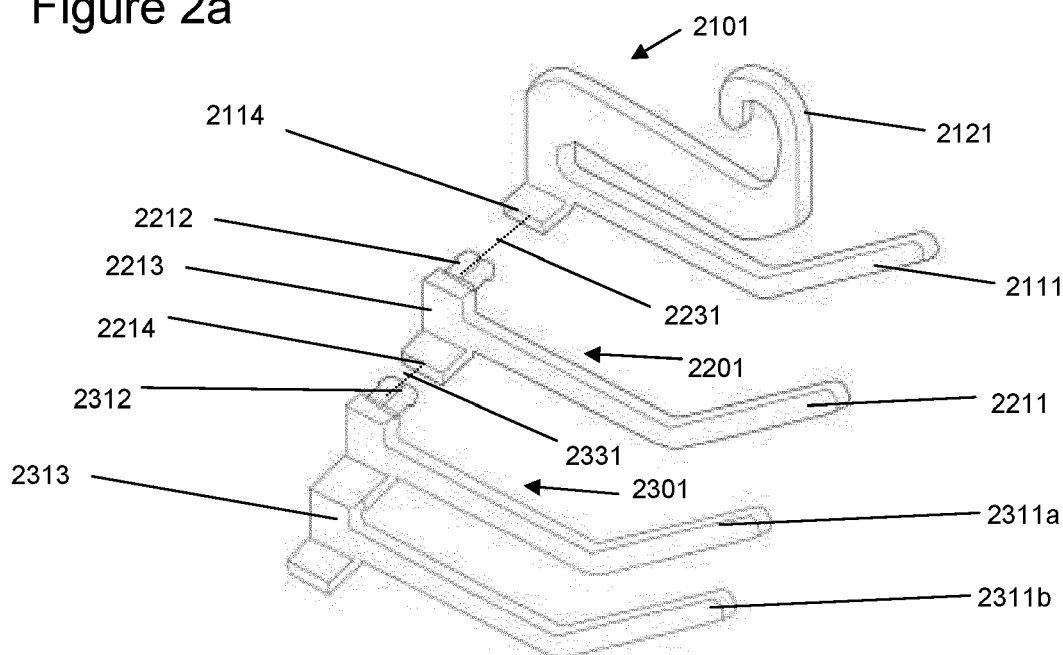
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(54) **Consumer product hanger**

(57) An arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for connection to a head module for a consumer

product hanger. Also, an arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for connection to another arm module for a consumer product hanger.

Figure 2a



Description

Technical Field

[0001] The present disclosure relates to the field of hangers for consumer products (e.g. clothes hangers) and associated methods.

Background

[0002] Clothes hangers are generally used to allow items of clothing to be conveniently stored, for example to help avoid creases or to facilitate the user looking through various items of clothing. Clothes hangers may also allow one or more items of clothing to be displayed, for example, in a shop. Generally the clothes hangers are designed to be suitable for a particular garment or garments. For example, a hanger for a shirt may be designed with a shoulder part for the shoulders of the shirt. However, this hanger may not, for example, facilitate the hanging of a suit jacket and a pair of trousers.

[0003] The listing or discussion of a prior-published document or any background in this specification should not necessarily be taken as an acknowledgement that the document or background is part of the state of the art or is common general knowledge. One or more aspects/embodiments of the present disclosure may or may not address one or more of the background issues.

Summary

[0004] In a first aspect, there is provided an arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for connection to a head module for a consumer product hanger.

[0005] In a second aspect, there is provided an arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for connection to another arm module for a consumer product hanger.

[0006] By providing connectable head and/or arm modules, the consumer product hanger may be readily assembled or disassembled according to the specific requirements of the user. For example, if a garment manufacturer (or shop assistant) was preparing socks for sale in packs of five pairs, he would assemble a consumer product clothes hanger comprising one or more head and/or arm modules to display the five pairs of socks.

[0007] A consumer product hanger may be configured to hang consumer products. A consumer product may be an item of clothing or a non-clothes product such as paper, wallpaper (e.g. samples of wallpaper), a DIY product (e.g. tube of glue, hacksaw blade) and/or a product package.

[0008] The arm connector may comprise an arm-head connector to allow for connection to the head module and an arm-arm connector to allow for connection to another arm module.

[0009] The arm-head connector and/or the arm-arm connector may restrict or prevent translational movement of the arm connector with respect to the connected arm module and/or head module. The arm-head connector and/or the arm-arm connector may restrict or prevent translational movement in the loading direction of the in-use loading axis of the arm connector and the connected arm module and/or head module.

[0010] The arm connector may comprise an arm-head connector to allow for connection to the head module or a first another arm module and an arm-arm connector to allow for connection to a second another arm module.

[0011] The arm-head connector and the arm-arm connector may be arranged to connect to the same complementary connector to thereby be interchangeable.

[0012] The arm connector may be configured to allow for repeatable or releasable connection. This may allow an assembled hanger comprising a number of head and arm modules to be disassembled and reassembled in a different configuration or using a different selection of head and arm modules.

[0013] The connection axis may be the axis along which the connectors are translated to make and/or unmake a connection. The connection axis/axes of the connector(s) may be substantially perpendicular to the in-use loading axis (the in-use loading axis being the axis along which the load is born when the arm module is in use). This may allow the connection to bear more weight in the loading axis.

[0014] The arm module may comprise a spine, a first connection end of the spine configured to allow for connection to a head module along the in-use load axis, and a second connection end of the spine configured to allow for connection to another arm module perpendicular to the in-use load axis. The arm module may comprise multiple spines.

[0015] The arm module may comprise a consumer product rail configured to carry one or more items of clothing. The consumer product rail may be shaped to match the form of the item of clothing. For example, the rail may be shaped to imitate a person's shoulders to allow a coat or shirt to be hung. The consumer product rail may extend laterally away from the spine of the arm module. The consumer product rail may extend between two spines. The consumer product rail may be configured to hang a combination of one or more of a shirt, a coat, a suit jacket, a pair of trousers, an item of underwear, a tie, a sock, a pullover, a cardigan, a hat, a scarf, a glove and a handkerchief. The arm module may comprise a plurality of consumer product rails, each consumer product rail configured to carry one or more items of clothing.

[0016] The arm module may comprise a plurality of consumer product rails, each consumer product rail configured to carry respective one or more items of consumer product for a particular one arm connector.

[0017] The arm module may comprise a plurality of consumer product rails configured to each carry one or more items of clothing, the respective consumer product

rails configured to extend substantially parallel to one another.

[0018] The arm module may comprise an arm-module-rail connector configured to allow for connection of the arm module to a consumer product rail configured to carry one or more items of clothing.

[0019] The arm-module-rail connector may be configured to allow for repeatable or releasable connection.

[0020] An arm module and/or head module may comprise a rearward aperture to allow access for disengagement of arm connectors.

[0021] The arm connector may be configured to allow for relative rotation of the arm connector with respect to a connected head module. The arm connector may be configured to allow for relative rotation of the arm connector with respect to a connected another arm module. The arm connector may be configured to allow for relative rotation around the connection axis. The arm connector may be configured to allow for relative rotation around the connection axis, the connection axis being substantially perpendicular to the in-use loading axis.

[0022] The connection axis may be parallel to the loading axis. The connection axis may be perpendicular to the loading axis.

[0023] The arm connector may be configured to not allow for relative rotation with respect to a connected head module. The arm connector may be configured to not allow for relative rotation with respect to a connected another arm module.

[0024] The arm connector may be configured to allow for a plurality of connected configurations with respect to the connected arm. For example, the connector may have three-fold (or other order) of rotational symmetry, such that the arm connector could be connected in three distinct orientations with respect to the connected arm.

[0025] The arm connector may comprise a push fit connection mechanism. The arm connector may comprise a screw thread. It will be appreciated that where the connectors forming a connection are complementary, the connectors may be switched. For example, in one embodiment the arm-head connector may be male and the complementary head connector may be female, in another embodiment the arm-head connector may be female and the complementary head connector may be male. Similarly, in one embodiment the arm-arm connector may be female and the complementary arm-head connector may be male; in another embodiment the arm-arm connector may be male and the complementary arm-head connector may be female. A female connector may be considered to be receiving connector (e.g. by being configured to receive a complementary male connector).

[0026] An arm module may comprise an arm-head connector and an arm-arm connector wherein the arm-head connector and the arm-arm connector are mutually complementary connectors. That is, a third connector (e.g. a male connector from another arm module) which is the same (e.g. in shape/size/form/function) as the arm-head connector (e.g. a male connector of the present

arm module) may allow for connection with the mutually complementary arm-arm connector (e.g. a female connector of the present arm module).

[0027] A head module may comprise a hook end and head connector end, the hook end configured to allow for hanging of the head module on a consumer product rack and the head connector end comprising a head connector configured to allow for connection with an arm connector of an arm module for a consumer product hanger.

[0028] The hook end may comprise an integral hook. The hook end may comprise a releasably or repeatably attachable hook

[0029] The consumer product hanger may comprise a head module and an arm module, wherein the head module comprises a hook end and head connector end, the hook end configured to allow for hanging of the head module on a consumer product rack and the head connector end configured to allow for connection with an arm connector of the arm module; and the arm module comprises an arm connector configured to allow for connection to the head connector end of the head module.

[0030] The consumer product hanger may comprise a head module and a plurality of arm modules. One or more of the arm modules may be the same. For example, the consumer product hanger may comprise three (or any number) of the same type of arm module (e.g. for hanging or displaying three pairs of socks). The plurality of arm modules may comprise two or more arm modules which are different. For example, the consumer product hanger may comprise an arm module for hanging a shirt an arm module for hanging a tie.

[0031] The consumer product hanger may comprise:

a first head or arm module comprising a first head connector;
a second arm module comprising a second arm-head connector and a third arm-arm connector, wherein the second arm-head connector is configured to be connectable to the first head connector;
a third arm module comprising a fourth arm-head connector, wherein the fourth arm-head connector is configured to be connectable to the first head connector and to be connectable to the third arm-arm connector.

[0032] A consumer product hanger may comprise: a head module and a first and a second arm module, wherein the first arm module is configured to allow for connection to the head module and to the second arm module to provide the consumer product hanger.

[0033] The head module and the arm module may be connected together by the respective head connector and arm connector.

[0034] In a third aspect, there is provided a method of making an arm module for a consumer product hanger, the method comprising:

providing an arm module comprising an arm connector configured to allow for connection to a head module for a consumer product hanger.

[0035] In a third aspect, there is provided a method of making an arm module for a consumer product hanger, the method comprising:

providing an arm module comprising an arm connector configured to allow for connection to another arm module for a consumer product hanger.

[0036] The arm module may be provided by an injection moulding manufacturing process.

[0037] The hanger may comprise a combination of one or more of HIPS (High-Impact PolyStyrene), Polypropylene, Nylon, Polystyrene, metal, wood, plastic and cardboard. The hanger modules and/or head modules may be manufactured using injection moulding.

[0038] In a fourth aspect, there is provided a method of assembling a consumer product hanger, the method comprising:

connecting an arm connector of an arm module to a head module for a consumer product hanger.

[0039] In a fifth aspect, there is provided a method of assembling a consumer product hanger, the method comprising:

connecting an arm connector of an arm module to another arm module for a consumer product hanger.

[0040] The present disclosure includes one or more corresponding aspects, embodiments or features in isolation or in various combinations whether or not specifically stated (including claimed) in that combination or in isolation. Corresponding means for performing one or more of the discussed functions are also within the present disclosure.

[0041] Corresponding computer programs for implementing one or more of the methods disclosed are also within the present disclosure and encompassed by one or more of the described embodiments. The computer program may be stored on a CD, a DVD and/or other non-transitory medium.

[0042] The above summary is intended to be merely exemplary and non-limiting.

Brief Description of the Figures

[0043] A description is now given, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1a depicts a consumer product clothes hanger comprising a first arm module and a head module in a disconnected configuration.

Figure 1b illustrates the consumer product clothes hanger of figure 1a in a connected configuration.

Figure 1c shows the consumer product clothes hanger of figure 1b with an additional second arm module.

Figure 1d depicts a consumer product clothes hanger comprising the clothes hanger of figure 1b and the additional second arm module.

Figure 1e shows a further embodiment of an arm module suitable for connecting to the modules of figure 1a.

Figure 1f illustrates a further embodiment of an arm module suitable for connecting to the modules of figure 1a.

Figure 1g shows a further embodiment of an arm module suitable for connecting to the modules of figure 1a.

Figure 2a illustrates a further consumer product clothes hanger comprising first and second arm modules and a head module in a disconnected configuration.

Figure 2b depicts the consumer product clothes hanger of figure 2a in a connected configuration.

Figure 2c depicts the head connector and arm-head connector of the clothes hanger of figure 2a in a connected configuration.

Figure 2d illustrates the head connector and arm-head connector of the clothes hanger of figure 2a between a connected and a disconnected configuration.

Figure 2e depicts the head connector and arm-head connector of the clothes hanger of figure 2a in a disconnected configuration.

Figure 3a depicts a further head connector and arm-head connector in a connected configuration.

Figure 3b illustrates a further head connector and arm-head connector between a connected and a disconnected configuration.

Figure 3c shows a further head connector and arm-head connector in a disconnected configuration.

Figure 4a illustrates a further consumer product clothes hanger comprising first and second arm modules and a head module in a disconnected configuration.

Figure 4b depicts the consumer product clothes hanger of figure 4a in a connected configuration.

Description of Example Aspects/Embodiments

[0044] Other embodiments depicted in the figures have been provided with reference numerals that correspond to similar features of earlier described embodiments. For example, feature number 1 can also correspond to numbers 101, 201, 301 etc. These numbered features may appear in the figures but may not have been directly referred to within the description of these particular embodiments. These have still been provided in the figures to aid understanding of the further embodiments, particularly in relation to the features of similar earlier

described embodiments.

[0045] It is common to store clothes on a clothes hanger. Generally hangers used in the home allow one item of clothing to be hung per hanger. For example, a coat hanger may be suitable for hanging a single shirt. Other hangers may be configured to allow multiple items of clothing to be hung. For example, a suit hanger may facilitate the hanging of a suit jacket (on the 'shoulders' of the hanger) and of a pair of trousers (on a cross rail). However, in general these elements, which allow the hanging of multiple items of clothing, are fixed with respect to each other. Therefore, for example, a user may not remove the cross rail from a coat hanger to use it with another hanger. In a commercial environment, it is also common to hang multiple items of clothing together as a unit for sale. For example, a shop may pack several pairs of socks together and sell the pack as a unit. As with the domestic hangers, commercial hangers tend to provide a fixed number of hanging elements. However, it may be advantageous to allow flexibility in the number of hanging elements to use in a given situation. For example, if a shop manager wished to have a 'four for the price of three' sale on socks, it may be advantageous if he could assemble a sock hanger suitable for four pairs of socks.

[0046] Figure 1a shows a consumer product clothes hanger (1001 a) in a disconnected configuration, the consumer product clothes hanger (1101a) comprising an arm module (1201) and a head module (1101). This embodiment of the arm module (1201) comprises a first arm connector (1212) configured to allow for connection to the head module along a connection axis (1231). This embodiment also comprises a second arm connector (1214) (not visible) configured to allow for connection to another arm module of a consumer product clothes hanger. The first arm connector (1212) and the second arm connector (1214) form part of a spine (1213) of the arm module (1201). The arm module, in this case, comprises one consumer product clothes rail (1211) for hanging clothes (e.g. a scarf or tie), which extends laterally from (e.g. perpendicular to) the arm module spine (1213). It will be appreciated that, for other embodiments, the head module and/or the arm module may comprise one or more rails which extend from the module body.

[0047] In this case the first arm connector (1212), which is an arm-head connector, has circular symmetry about the connection axis. The arm connector in this case is constructed from compressible (or resilient) material (e.g. rubber or plastic). The head module, in this case comprises, a hook (1121) configured to allow for hanging of the head module on a clothes rack and a head connector end comprising a head connector (1114) which is configured to allow for connection with an arm connector (1212) of the arm module (1201). In this case the head connector (1114) is shaped to be complementary to the arm connector (1212). In this case the hook is an integral part of the hook module. It will be appreciated that, for other embodiments, the hook module may comprise a releasably or repeatably attachable hook.

[0048] To connect the arm module (1201) to the head module (1101) the head connector (1114) is aligned with the connection axis (1231) of the arm connector (1212). Pushing the arm connector (1212) towards the head connector (1114) along the connection axis (1231) enables the arm connector (1212) to deform and connect with the complementary head connector (1114). This type of connection may be considered to be a push fit connection mechanism. It will be appreciated that this mechanism may be facilitated by a flexible arm connector and/or a flexible head connector. In the connected configuration, the connection may restrict or prevent relative translation of the connected connectors.

[0049] The consumer product clothes hanger (1001a) comprising the connected arm and head modules (1101, 1201) is shown in figure 1b. In the connected configuration, as the complementary head and arm connectors (1212, 1114) have circular symmetry, and as friction is limited, the arm module (1201) can be rotated about the connection axis (1231) with respect to the head module (1101). This may allow a range of module configurations to be available. It will be appreciated that connectors with discrete rotational symmetry (e.g. 6-fold rotational symmetry provided by hexagonal connectors) may allow a finite number of configurations to be available. This may allow flexibility in the relative orientations of the modules whilst allowing each of the configurations to be easily reproduced.

[0050] As shown in figure 1b, the connection axis in this case is parallel to the in-use loading axis (the axis in which load is born when in use).

[0051] As noted above, the first arm module (1201) comprises an arm-arm connector (1214) suitable for connecting to another arm module. Figure 1c depicts a further embodiment of an arm module (1301) as well as the connected hanger (1001a). In this case the further arm module (1301) is the same as the previously described first hanger module (1201). This second arm module also comprises an arm-head connector (1312) configured to allow connection to the head module (1101). In this case, the arm-head connector (1312) also enables connection to the arm-arm connector (1214) of the first arm module. It will be appreciated that for this embodiment the arm-head connector (1312) is the same as the arm head connector (1212) of the first arm module (1201), and therefore that the second arm module could be connected directly to the head module (1101). That is, interchangeability is provided.

[0052] As in the previous case, the arm-head connector (1312) can be connected to the complementary connector (which in this case is the arm-arm connector (1214) of the first arm module (1201)) by aligning the arm-head connector (1312) of the second arm module (1301) with the arm-arm connector (1214) of the first module (1201) and pushing the along the connection axis (1331). In this case the connection axes of the first and second arm modules are in line.

[0053] When the connection is complete, the consum-

er product clothes hanger (1001b) comprises a head module (1101) and two arm modules (1201, 1301). It will be appreciated that more arm modules may be added. In this way the user can build up the hanger until they have the required number of rails.

[0054] It will be appreciated that for other embodiments, the bottom arm module may be a terminating module and not comprise an arm-arm connector.

[0055] It will be appreciated that the arm-arm connectors facilitate the addition of further arm modules. However unlike, the situation depicted in figure 1d, the constituent arm modules of a hanger may not all be the same. Depicted in figures 1e and 1f are two further embodiments of arm modules with different configurations of consumer product clothes rails.

[0056] Figure 1e depicts an embodiment (1401) comprising two rails which extend laterally away from the spine (1413). That is, in this case the rails are configured to be perpendicular to the load axis. In this case the two rails are configured to extend along parallel lines on the same side of the spine. This arm module may be suitable for hanging two scarves, for example. In figure 1f the arm module comprises two rails configured to extend laterally away from the spine (1513) in opposite directions. This arm module may be suitable for hanging a shirt for example.

[0057] Figure 1g depicts an embodiment of an arm module (1601) comprising an arm-module-rail connector (1641) which enables the rail (1611) to be attached and detached from the spine (1613). That is, the arm-module-rail connector (1641) is configured to allow repeatable or releasable connection. This may allow the components of the hangers to be more easily stored or transported.

[0058] Assembling consumer product hangers using modules may allow greater flexibility in the number of configurations available. For example, where the supply chain is slow or sporadic (e.g. due to the remoteness of the manufacturer and/or the batch size required to make a new manufacturing run viable), this flexibility may allow the end user (e.g. garment manufacturer) to adjust the configurations of the hangers to quickly respond to demand. For example, if the user (e.g. garment manufacturer) had initially ordered modules to allow a number of two-rail hangers and an equal number of four rail hangers to be made, but the sale of two-rail hanger products were unexpectedly low, the end user may be able to disassemble the excess two-rail hangers and use the modules to assemble additional four-rail hangers as required. It may also allow a range of hangers to be produced using the same modular components which may reduce manufacturing costs (e.g. as the same manufacturing tools could be used to make the modules for a two, three or four-rail hanger). In the case of breakage, a module of a hanger may be replaced more readily than replacing an entire hanger which may reduce packaging costs.

[0059] Figure 2a depicts a further consumer product clothes hanger (2001) comprising a head module (2101) and two embodiments (2201, 2301) of arm modules. In

this embodiment the modules are manufactured using polypropylene with an injection moulding process, although other materials may be used (e.g. metal or plastic such as polymers of styrene, acrylonitrile and/or propylene). In figure 2, the consumer product clothes hanger (2001) is depicted in a disconnected configuration.

[0060] The head module (2101) in this case comprises an integral consumer product clothes rail (2111) for hanging clothes; a hook (2121) configured to allow for hanging of the head module (2101) on a clothes rack; and a head connector end comprising a head connector (2114) configured to allow for connection with an arm connector (2212) of an arm module (2201). In this case the hook (2121) is an integral part of the hook module (2101). It will be appreciated that, for other embodiments, the hook module may comprise a releasably or repeatably attachable hook.

[0061] Like the embodiment of figure 1a, the first arm module depicted in figure 2a comprises a spine (2213) having two arm connectors (2212, 2214), and a consumer product clothes rail (2211) for hanging clothes (in this case socks). The first arm connector (2212) is, in this case, an arm-head connector configured to allow for connection to a head module (2101) of the consumer product clothes hanger (2001). The second arm connector (2214) is an arm-arm connector configured to allow for connection to another arm module (2301). The arm-head connector (2212) in this case comprises two flexible protrusions, which can deform to allow the arm-head connector (2212) to connect to the head connector (2114) of the head module. In this case, the arm connectors are configured to not allow for relative rotation with respect to a connected another arm module. In this case, relative rotation is prevented as the complementary connectors are not circularly symmetric. It will be appreciated that for other embodiments relative rotation may be prevented by friction between the complementary connectors. It will be appreciated that for other embodiments, where the connectors are, for example, circularly symmetric the connection may allow for relative rotation about an axis which is perpendicular to the in-use loading axis.

[0062] The second arm module embodiment (2301) of figure 2a comprises an arm-head connector (2312) which is the same as the arm-head connector (2212) of the first arm module (2201) of figure 2a. This allows the second arm module (2301) to connect to either the head module (2101) directly, or to the arm-arm connector of the first arm module (2201). Unlike the first arm module (2201), the second arm module (2301) of figure 2a does not comprise an arm-arm connector. It will be appreciated that, for other embodiments, the arm-head connector of an arm module may allow connection only to another arm module and not to the head module.

[0063] Unlike the first arm module, the second arm module comprises two consumer product clothes rails (2311 a, 2311 b). The two consumer product clothes rails (2311 a, 2311 b), in this case, extend laterally, and in parallel, from the spine in a direction perpendicular to the

in-use loading axis (2031).

[0064] Figure 2b depicts the consumer product clothes hanger (2001) of figure 2a in a connected configuration. In the connected configuration the consumer product clothes rails (2111, 2211, 2311a, 2311b) are configured to be parallel.

[0065] Figures 2c shows a cross section of the head connector (2114) and the arm-head connector (2212) of the first arm module (2201) in a connected configuration. In this example the arm connector (2212) comprises two flexible protrusions. The flexible protrusions comprise tapered inserting surfaces such that they deform when pushed against the head connector (2114). When in the connected configuration, the flexible protrusions of the arm connector (2212) and the head connector (2114) comprise complementary tapered connecting surfaces. These tapered surfaces are configured to maintain the connection when a moderate pulling force is applied along the connection axis, but to allow the flexible protrusions to deform when a stronger pulling force is applied along the connection axis. This deformation of the flexible protrusions allows the arm-head connector (2212) to fit through the hole of the head connector (as shown in figure 2d). Figure 2e depicts the head connector and the arm-head connector in the disconnected configuration. It will be appreciated that this push-fit mechanism allows the connection to be made and unmade repeatedly by applying a pushing and pulling force along the connection axis. It will be appreciated that the same connection mechanism may be used to connect the arm-head connector (2312) to the arm-arm connector (2214).

[0066] In this case, the connection axes (2231, 2331) of the connectors are substantially perpendicular to the in-use loading axis (2031). This may allow the connections to be stronger along the direction in which the weight is born (the in-use load bearing axis). This may allow a weaker connection to be used to bear the same weight. This may allow the connection to be easily made and unmade. That is, the arm connectors are configured to allow repeatable or releasable connection.

[0067] It will be appreciated that the hangers and/or modules may be removed (e.g. at the point of sale) and reused or recycled.

[0068] Figures 3a-3c depict another head connector (3114) and arm-head connector (3211). As in the previous example, the arm-head connector comprises two flexible protrusions (3212a, 3212b) which can be inserted into and engage with the head connector (3114). Unlike the arm-head and head connector of figured 2c, the connectors in this embodiment are not configured to have complementary tapering surfaces. In this case, when the arm-head and head connector are in the connected configuration, the connection can not be unmade by pulling the arm module away from the head module along the connection axis. This may allow a stronger connection to be made. In this case, the flexible protrusions (3212a, 3212b) are accessible when in the connected configuration via a rearward aperture in the head connector which

is configured to allow access for disengagement of arm connector. In this case, a key (3901) is used to deform the flexible protrusions (shown in figure 3b) to allow the head connector and arm head connector to be disconnected. It will be appreciated that in other embodiments, the flexible protrusions may be accessible in the connected configuration to allow release using a user's fingers. It will be appreciated that the head connector may be flexible to allow connection/disconnection with a complementary arm-head connector. Figure 3c depicts the head connector and the arm-head connector in the disconnected configuration. It will be appreciated that the same connection mechanism may be used to connect an arm-head connector to an arm-arm connector.

[0069] It will be appreciated that for other embodiments, the connection between a head connector and an arm-head connector may be facilitated using complementary screw threads.

[0070] Figure 4a depicts a further consumer product clothes hanger (4001) comprising a head module (4101) and two embodiments (4201, 4301) of arm modules. In this embodiment the modules are manufactured using polypropylene with an injection moulding process, although other materials may be used (e.g. metal or plastic such as polymers of styrene, acrylonitrile and/or propylene). In figure 4a, the consumer product clothes hanger (4001) is depicted in a disconnected configuration.

[0071] The head module (4101) in this case comprises an integral consumer product clothes rail (4111) for hanging clothes; a hook (4121) configured to allow for hanging of the head module (4101) on a clothes rack; and a head connector end comprising a head connector (4114) configured to allow for connection with an arm connector (4212) of an arm module (4201). In this case the hook (4121) is an integral part of the hook module (4101). It will be appreciated that, for other embodiments, the hook module may comprise a releasably or repeatably attachable hook.

[0072] Like the embodiment of figure 2a, the first arm module depicted in figure 4a comprises a spine (4213) having two arm connectors (4212, 4214), and a consumer product clothes rail (4211) for hanging clothes (in this case socks). The first arm connector (4212) is, in this case, an arm-head connector configured to allow for connection to a head module (4101) of the consumer product clothes hanger (4001). The second arm connector (4214) is an arm-arm connector configured to allow for connection to another arm module (4301). The arm-head connector (4212) in this case comprises a single rigid protrusion, which is configured to slide laterally into a complementary channel of the head connector (4114) along a sliding connection axis (4231) to allow the arm-head connector (4212) to connect to the head connector (4114) of the head module. The rigid protrusion and complementary channel are shaped to restrict movement in directions which are not the sliding direction. The sliding channel is configured such that it extends only partially through the spine. This allows the protrusion to be insert-

ed into the channel from one side and prevents the protrusion from passing through the spine and exiting from the other side. It will be appreciated that other example embodiments may be configured such that the channel passes through the spine. Also there may be other embodiments with two or more arm-head connectors (4212) (e.g. spaced parallel to the sliding axis and which extend from one end of the spine (4213) to both connect to the arm module). The same may be so for the arm connector (4214) used to connect to another arm. In certain embodiments, the connectors (4212, 4214) may take the form of the connectors shown in figures 2 and 3. The connection axis can still be considered to be perpendicular to the loading axis in the embodiments. It will be appreciated that the one or more connectors (e.g. the protrusion, channel, male or female) may or may not be rigid.

[0073] In this case, the arm connectors are configured to not allow for relative rotation with respect to a connected another arm module. In this case, relative rotation is prevented as the complementary connectors are not circularly symmetric. It will be appreciated that for other embodiments relative rotation may be prevented by friction between the complementary connectors. It will be appreciated that for other embodiments, where the connectors are, for example, circularly symmetric the connection may allow for relative rotation about an axis which is perpendicular to the in-use loading axis.

[0074] The second arm module embodiment (4301) of figure 4a is identical to the first arm module embodiment (4201) having a first arm connector (4312) which is an arm-head connector configured to allow for connection to a head module (4101) or to the first arm module (4201) and a second arm connector (4314) which is an arm-arm connector configured to allow for connection to another arm module. The first arm connector allows the second arm module (4301) to connect to either the head module (4101) directly, or to the arm-arm connector of the first arm module (4201).

[0075] The first arm module (4201) and the second arm module (4301) each comprise a single consumer product clothes rail (4211, 4311). The two consumer product clothes rails, in this case, extend laterally, and in parallel, from the spine in a direction perpendicular to the in-use loading axis (4031).

[0076] Figure 4b depicts the consumer product clothes hanger (4001) of figure 4a in a connected configuration. In the connected configuration the consumer product clothes rails (4111, 4211, 4311) are configured to be parallel.

[0077] It will be appreciated that the connectors may comprise a locking mechanism to prevent or restrict lateral movement of the connectors along the sliding connection axis when in the connected configuration (e.g. to prevent separation when in use). For example, the connectors may comprise a pin inserted through the connectors when in the connected configuration to prevent lateral movement. Alternatively/in addition, the connectors

may be shaped such that when a load is applied along the loading axis in the connected configuration lateral movement is restricted.

[0078] In view of the foregoing description it will be evident to a person skilled in the art that various modifications may be made within the scope of the disclosure. For example, the key (3901) could be used, with an embodiment similar to figure 2c-2e but with a rearward aperture, to move the arms (2312a, 2312b) towards one another to release engagement with the complementary connecting surfaces. It will be appreciated that key engagement is provided by a rearward aperture which allows access to the connection mechanism.

Claims

1. An arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for at least one of:
 - connection to a head module for a consumer product hanger; and
 - connection to another arm module for a consumer product hanger.
2. An arm module according to claim 1, wherein the arm connector comprises an arm-head connector to allow for connection to the head module or a first another arm module and an arm-arm connector to allow for connection to a second another arm module.
3. An arm module according to claim 2 wherein the arm-head connector and the arm-arm connector are arranged to connect to the same complementary connector to thereby be interchangeable.
4. An arm module according to claim 2 wherein the arm-head connector and the arm-arm connector are mutually complementary connectors.
5. An arm module according to any preceding claim, wherein the arm connector(s) is/are configured to allow for repeatable or releasable connection.
6. An arm module according to any preceding claim, wherein the connection axis/axes of the connector (s) is/are substantially perpendicular to the in-use loading axis.
7. An arm module according to any preceding claim, wherein the arm module comprises a spine, a first connection end of the spine configured to allow for connection to a head module along the in-use load axis, and a second connection end of the spine configured to allow for connection to another arm module perpendicular to the in-use load axis.

8. An arm module according to any preceding claim, wherein the arm module comprises one or more consumer product rails, each rail being configured to carry one or more items of clothing. 5
9. An arm module according to any preceding claim, wherein the arm connector is configured to not allow for relative rotation with respect to a connected another arm module or head module. 10
10. A head module for a consumer product hanger, the head module comprising a hook end and head connector end, the hook end configured to allow for hanging of the head module on a clothes rack and the head connector end comprising a head connector configured to allow for connection with an arm connector of an arm module for a consumer product hanger. 15
11. A consumer product hanger, the consumer product hanger comprising: 20
- a head module according to claim 10 and at least one arm module according to claim 1. 25
12. A consumer product hanger, the consumer product hanger comprising:
- a head module according to claim 10; 30
- a first and a second arm module according to claim 1, wherein
- the first arm module is configured to allow for connection to the head module and to the second arm module, and
- the second arm module is configured to allow for connection to the first arm module. 35
13. A consumer product hanger, the consumer product hanger comprising a head module and an arm module, wherein 40
- the head module comprises a hook end and head connector end, the hook end configured to allow for hanging of the head module on a clothes rack and the head connector end configured to allow for connection with an arm connector of the arm module; 45
- and
- the arm module comprises an arm connector configured to allow for connection to the head connector end of the head module. 50
14. Method of making an arm module for a consumer product hanger, the method comprising:
- providing an arm module comprising an arm connector configured to allow for connection to a head module for a consumer product hanger. 55
15. Method of making an arm module for a consumer

product hanger, the method comprising:

providing an arm module for a consumer product hanger, the arm module comprising an arm connector configured to allow for connection to another arm module for a consumer product hanger.

Figure 1a

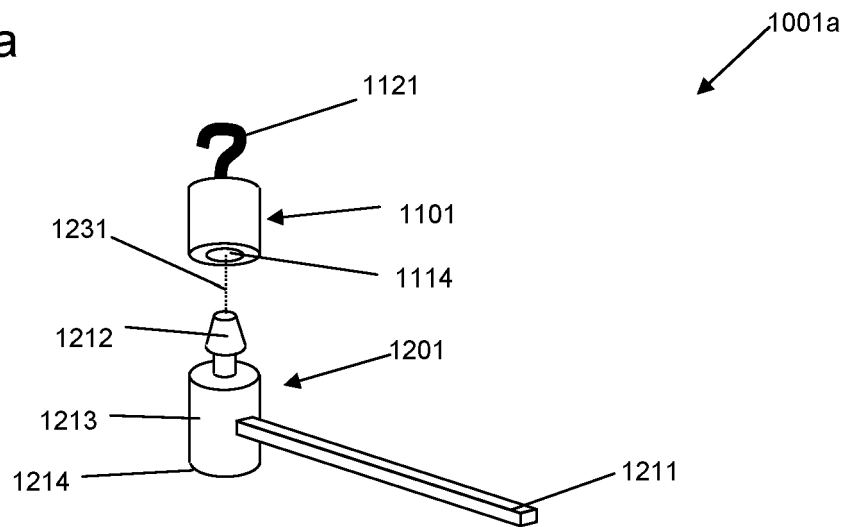


Figure 1b

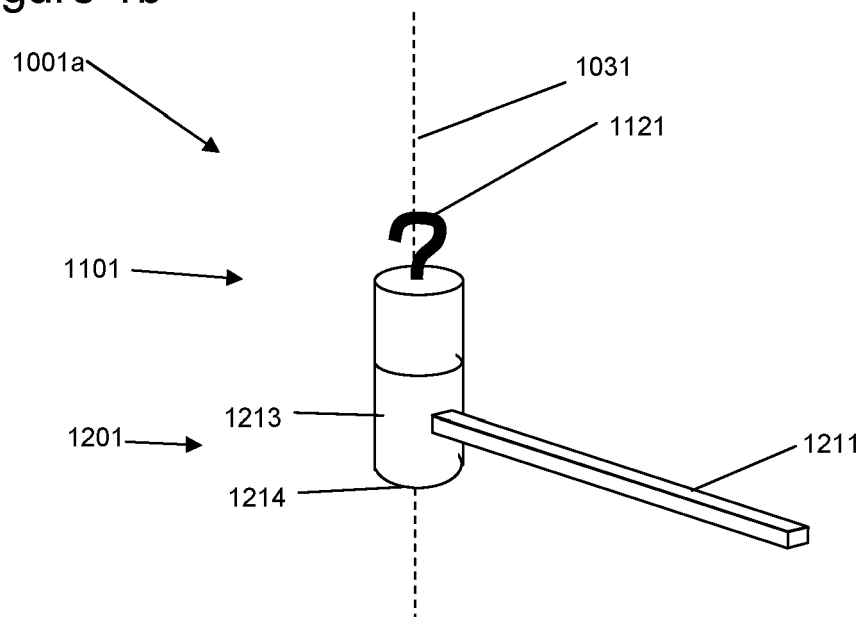


Figure 1c

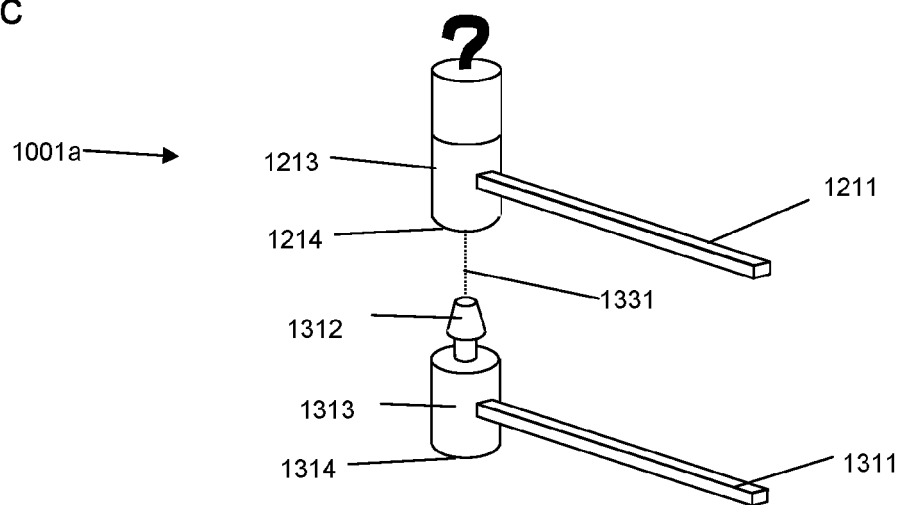


Figure 1d

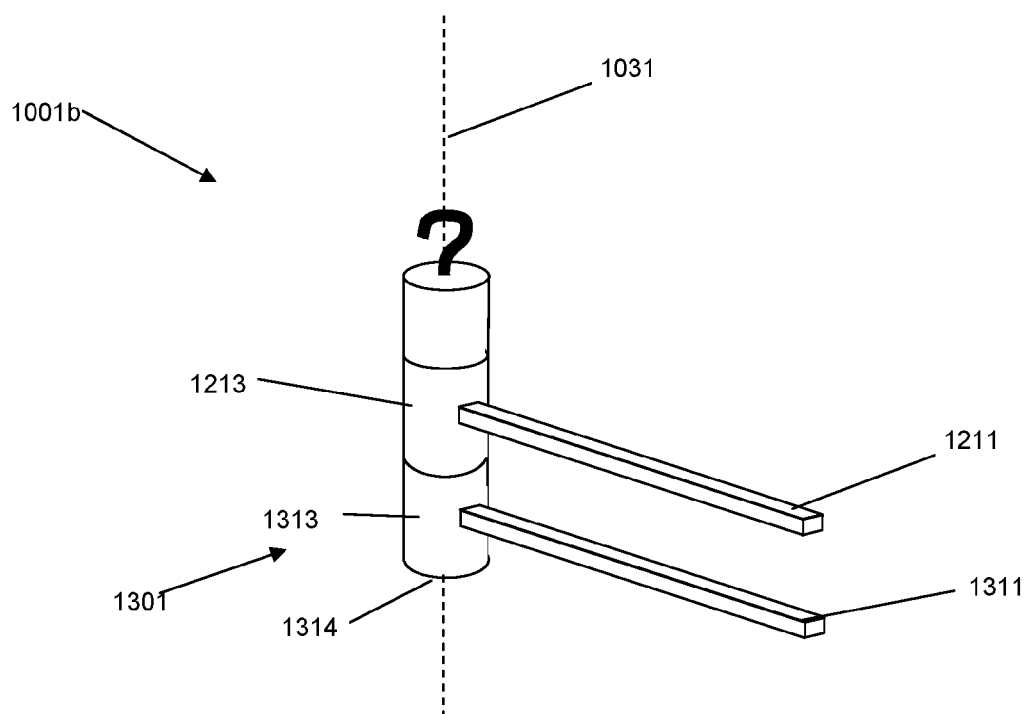


Figure 1e

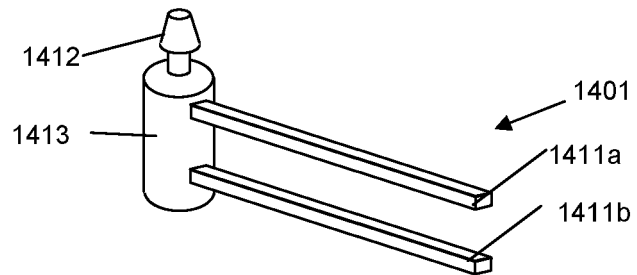


Figure 1f

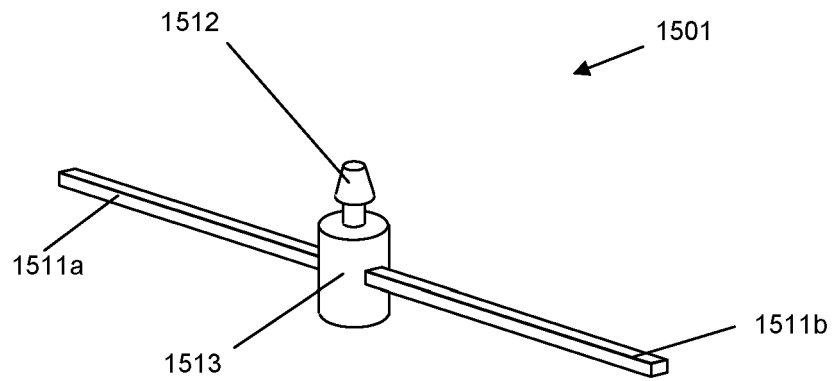


Figure 1g

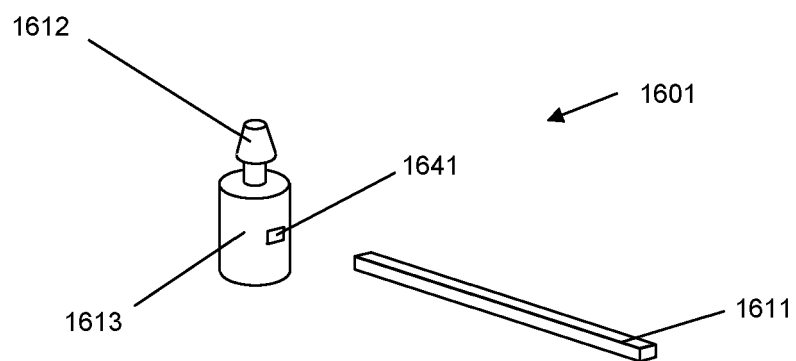


Figure 2a

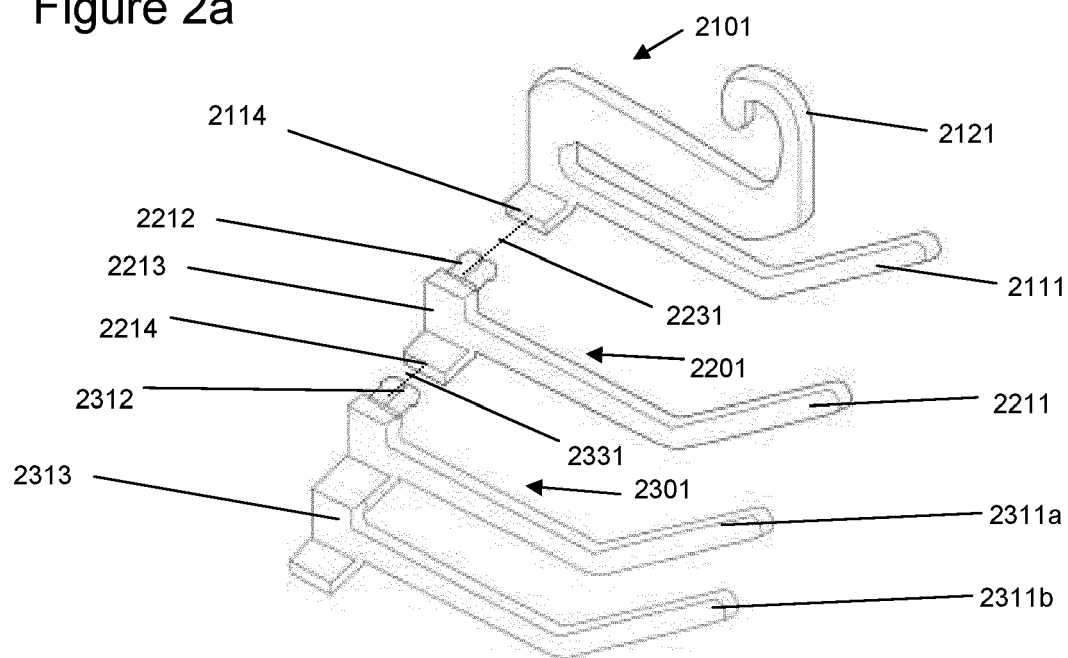


Figure 2b

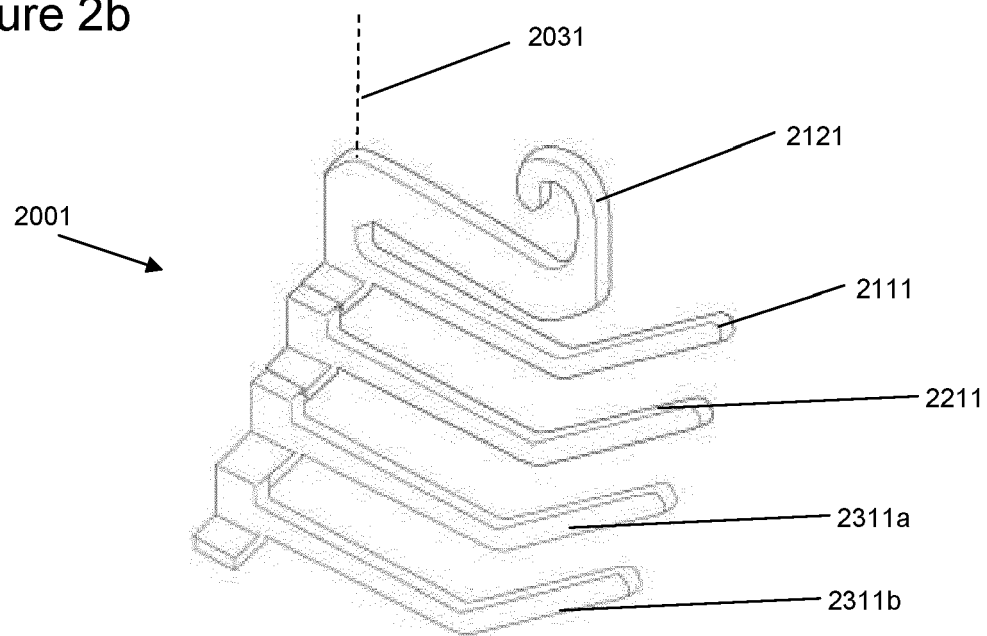


Figure 2c

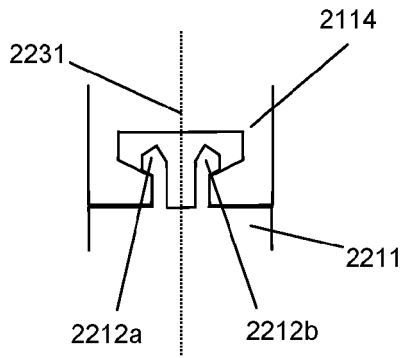


Figure 2d

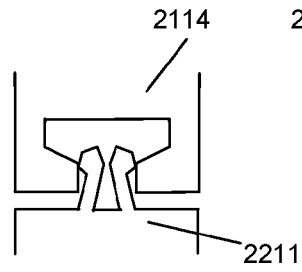


Figure 2e

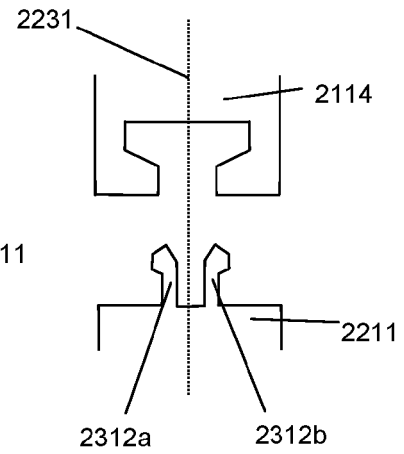


Figure 3a

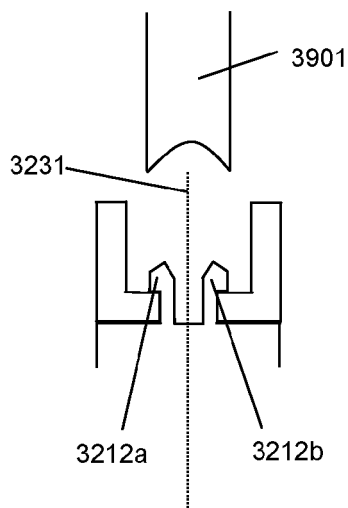


Figure 3b

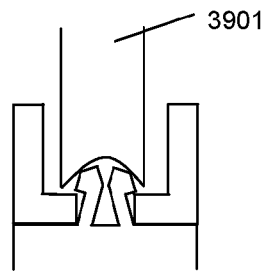


Figure 3c

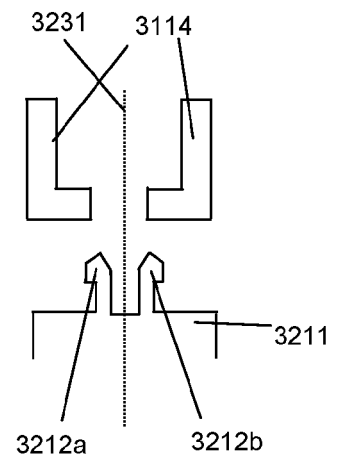


Figure 4a

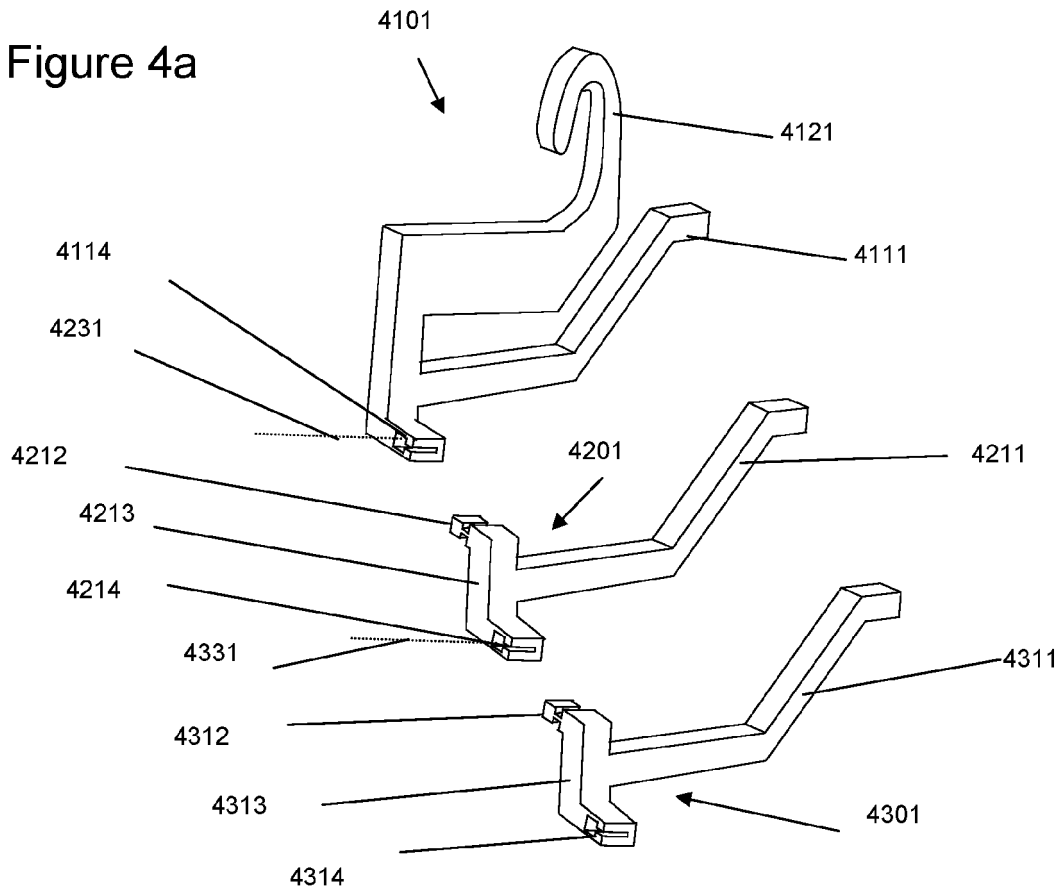


Figure 4b

