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(54) **GARMENT HANGER WITH COLLAPSIBLE HOOK**

(57) There is provided a garment hanger (10) comprising a body portion (12) on which a garment is hung, in use, and a hook portion (14), separably and pivotally attached to the body portion. The pivotable attachment allows the hook portion (14) to be moveable between a hanging configuration and a transport configuration. In the transport configuration, a mouth (18) of the hook portion is closed off by being brought adjacent to a corresponding part of the body portion (12). The separability of the hook portion (14) from the body portion (12) facilitates both manufacture and recycling of the component parts, because different materials can be used for those component parts. In the transport configuration, the risk of entanglement within the recycling stream due to the hooks is greatly reduced. Moreover, higher packing densities can be achieved when transporting the hangers.

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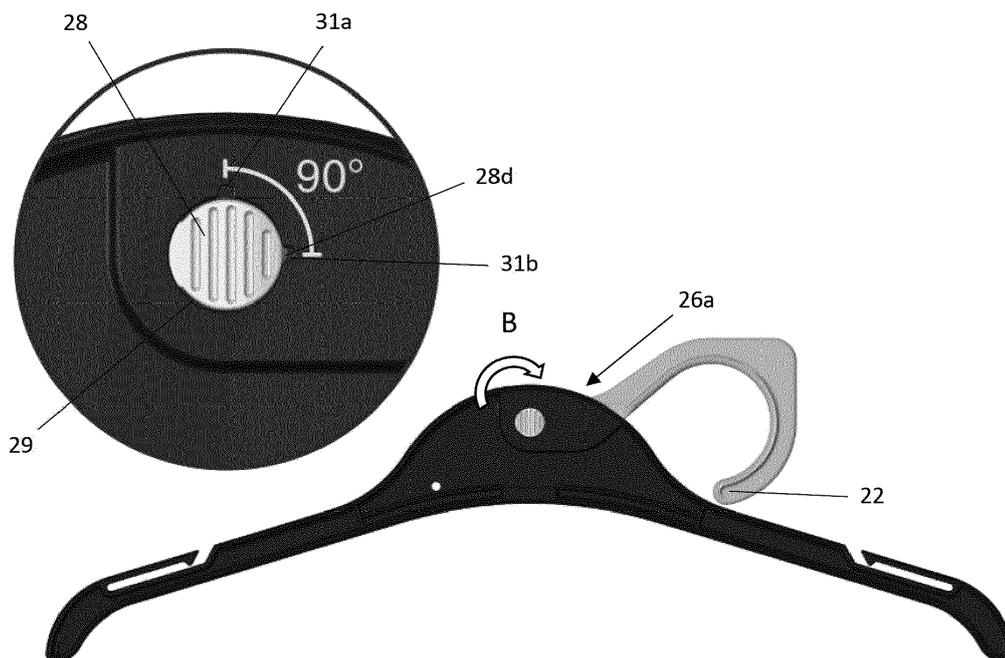


Fig. 5

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Description

[0001] This invention relates to garment hangers, in particular garment hangers made from recyclable materials and incorporating a foldable hook portion. The invention further relates to methods of use of such garment hangers.

BACKGROUND

[0002] Garment hangers are used to display garments in retail environments, such as on hanging rails or other shopfitting displays. A typical garment hanger 100, examples of which are shown in Figures 1a and 1b, comprises a body portion 102, having at least one support portion 104 on which a garment may be supported, and a hook portion 106 attached to an upper part of the body portion for hanging the garment hanger on a rail or the like, for storage or display.

[0003] Increasingly, garment hangers are at least partially made from recyclable materials, and re-used to avoid being sent to landfill after first use and to help in meeting retailers' sustainability targets. For example, plastic-bodied garment hangers are well known. Also, fully plastic garment hangers, such as those with integrally moulded body and hook portions are well known. The plastic within such hangers can be granulated into pellets (for subsequent re-sale or re-moulding) at a recycling centre.

[0004] When a customer has selected a garment to purchase, they typically take it to a point of sale within that retail environment to make that purchase. In many specialist clothes retailers, the point of sale will include a collection area dedicated to the collection of hangers which have been removed from the item of clothing at the point of purchase so that the hangers can be collated together to be sent for re-use or recycling in batches. The collection area typically comprises one or more bulk containers or bins. Such bins can be removed from the point of sale area once full so that the hangers within can be despatched by the retailer to a specialised hanger re-use and recycling centre. A bulk container typically contains a jumble of different types of hanger. The specialised hanger re-use recycling centre is equipped to sort the jumble.

[0005] For retailers that do not just specialise in selling clothes, for example the major grocer supermarket or hypermarket stores, where clothes may be sold alongside foodstuffs, household items, and the like, there are typically a great number of individual till points and self check-out stations which typically do not each have enough space to accommodate such bulk containers for collecting hangers at the point of sale, so it is impractical to collect and send the hangers off for re-use or recycling in bulk as described above; although some attempts are made, the volume recovered is low in comparison. Accordingly, in these mixed retail environments, the customer typically takes the hanger home with them and the

onus for it being recycled falls on the customer. The hanger may be used in the home, for example to store the associated garment in a wardrobe. However, even so, the hanger will reach an end of useful life, and consumers are encouraged to recycle where possible, so the used hanger may be deposited in the household recycling collection.

[0006] Household recycling systems are not set up for specialised recycling of garment hangers. In a typical household recycling stream, the household puts out one or more recycling bins for kerbside collection by the local authorities on a weekly or bi-weekly basis. There may be separate bins for different materials, but typically a whole assortment of different materials and item types will be jumbled together in a bin. By way of example, a polypropylene (PP) garment hanger may be deposited in a plastics recycling bin alongside HDPE bottles, PET yoghurt pots, assorted packaging, etc, or even in a single bin together with other materials such as glass and metals, for sorting downstream.

[0007] The hook portions of garment hangers may become entangled with other items in the recycling stream: in the collection bins, in the collection lorries, and at a recycling plant. More importantly they may also become entangled with or stuck in recycling equipment at the plant, leading to jams, break-downs and delays.

[0008] One known way to address this problem has been to provide garment hangers having a removable hook portion that the end-user is instructed to detach from the main body portion of the hanger before placing those separated parts into the recycling stream. It has been found, however, that the separated hook portions themselves can cause problems in the recycling stream for example by becoming entangled with other items or by becoming stuck in or falling through the recycling equipment.

[0009] It is also known to provide garment hangers that can be folded to a more compact configuration, for example for travelling. Examples of such hangers include ones in which a hook portion can be folded relative to a body portion, but about a hinge axis parallel to the plane of the body portion so that the hook portion overlies the body portion when folded. A mouth of the hook portion remains open and thus free to catch and entangle.

[0010] Garment hangers that include a hook portion that pivots about an axis perpendicular to a plane defined by the body portion are also known, for folding to a more compact configuration for transport. However, prior such arrangements have had the hook portion permanently and irremovably attached to the body portion. Some have also included delicate structures requiring relatively complex mouldings.

[0011] It is an objective of aspects of the invention to mitigate these disadvantages.

BRIEF SUMMARY OF THE DISCLOSURE

[0012] In accordance with a first aspect of the present

invention there is provided a garment hanger, comprising: a body portion on which a garment is hung, in use; and a hook portion, wherein the hook portion is separably and pivotably attached to the body portion.

[0013] Advantageously, the hook portion may thus be pivoted when attached to the body portion, to be movable between a first position and a second, more compact position, which may be beneficial for transport purposes due to a greater packing density, and may also prevent entanglement issues during recycling of the hanger after use. Moreover, because the hook portion can be separated from the body portion, recycling is facilitated and, because the hook portion and the body portion are two distinct components, those components may be manufactured separately, for example from different materials. This may be advantageous in allowing greater manufacturing efficiencies, as described below. Advantageously, through removing the hook portion from the body portion, for example at a recycling facility, at least the body portion can be passed further downstream through a recycling system with a greatly reduced likelihood of becoming entangled because the hook portion no longer protrudes therefrom. Preferably, the hook portion may also be passed through the recycling system, the risks of entanglement being much reduced having been separated from the associated body portion. Alternatively, such hangers may be sent to a re-use facility for separation and sorting of the component parts there, where they can be inspected and, if in good condition, be reused by re-assembling by attaching a suitable hook portion to a body portion, ensuring the hook portion is rotated towards the body portion into compact form for transportation out to be re-used, e.g. at a garment manufacturer.

[0014] Having the hanger comprised of two separate components means they may also be shipped from the manufacturer or re-use facility in disassembled form for assembly further down the supply chain, for example at a garment manufacturer. A greater packing density can be achieved by not having the hook portions protruding from the associated body portions. It may, however, be preferable to assemble the hangers at the original manufacturer or re-use facility and to transport the hangers with the hook portions pivoted to more compact configuration.

[0015] The hook portion is typically pivotable between a hanging configuration, in which it is oriented substantially vertically relative to a horizontal orientation of the body portion, and a transport configuration, in which it is oriented substantially horizontally. The pivot is thus about an axis that is perpendicular to a plane defined by the body portion. Preferably, the hanger further includes detent features to retain the hook portion in either or both of the hanging configuration and the transport configuration until a sufficient rotational force is applied to pivot the hook portion relative to the body portion. A detent may thus be provided for securing the hook portion in the hanging configuration. A detent may also or instead be provided for securing the hook portion in the transport

configuration

[0016] The separable attachment of the hook portion to the body portion may be via a (snap-fit) mating tab/slot interconnection, whereby the hook portion may be removed from the body portion by pressing the tab to release the connection. This is an intuitive and easy to understand and to operate mechanism. Preferably, the tab/slot interconnection comprises a resiliently deflectable finger on the tab being received in a corresponding window in the slot. The finger typically includes a free end and a root end where it connects to the tab, which is preferably at a lower end of the hook portion, opposite to the hook itself. The slot may be formed between a portion of a front face wall of the body portion and an inner wall thereof and is preferably provided on an upper end of the hanger body. Preferably, the button includes a tapered surface towards its lower end so that it is urged to deflect inwardly under a camming action as the hook portion is inserted into the corresponding slot from above.

[0017] The resiliently deflectable finger is typically in the form of a generally circular button 28, and is received in a correspondingly circular window formed in a side of the slot. As such, the tab/slot arrangement not only provides the removable interconnection between the hook portion and the body portion, but also provides that the connection is pivotable.

[0018] In certain embodiments, the removal may be achieved by directly pressing with a finger or thumb on the deflectable button on the tab. In certain other embodiments, the arrangement is such that removal by a simple finger press on the deflectable button on the tab is not readily achievable; rather, the removal would typically require the use of a tool.

[0019] At least the body portion and optionally also the hook portion may be formed of a recyclable material. The recyclable material may comprise a mouldable thermoplastics material, typically comprising polypropylene. By being formed of a mouldable material, the hangers may be formed by moulding, thus to be manufactured quickly and efficiently using existing techniques and plant. Polypropylene is readily recyclable through existing recycling systems, including those handling household recycling. The invention is particularly applicable to such hangers, which are the type typically used for clothes in the non-specialist retailers as described above, or specialist retailers that simply don't have the space or time at till point to remove the garment hangers, and which are fully recyclable through a household recycling system. However, it should be appreciated that the hanger could in some embodiments be made of new or non-recyclable material. By having the mating tab/slot interconnection formed at an upper end of the body portion, for insertion of the hook portion into the slot from above (i.e. not requiring the hook itself to pass through any part of the body portion, the insertion (and removal) is simple and intuitive and the mouldings for the body portion and the hook portion can be simple, robust and easy to manufacture.

[0020] At least the body portion may be formed from

wholly recycled materials. Whereas at least 30 percent recycled materials is an option, it would be preferable to use 100 percent recycled materials. Optionally, the hook portion is also formed from wholly recycled materials, such as polypropylene. Thus, the entire garment hanger may be manufactured from wholly recycled materials, and may form a self-contained cycle; materials for manufacture of new hangers being wholly supplied from recycled hangers.

[0021] The garment hanger may further comprise recycling instructions on a surface thereof, such as on a rear surface of the body portion. The instructions may, for example, be printed, engraved or moulded on the surface. This provides a clear and integral indication to an end user of how to recycle the garment hanger - by pivoting the hook portion towards the body portion to the more compact, transport configuration.

[0022] The hook portion may be formed of a material that is of a different colour to the body portion. The hook portion may be of a single solid-colour. The different colour of the hook portion may thus denominate a size of a garment to be displayed on the hanger, known in the industry as colour for size (CFS), such that the hook portion itself may function as a size marker. There is thus no need for a further, discrete, removable size marker, such as those of the prior art located at a neck portion of a hanger. Moreover, because the entire hook portion is coloured, the size indication thus provided is large and visually striking, more readily visible to customers, particularly from a top-down perspective. In certain embodiments, the hook portion may further include a size marker indication printed thereon. Thus, in addition to the size being denoted by the colour of the hook portion, another indication may be provided, such as a printed textual marker; e.g. selected from: XS, S, M, L, XL, XXL, etc. This provides a clear, unambiguous indication to the customer who may not at first be aware as to which size is denoted by which colour of the respective hook portions.

[0023] The body portion may be grey. This is one particularly suitable option because it forms a clear contrast with an associated coloured hook portion, whilst also being readily handled at a recycling facility - in contrast to black materials, for example, which are currently difficult to handle due to being difficult to discern from the rest of the waste stream and from the black conveyors on which that stream is moved.

[0024] According to a second aspect of the invention, there is provided a method of use of garment hangers, comprising: displaying a garment on a garment hanger according to the first aspect in a retail environment; after the garment is purchased, removing the garment from the hanger; pivoting the hook portion towards the body portion; and placing the hanger in a recycling system. Thus, the hanger may readily be converted to its most compact form by simply rotating the hook portion to be transported, for example to a recycling or re-use facility, in a maximum possible packing density and without a protruding, open hook portion.

[0025] Where the garment hanger is pivotable between a hanging configuration, in which it is oriented substantially vertically relative to a horizontal orientation of the body portion, and a transport configuration, in which it is oriented substantially horizontally, the method may further comprise: initially transporting the hanger to the retail environment with the hook portion in the transport configuration; and pivoting the hook portion to the display configuration prior to displaying the garment.

[0026] The method may further comprise separating the hook portion from the body portion within the recycling system. The two component parts can thus be treated separately at a recycling or re-use facility. The separation may be done by trained personnel or using specialised equipment. The fact that the components can be separated means that they can be made from different materials, including materials of different colours and yet still be easily recycled or re-used.

[0027] A lifecycle of a garment hanger according to the invention may be made as environmentally friendly as possible: first being used for their primary purpose in displaying garments as best possible; then facilitating their recycling, particularly through a household recycling stream or a specialist re-use facility.

[0028] The recycled material from which the body portions are formed may be supplied from the recycling system into which the body portions are placed after use. Thus, a particularly advantageous aspect of this method is the completion of the circle: the materials from which new hangers are manufactured may be fully sourced from used, recycled hangers, or at least for the one to be fully offset by the other.

BRIEF DESCRIPTION OF THE DRAWINGS

[0029] Embodiments of the invention are further described hereinafter with reference to the accompanying drawings, in which:

Figure 1 is a representative view of a known moulded plastic garment hanger, showing body and hook portions thereof;

Figure 2 is a front elevation view of a garment hanger according to one aspect of the invention;

Figure 3 is a rear elevation view of the hanger of Figure 1, showing a separable and pivotable interconnection between a hanger body portion and a hook portion;

Figure 4 is a front elevation view of the hanger of Figures 2 and 3, shown with the hook portion thereof in a pivoted position;

Figure 5 is a rear elevation view corresponding to Figure 4, and including a detail view of the separable and pivotable interconnection;

Figures 6a to 6c are detail views of different stages of interconnection of the hook portion with the body portion of the embodiment of Figures 2 to 5, each including an enlarged cross-sectional detail;

Figure 7 is a front elevation view of a garment hanger according to another aspect of the invention;

Figure 8 is a rear elevation view of the hanger of Figure 7, showing an alternative separable and pivotable interconnection between a hanger body portion and a hook portion;

Figure 9 is a front elevation view of the hanger of Figures 7 and 8, shown with the hook portion thereof in a pivoted position;

Figure 10 is a rear elevation view corresponding to Figure 9, and including a detail view of the separable and pivotable interconnection;

Figures 11a to 11c are detail views of different stages of interconnection of the hook portion with the body portion of the embodiment of Figures 7 to 10, each including an enlarged cross-sectional detail;

Figures 12a to 12c are perspective cross sectional views of the different stages of interconnection of the hook portion with the body portion, each including an associated enlarged planar cross-sectional detail;

Figures 13a and 13b show, in enlarged cut-away views, an internal hook position locking mechanism in respective hanging and folded configurations, and Figure 13c shows a top plan detail of Fig 13b;

Figures 14a and 14b are respective front and rear detail views and showing a removable marker tag in position attached to the hook portion; and

Figures 15a and 15b are respective front and rear detail perspective views corresponding to Figures 14a and 14b showing the marker tag separated from the hook portion.

DETAILED DESCRIPTION

[0030] A garment hanger 10 according to an embodiment of the invention is described by reference to the accompanying Figures 2 to 6c. The hanger 10 comprises a body portion 12 and a hook portion 14 detachably connected thereto. The skilled person will appreciate that the illustrated form of the hanger 10 is merely one exemplary form and that the hook portion may take many different shapes and styles, although all generally hook-shaped to perform the function of supporting a garment from a rail or the like. Likewise, the shape of the body

portion 12 to which the hook portion 14 is connected may take many different forms depending on the type of garment for which it is intended to support and depending on style. As illustrated, the hanger 10 is a topwear hanger, having a body portion 12 of a type typically used for displaying a top. The skilled person will appreciate that the invention may equally be applied to any other form of hanger style, including, but not limited to those specifically suited to the display of: trousers (pants) & bottoms, suits and jackets, childrenswear, baby clothes, dresses, underwear, accessories (such as socks, scarves and gloves), and shoes. Such hangers may include cross-bars, clips and other retaining features. The hangers may be designed to display multiple garments from a single hook portion, such as a set of shirts or underwear.

[0031] The hook portion 14 includes a hook 15 that circumscribes a rail space 16 having a mouth 18, the mouth and rail space being sized for the hook 10 to be placed on a rail or the like for displaying or storing a garment or garments supported on the body portion of the garment hanger by passing the mouth 18 over the top of the rail in a conventional way.

[0032] The hook portion 14 has a proximal end 20 where it detachably connects to the body portion 12, and a free, distal end 22 on the other side of the mouth 18. As best seen in Figs 6a-c, the proximal end 20 includes a neck 23 and a male interconnection feature in the form of a tab 24 for releasable interconnection with a corresponding female slot 26 in the body portion 12. The tab 24 includes a resiliently deflectable finger 28 that is biased towards a raised position through the inherent properties of the materials from which it is formed. The deflectable finger is in the form of a generally circular button 28. The button includes a free end 28a and a root end 28b where it connects to the tab 24, as best seen in Fig. 6a. The slot 26 is formed between a portion of a front face wall 30 of the body portion and an inner wall 32, which includes a correspondingly circular window 29 into which the button fits when the tab 24 is fully inserted into the slot 26, thereby forming a pivotable connection between the hook portion 14 and the body portion 12.

[0033] The tab 24 may be inserted into the slot 26 by a simple push in the direction of the hanger body portion 12 (Arrow A; Figs. 6a and 6b). As the tab 24 enters the slot 26, the finger 28 deflects downwardly under a camming action against sides of the slot. The camming action is aided by the inclusion of a tapered surface 28c on the button, towards the root end 28b thereof. Once the button 28 has passed through the slot 26 to reach the window 29, it is free to deflect back to the raised position with an audible 'click' to lock the tab 24 into the slot 26 (Fig. 6c). In this connected position, the hook portion 14 is securely retained to the body portion 12. However, because of the circular shape of the button 28 and window 29 and because the slot 26 is open at its upper end and towards one side - slot extension 26a, the hook portion 14 is able to be rotated about an axis through the button 28, perpendicular to a plane defined by the body portion 12. As

such, the hook portion 14 can be pivoted (Arrow B; Fig. 5) from a vertical position, in which the neck 23 is in a vertical orientation as shown in Figs. 2, 3 and 6, to a horizontal position, in which the neck 23 is at about 90 degrees to the vertical and the free end 22 of the hook portion lies adjacent the body portion 12, as shown in Figs. 4 and 5. In the vertical position, the hanger is in a configuration suitable for hanging, e.g. for display on a rail, in the conventional manner. In the horizontal position, the hanger is in a more compact configuration suitable for transport. In the transport configuration, the mouth 18 of the hook portion 14 is closed off by the adjacent part of the body portion 12 against which it lies. Thus, it is difficult for the hook portion 14 to become entangled in other objects.

[0034] A detent mechanism is included to retain the hook portion 14 in either the hanging configuration or the transport configuration. In particular, in the embodiment of Figures 2 to 6c, the button 28 includes a nib 28d that projects from the free end 28a. The nib 28d is received in a first notch 31a at the top of the window 29 of the inner wall 32 when in the hanging configuration. When in the transport configuration, the nib 28d is received in a second notch 31b at 90 degrees to the first notch 31a to the right side of the window 29 (as viewed from the rear of the hanger, shown for example in Fig. 5). As a user urges the hook portion 12 to pivot relative to the body portion 14, the nib 28d is urged to deflect inwardly into the slot 26 and out of engagement with the respective notch 31a,b by virtue of the resiliently deflectable nature of the button 28. Once a predetermined force is exerted to release the engagement, the hook portion is free to rotate until the nib 28d reaches the other notch, where it will snap back under the resilience of the button and into engagement with that other notch. Whereas the embodiment as illustrated has the respective notches 31a,b at 90 degrees to one another and at a top and a side of the window 29, it will be understood that other arrangements are possible. For example, the angular separation of the two notches may be greater or less than 90 degrees, with a correspondingly larger or smaller range of rotation for the hook portion 14 relative to the body portion 12. The appropriate range of motion may be dictated by the shape of the hook and body portions 12,14, as well as the size of the slot 26 - in particular the slot extension 26a; the important consideration being to allow the free end 22 of the hook portion to be brought close to the top of the body portion 12 to effectively close off the mouth 18. Also, only a single notch may be provided, for securing the hook portion in the hanging configuration or alternatively for securing the hook portion in the transport configuration.

[0035] In an alternative arrangement (not shown) rather than having the detent mechanism comprising a nib 28d incorporated into the button 28 and having a notch or notches 31a,b formed contiguous with the circular window 29 that receives the button, the detent mechanism may be separate from the button and window. For example, a ridge may protrude from the rear surface of the

neck 23 of the hook portion, to be received in a corresponding aperture or apertures formed separately from the window 29 on the inner wall 32, wherein the resilience to respectively retain and release the ridge from engagement in the aperture(s) is provided by the inherent flexibility of the inner wall 32.

[0036] To separate the hook portion 14 from the body portion 12, a user presses on the button 28 to urge the free end 28a thereof downwardly out of the window to align with the slot 26. That frees the tab 24, ergo the hook portion 14, to be disconnected from the body portion 12 by pulling the hook portion 14 away from the body portion. The button 28 may be ergonomically adapted to be pressed by the finger or thumb of a user, for example being of a suitable size and having a resilience that can be overcome using finger strength alone so as to enable tool-free removal of the hook portion from the body portion. The skilled person will understand that other forms of snap-fit interconnection may be employed.

[0037] Advantages of aspects of the invention according to the first embodiment are particularly apparent when the hook portion 14 is of a single solid colour, and wherein the body portion 12 is of a contrasting monotone, such as a solid grey. The single solid colour of the hook portion 14 may thus denominate a size of a garment to be displayed on the hanger 10. The hook portion 14 thus itself functions as a size marker. There is thus no need for a further, discrete, removable size marker, such as those of the prior art located at a neck portion of a hanger. Moreover, because the entire hook portion 14 is coloured, the size indication thus provided is large and visually striking, more readily visible to customers within a retail environment, particularly from a top-down perspective.

[0038] In addition to the sizes being represented by the respective single-colour hook portions 14, a size marker indication (not shown) may also be printed on or otherwise marked on the hook portion.

[0039] Whereas in the foregoing the interconnection features have been described in terms of the hanger body portions including female interconnection features (the window 29, slot 26 and notches 31a,b) to mate with corresponding male interconnection features (the button 28 and nib 28d thereof) on the hook portion components, it will be understood that the male interconnection features could be provided on the body portion components instead, with the female interconnection features provided on the hook portion components, or any combination of the two. However, providing the female interconnection features on the body portion components may provide a cleaner, neater design. Other types of interconnection feature can also be envisaged.

[0040] Another embodiment of the invention is illustrated by reference to Figures 7 to 15b. The hanger 210 of this embodiment is broadly similar to the hanger 10 of the embodiment illustrated in Figures 2 to 6c, but has a modified interconnection between the body portion 212 and the hook portion 214. As such, like elements are

denoted by like reference signs, although prefixed with a '2'. The hanger 210 of this second embodiment also incorporates a removable size marker on the hook portion.

[0041] The hook portion 214 has a proximal end 220 where it detachably connects to the body portion 212, and a free, distal end 222 on the other side of the mouth 218. As best seen in Figs 11a-c and 12, the proximal end 220 includes a neck 223 and a male interconnection feature in the form of a tab 224 for releasable interconnection with a corresponding female slot 226 in the body portion 212. The tab 224 includes a resiliently deflectable finger 228 that is biased towards a raised position through the inherent properties of the materials from which it is formed. The deflectable finger is in the form of a generally circular button 228. The button includes a free end 228a and a root end 228b where it connects to the tab 224, as perhaps best seen in Figs. 11a and 12a. The slot 226 is formed between a portion of a front face wall 230 of the body portion and an inner wall 232, which includes a correspondingly circular window 229 into which the button fits when the tab 224 is fully inserted into the slot 226, thereby forming a pivotable connection between the hook portion 214 and the body portion 212.

[0042] The tab 224 may be inserted into the slot 226 by a simple push in the direction of the hanger body portion 212 (Arrow A; Figs. 11a and 11b; 12a and 12b). As the tab 224 enters the slot 226, the finger 228 deflects inwardly (arrow C) under a camming action against sides of the slot. The camming action is aided by the inclusion of a tapered surface 228c on the button, towards the root end 228b thereof. By way of example, the finger 228 may deflect inward by an angle of approximately 18 degrees in order to enter the slot 226. Once the button 228 has passed through the slot 226 to reach the window 229, it is free to deflect back to the unstressed, zero degree position with an audible 'click' to lock the tab 224 into the slot 226 (Figs. 11c and 12c; arrow D). In this connected position, the hook portion 214 is securely retained to the body portion 212. A face 228d of the button 228 is typically flush with the rear face of the inner wall 232 in this position. Because of the circular shape of the button 228 and correspondingly circular window 229, the sizes of which are selected for a snug fit, and because the slot 226 is open at its upper end and towards one side - slot extension 226a, the hook portion 214 is able to be rotated about an axis through the button 228, perpendicular to a plane defined by the body portion 212. As such, the hook portion 214 can be pivoted (Arrow B; Fig. 10) from a vertical position, in which the neck 223 is in a vertical orientation as shown in Figs. 7, 8, 11 and 13a, to a horizontal position, in which the neck 223 is at about 90 degrees to the vertical and the free end 222 of the hook portion lies adjacent the body portion 212, as shown in Figs. 9, 10 and 13b. In the vertical position, the hanger 210 is in a configuration suitable for hanging, e.g. for display on a rail, in the conventional manner. In the horizontal position, the hanger is in a more compact configuration suit-

able for transport. In the transport configuration, the mouth 218 of the hook portion 214 is closed off by the adjacent part of the body portion 212 against which it lies. Thus, it is difficult for the hook portion 214 to become entangled in other objects.

[0043] A detent mechanism is included to retain the hook portion 214 in either the hanging configuration or the transport configuration. In the embodiment of Figures 7 to 15b, the detent mechanism is separated from the button 228, in contrast to that described by reference to Figs. 2 to 6c. The detent mechanism of this embodiment comprises a cooperative pair of ribs 236 and grooves 238. The ribs 236 are positioned within the slot 226 on the body portion 212 and respectively project inwardly therein from the front wall 230 and inner wall 232. Each rib 236 is oriented vertically, and is situated adjacent to the tab 224 of the hook portion 214 such that a side edge 224a of the tab 224 is aligned with an edge of the rib 236 when the hook portion 214 is in the hanging configuration (Fig. 13a), thereby retaining the hook portion in that orientation relative to the body portion 212. The grooves 238 are on opposing front and rear faces of the hook portion 214, specifically across the tab 224 below the neck 223. When in the transport configuration, the ribs 236 are received in the respective grooves 238 (Figs. 13b and 13c).

[0044] As a user urges the hook portion 212 to pivot from the hanging configuration towards the transport configuration, the ribs 236 are urged to deflect outwardly due to a camming action with the side edge 224a of the tab 224 and the resilience of the walls 230, 232 on which they are located. Accordingly, once a predetermined rotational force is exerted on the hook portion 214, the engagement between the side edge 224a of the tab 224 and the ribs 236 is overcome and the hook portion is free to rotate until grooves 238 reach the vertical orientation and align with their respective ribs 236, at which point the ribs snap into engagement with the grooves 238 by virtue of the resiliently deflectable nature of the button walls 230, 232. Similarly, the user can overcome the engagement of the ribs 236 and the grooves 238 to rotate the hook portion back towards the hanging configuration. Whereas the embodiment as illustrated has the respective ribs 236 and grooves 238 at 90 degrees to one another in the hanging configuration, it will be understood that other arrangements are possible. For example, the ribs 236 need not be oriented vertically and the grooves 238 need not be perpendicular thereto in the hanging configuration, such that the range of rotation for the hook portion 214 relative to the body portion 212 may be greater or less than 90 degrees. Suitable changes would need to be made to the profile of the side edge 224a. As with the first embodiment of Figs. 2 to 6c, the appropriate range of motion may be dictated by the shape of the hook and body portions 212, 214, as well as the size of the slot 226 - in particular the slot extension 226a; the important consideration being to allow the free end 222 of the hook portion to be brought close to the top of the body portion

212 to effectively close off the mouth 218. Also, only a single rib and corresponding groove may be provided.

[0045] To separate the hook portion 214 from the body portion 212, a user presses on the button 228 to urge the free end 228a thereof inwardly out of the window 229 to align with the slot 226. That frees the tab 224, ergo the hook portion 214, to be disconnected from the body portion 212 by pulling the hook portion 214 away from the body portion. However, in contrast to the arrangement of the hanger 10 of the first embodiment of Figs. 2 to 6c, which is specifically adapted to be released by a simple press of a finger, for the hanger 210 the reduced sizes of the button 228 and corresponding window 229 (by way of example, a 6.0 mm diameter button 228 and a 6.25 mm diameter window 229) makes that ergonomically difficult, because a finger cannot typically assert enough pressure on the button nor be pressed far enough through the window in order to urge the button 228 to clear the window 229 to deflect fully into the slot 226. Moreover, the finger is stiffer than that of the first embodiment due to a resulting reduced effective lever from the root end 228b thereof. Also, the width of the root 228b can be selected to provide a desired stiffness to the finger. In conjunction, the arrangement is thus adapted specifically such that separation of the hook portion 214 from the body portion 212 is not typically achievable by direct manual pressure (e.g. a finger press) alone; rather, this is typically achieved through use of a suitable tool. This avoids potential inadvertent separation of the hook and body portions, but still allows their separation when desired, for example at a re-use or recycling facility.

[0046] As best seen in Figures 14 and 15, the hanger 210 of the second embodiment includes a removable size marker 250. The size marker 250 is located at an upper quadrant of the hook portion 214, generally opposite the mouth 218. The hook portion 214 includes a corresponding marker receiver portion 252 in the form of a thinned section 253 on a front surface of the hook, a recess 255 on a rear surface of the hook, and an aperture 257 passing through the hook at the thinned section 253 but outside of the recess 255. The size marker 250 has a generally flat front face 258 on which may be printed or affixed a size indicator. The size marker 250 also includes, on a rear side, a clip 260 to be received in the recess 255 by means of an open end 261, as well as a T-shaped tab 262 which is to be received in the aperture 257 by way of a snap-fit connection. To affix the size marker 250 to the hook portion 214, the tab 262 can be slid across the front face of the thinned portion 253 until the open end 261 of the clip 260 engages an outer edge 255a of the recess. Further sliding towards the mouth 218 results in the clip 260 fully engaging the recess 255 and the tab 261 snapping into engagement with the aperture 257. To release the size marker 250, the tab 261 is deflected out of the aperture 257 freeing the marker 250 to be slid off the receiver portion 252.

[0047] The size marker 250 may be formed, for example by moulding, of a single solid colour to thus denom-

inate a size of a garment to be displayed on the hanger 210. This colour-coded size indication may be in addition to or instead of a textual size indicator on the face 258.

[0048] Typically, such hangers 10, 210 as described above would be manufactured and assembled at a first site, then be packed into boxes for transport to a second site, for example a garment manufacturer, to load garments on to the hangers 10, 210. During transport, the hangers 10, 210 will be in the transport configuration to maximise the packing density for efficient transport. Alternatively, the hangers may be transported in separated form, for the hook portions 14, 214 to be attached to the body portions 12, 212 at the destination. Once garments have been loaded on to the hangers, these are then shipped to retail locations, optionally via a distribution network, e.g. using the known garment on hanger supply chain. Again, for most efficient packing, the hangers will be transported in the transport configuration. At the retail location, the hangers 10, 210, loaded with garments, will be unpacked and the hook portions 14, 214 rotated to the hanging configuration ready to hang on display rails or the like.

[0049] Once a garment has been purchased, either the retailer manages recycling of the hangers, for example by collecting a batch for return to a re-use or recycling facility, or the purchaser assumes responsibility, to eventually place the hanger 10, 210 into their domestic recycling system. In either situation, the hanger 10, 210 should be placed in the transport configuration prior to entering the recycling stream. To maximise the likelihood of an end-user (e.g. a retail customer or a till-point cashier) undertaking the necessary actions to put the hangers into the transport configuration as desired, instructions may be integrated into the hanger 10, 210 itself, for example in the form of embossed, engraved, printed or moulded text and icons (e.g. 240) on a surface of the body portion 12, 212.

[0050] At least the body portion 12, 212 and preferably also the hook portion 14, 214 of the hanger 10, 210 is typically manufactured of a recyclable material, such as a mouldable thermoplastic. Polypropylene is one exemplary material, but the skilled person will appreciate that the component parts of the hanger 10, 210 could instead be formed of many other materials. Certain advantages of the invention are particularly apparent when applied to a whole hanger in which both the hook portion 14, 214 and the body portion 12, 212 are manufactured from such a recyclable material, for example by injection moulding or blow moulding, because if made from a single recyclable material, they are more readily recycled than if the hook portion 14, 214 were to be made of a different material to the body portion 12, 212. At present, recycling streams that handle household recycling are more readily able to process polypropylene articles than those of other materials, such as polystyrene.

[0051] Once the hangers 10, 210 have reached an appropriate point of the recycling (or re-use) system, the hook portions 14, 214 can be separated from the body

portions 12, 212 for separate treatment. As discussed above, for the hanger 10, this is readily achieved in a tool-free manner by a user pressing on the button 28 with their finger or thumb. For the hanger 210, the reduced size of the button 228 and the added stiffness mean that separation of the hook portion 214 from the body portion 212 is not typically achievable by direct manual pressure (e.g. a finger press) alone; rather, this is typically achieved through use of a suitable tool.

[0052] A method of use of garment hangers 10, 210 thus comprises: displaying a garment on a garment hanger 10, 210 as described above in a retail environment; after the garment is purchased, removing the garment from the hanger 10, 210; pivoting the hook portion 14, 214 towards the body portion 14, 214, typically from a hanging configuration to a transport configuration; and placing the hanger 10, 210 in a recycling system.

[0053] In summary, there is provided a garment hanger 10, 210 comprising a body portion 12, 212 on which a garment is hung, in use, and a hook portion 14, 214, separably and pivotably attached to the body portion so as to be moveable between a hanging configuration and a transport configuration. In the transport configuration, a mouth 18, 218 of the hook portion is closed off by being brought adjacent to a corresponding part of the body portion 12, 212. The separability of the hook portion 14, 214 from the body portion 12, 212 facilitates both manufacture and recycling of the component parts, because different materials can be used for those component parts. In the transport configuration, the risk of entanglement within the recycling stream due to the hooks is greatly reduced. Moreover, higher packing densities can be achieved when transporting the hangers.

[0054] Throughout the description and claims of this specification, the words "comprise" and "contain" and variations of them mean "including but not limited to", and they are not intended to (and do not) exclude other moieties, additives, components, integers or steps. Throughout the description and claims of this specification, the singular encompasses the plural unless the context otherwise requires. In particular, where the indefinite article is used, the specification is to be understood as contemplating plurality as well as singularity, unless the context requires otherwise.

[0055] Features, integers, characteristics, compounds, chemical moieties or groups described in conjunction with a particular aspect, embodiment or example of the invention are to be understood to be applicable to any other aspect, embodiment or example described herein unless incompatible therewith. 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. The invention is not restricted to the details of any foregoing embodiments. 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.

[0056] The reader's 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.

Claims

1. A garment hanger, comprising:
 - a body portion on which a garment is hung, in use; and
 - a hook portion,
 wherein the hook portion is separably and pivotably attached to the body portion.
2. The garment hanger of claim 1, wherein the hook portion is pivotable between a hanging configuration, in which it is oriented substantially vertically relative to a horizontal orientation of the body portion, and a transport configuration, in which it is oriented substantially horizontally.
3. The garment hanger of claim 2, further including dent features to retain the hook portion in either or both of the hanging configuration and the transport configuration until a sufficient rotational force is applied to pivot the hook portion relative to the body portion.
4. The garment hanger of any preceding claim, wherein the separable attachment of the hook portion to the body portion is via a mating tab/slot interconnection, whereby the hook portion may be removed from the body portion by pressing the tab to release the connection.
5. The garment hanger of any preceding claim, wherein at least the body portion is formed of a recyclable material.
6. The garment hanger of claim 5, wherein the recyclable material comprises a mouldable thermoplastics material.
7. The garment hanger of claim 6, wherein the mouldable thermoplastics material comprises polypropylene.
8. The garment hanger of claim 6 or claim 7, formed by moulding.

9. The garment hanger of any preceding claim, wherein at least the body portion is formed from wholly recycled materials.
10. The garment hanger of any preceding claim, further comprising recycling instructions moulded into a surface thereof. 5
11. The garment hanger of any preceding claim, wherein the hook portion is formed of a material that is of a different colour to the body portion. 10
12. The garment hanger of any preceding claim, wherein the hook portion is of a single solid-colour, wherein the body portion is grey. 15
13. A method of use of garment hangers, comprising:
- displaying a garment on a garment hanger according to any preceding claim in a retail environment; 20
 - after the garment is purchased, removing the garment from the hanger;
 - pivoting the hook portion towards the body portion; and 25
 - placing the hanger in a recycling system.
14. The method of use of claim 13, when dependent on claim 2, further comprising: 30
- initially transporting the hanger to the retail environment with the hook portion in the transport configuration; and
 - pivoting the hook portion to the hanging configuration prior to displaying the garment. 35
15. The method of use of claim 14, further comprising: within the recycling system, separating the hook portion from the body portion. 40

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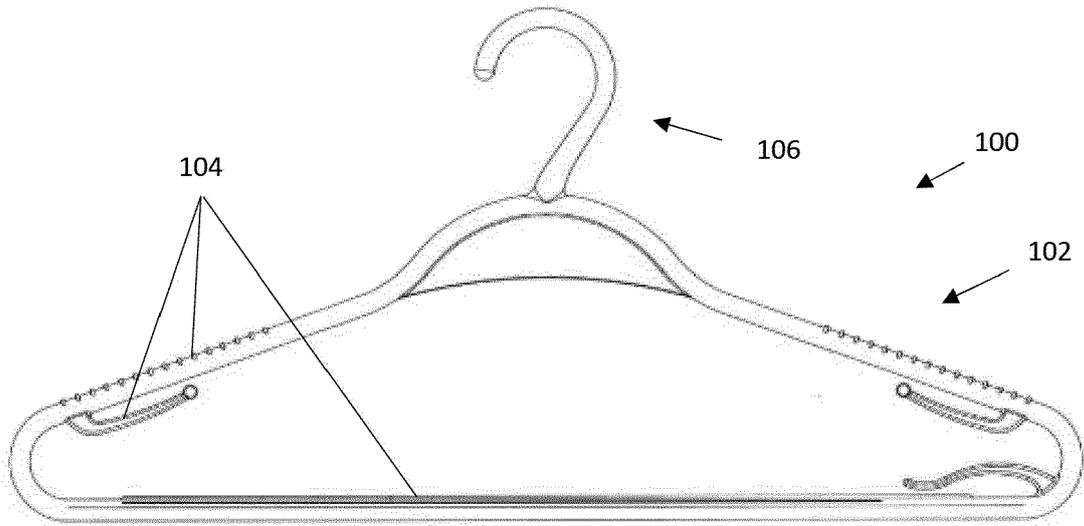


Fig. 1 (PRIOR ART)

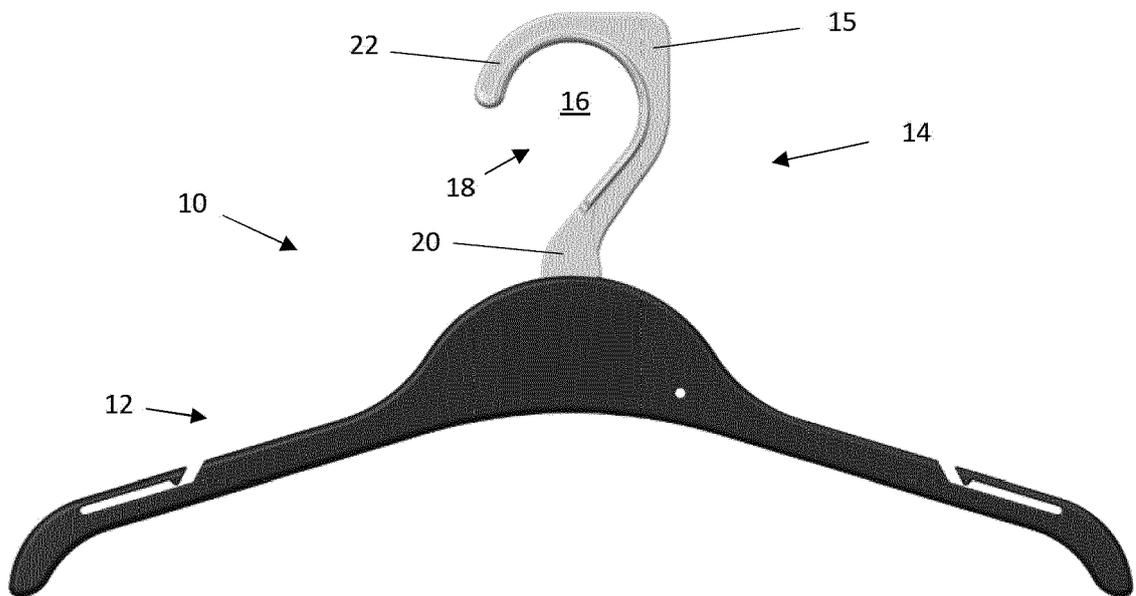


Fig. 2

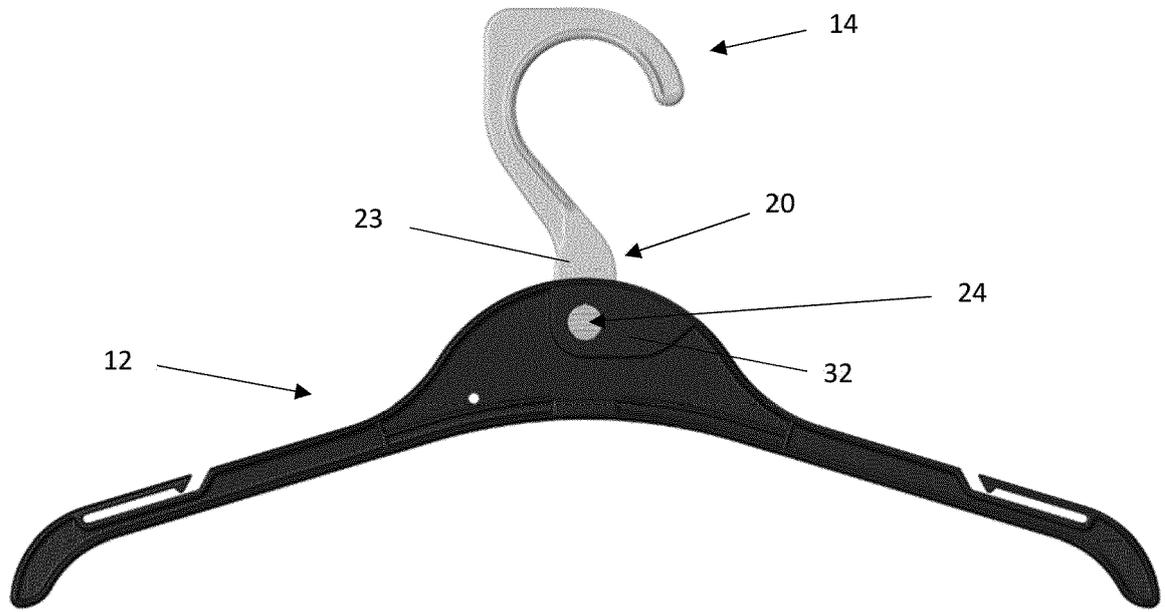


Fig. 3

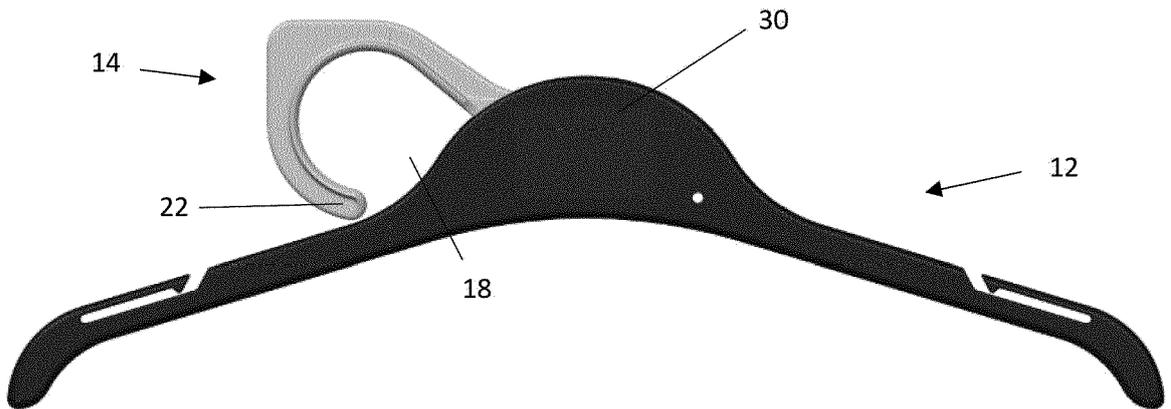


Fig. 4

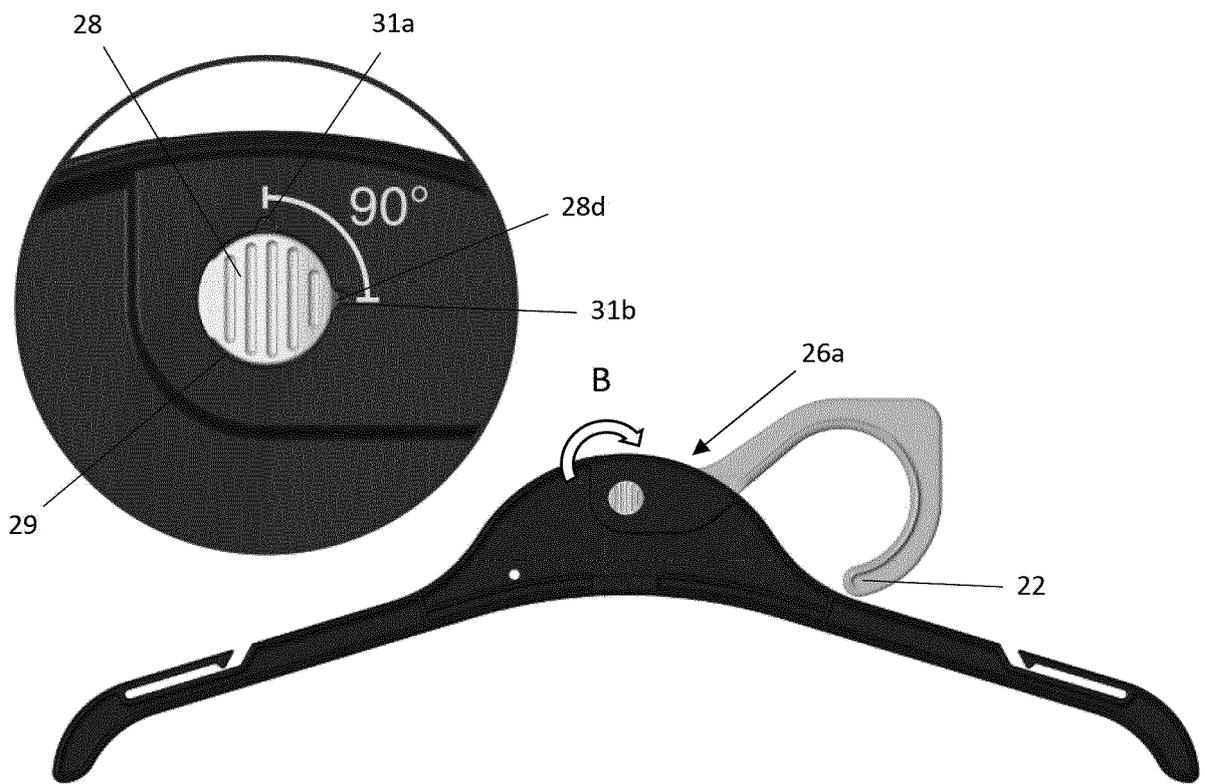


Fig. 5

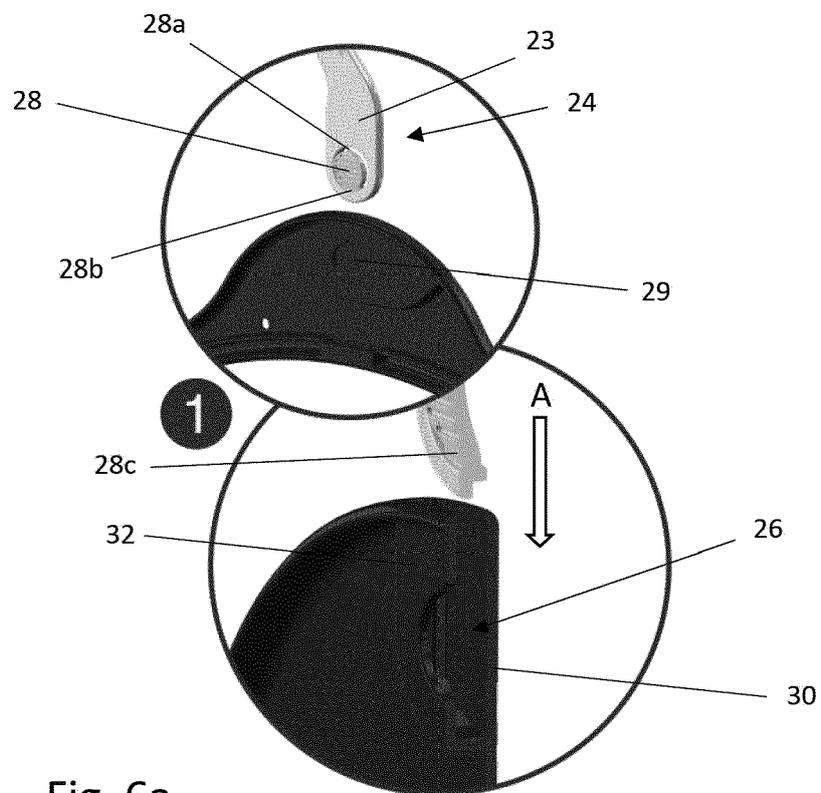


Fig. 6a

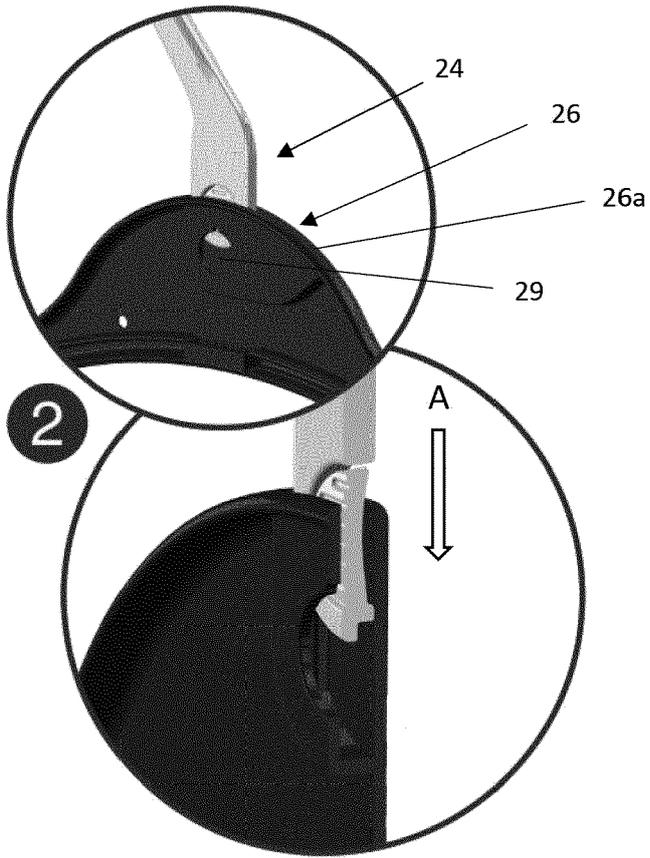


Fig. 6b

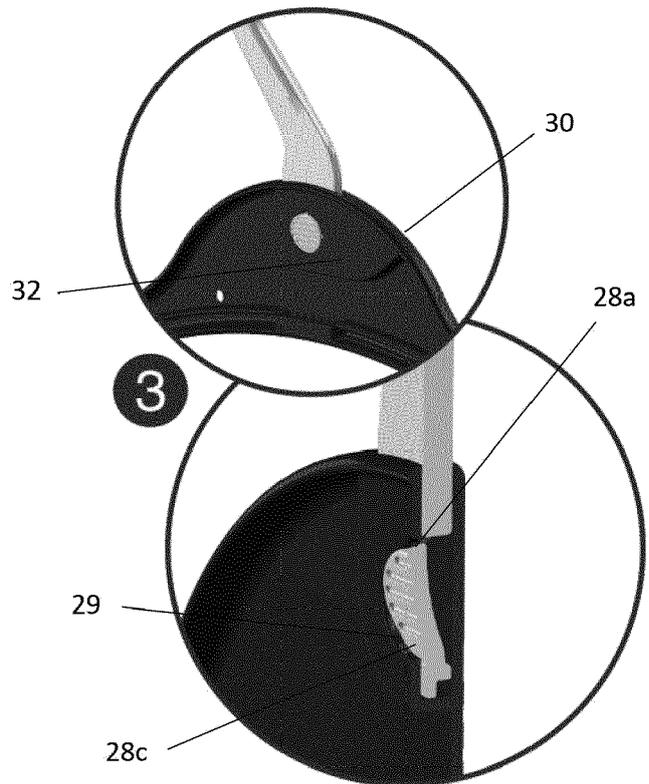


Fig. 6c

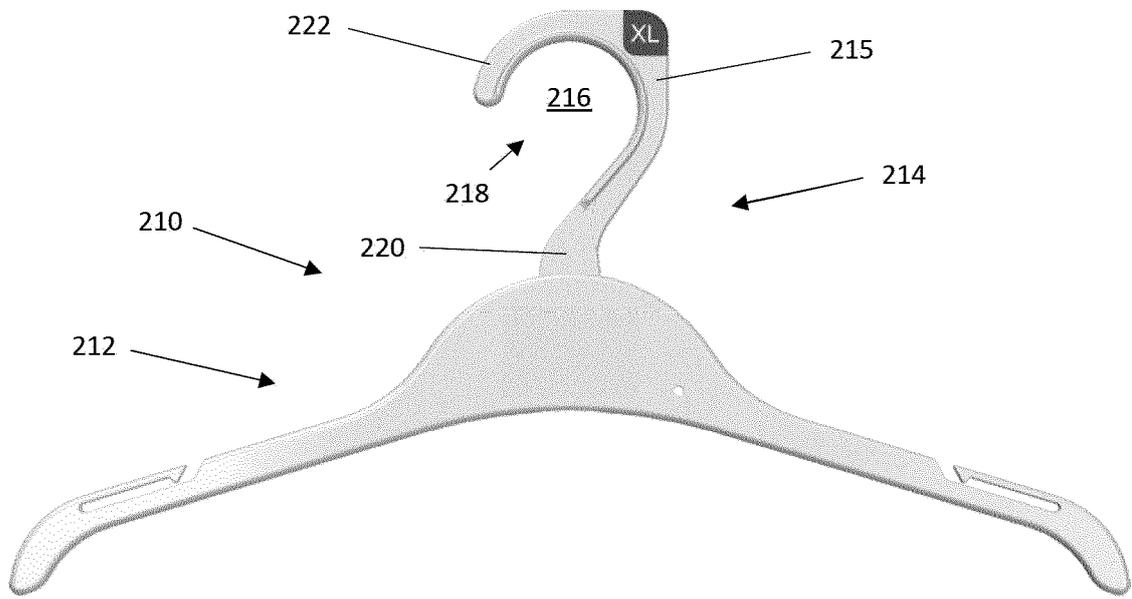


Fig. 7

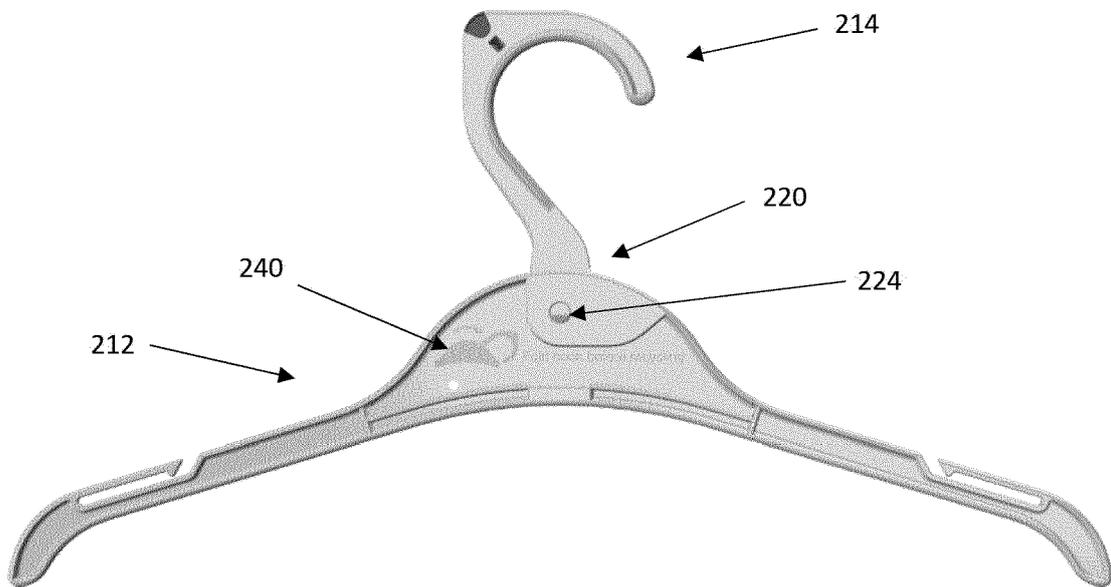


Fig. 8

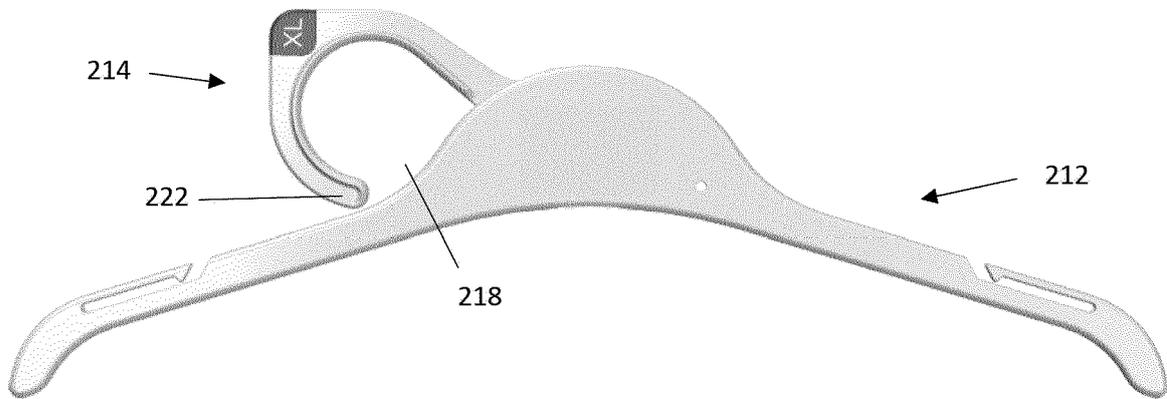


Fig. 9

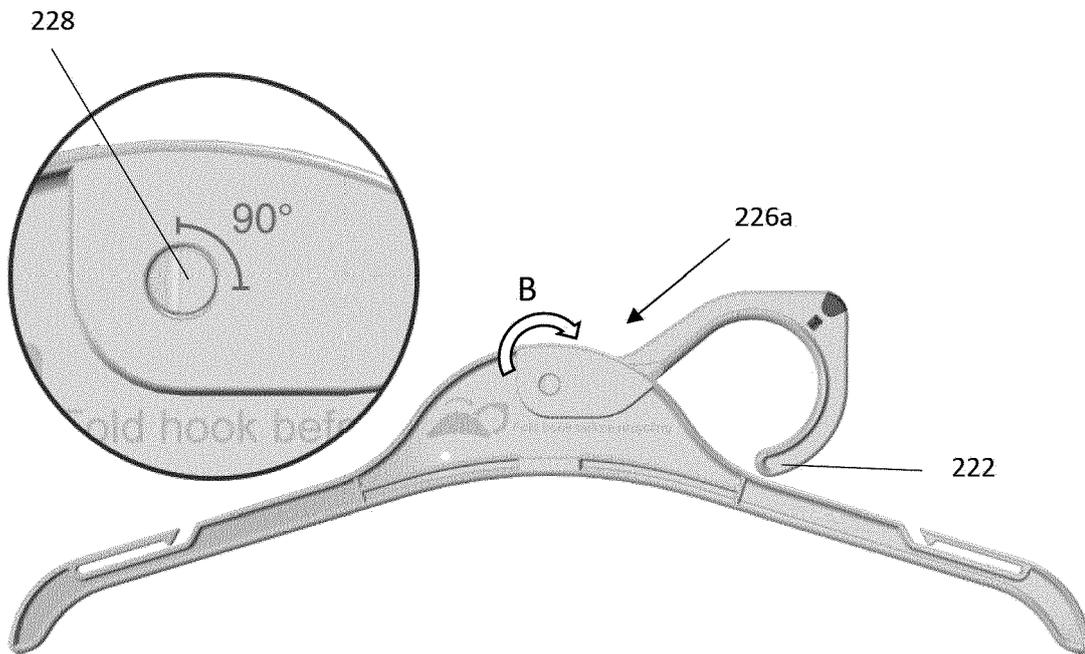


Fig. 10

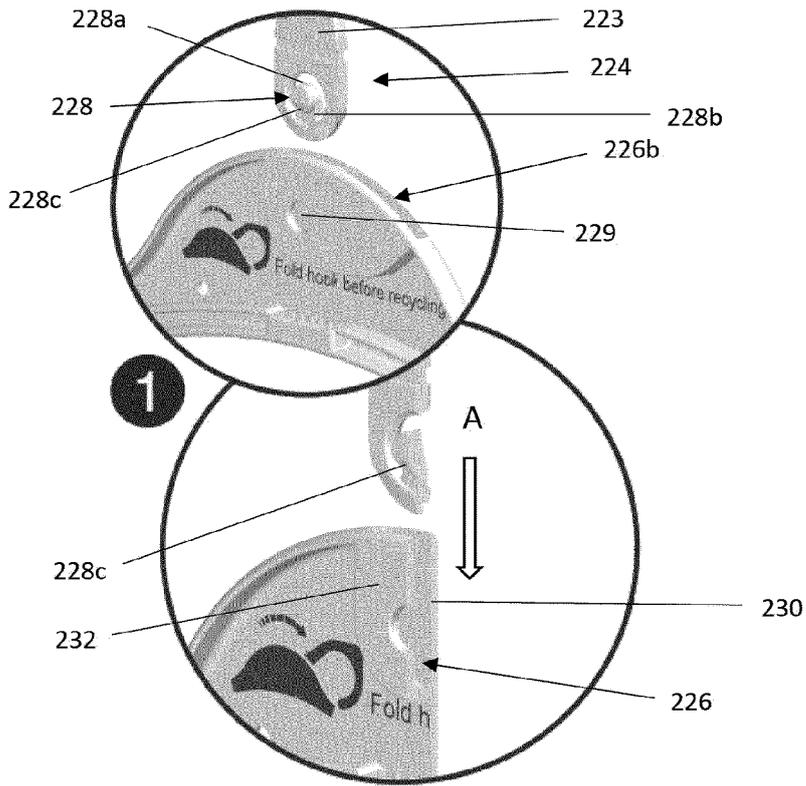


Fig. 11a

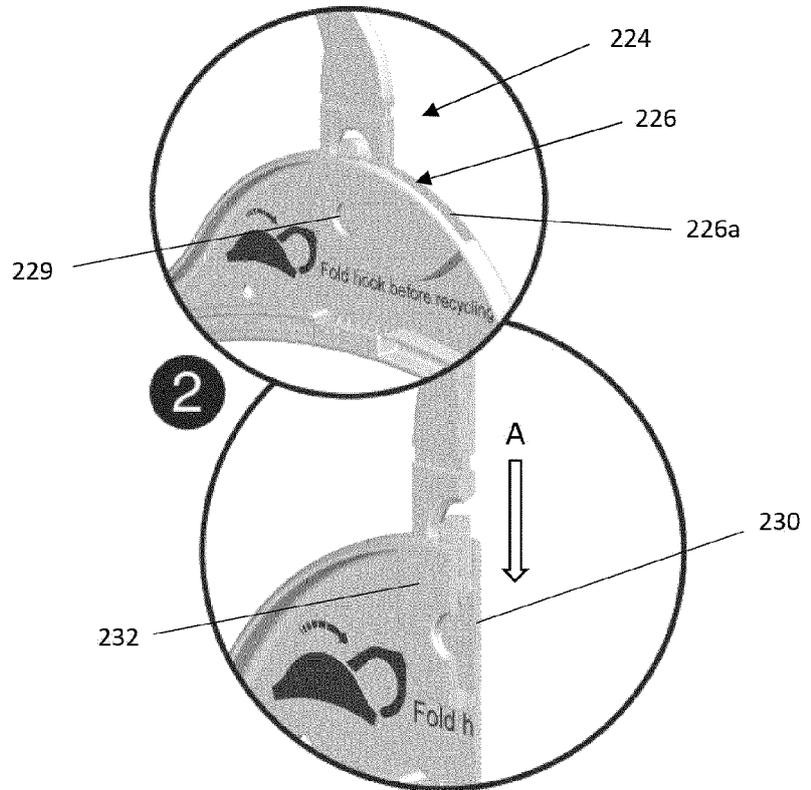


Fig. 11b

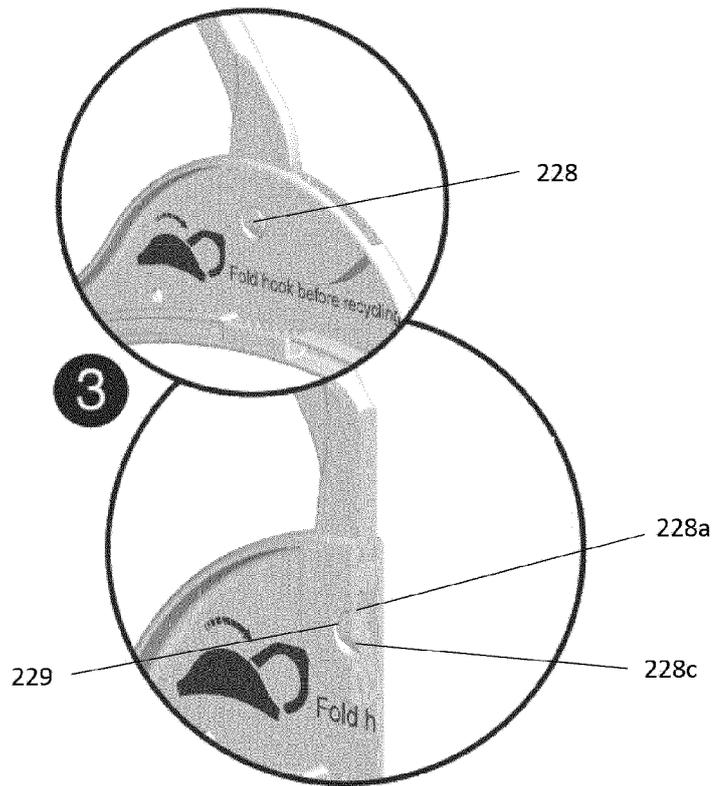


Fig. 11c

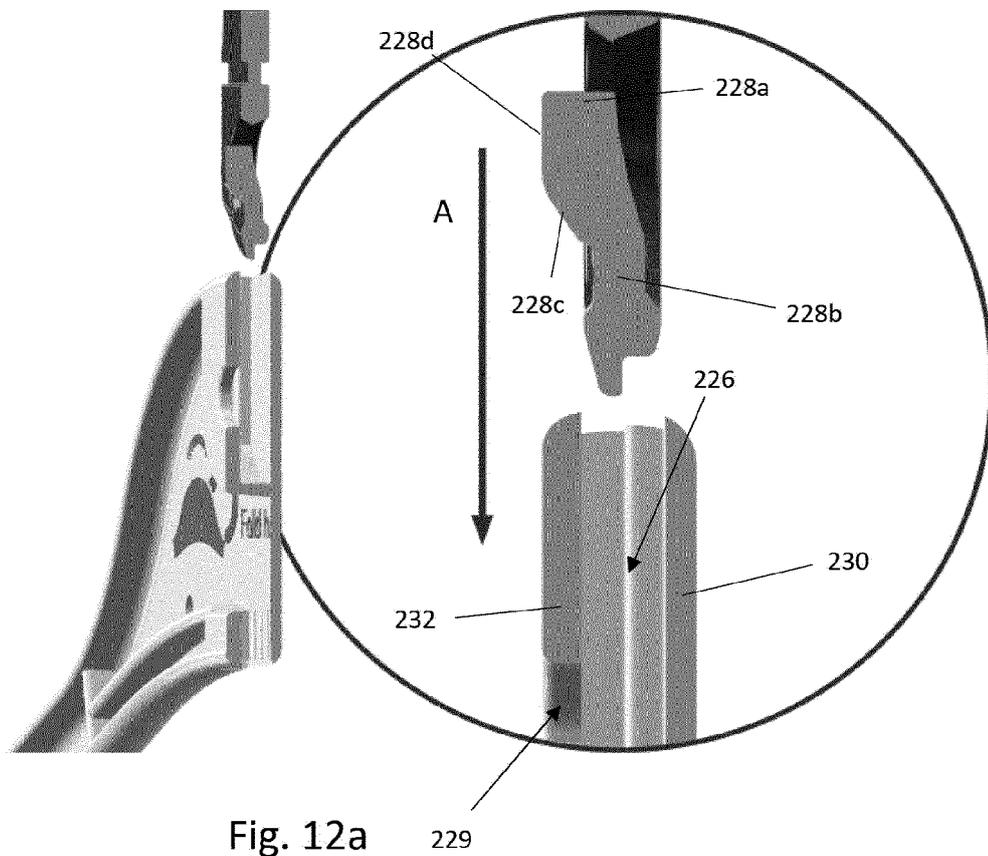


Fig. 12a

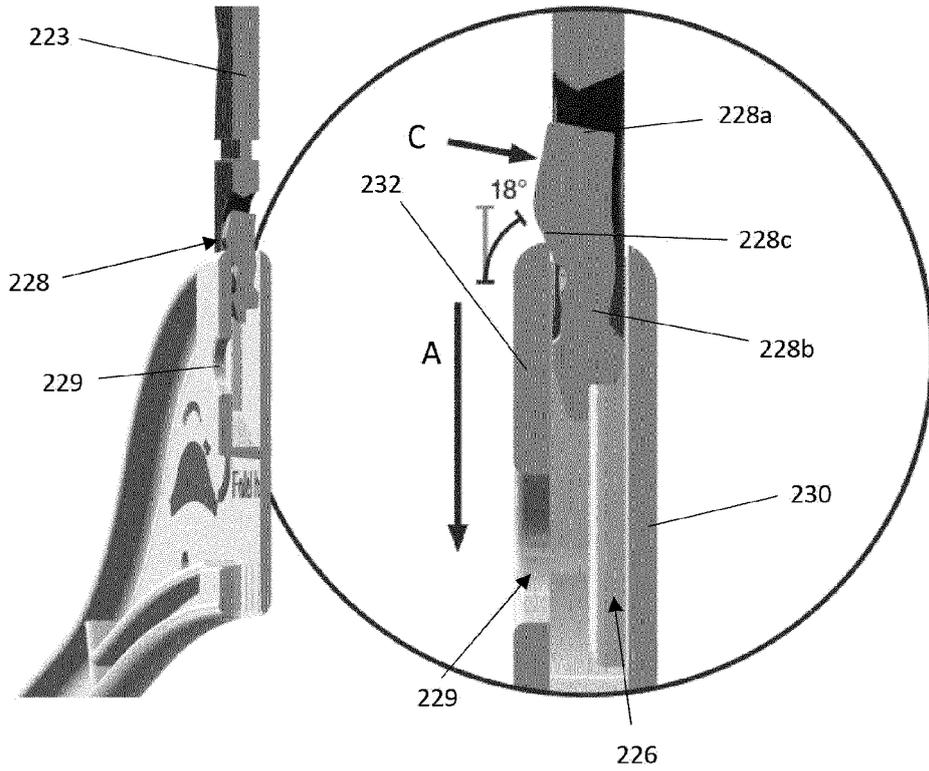


Fig. 12b

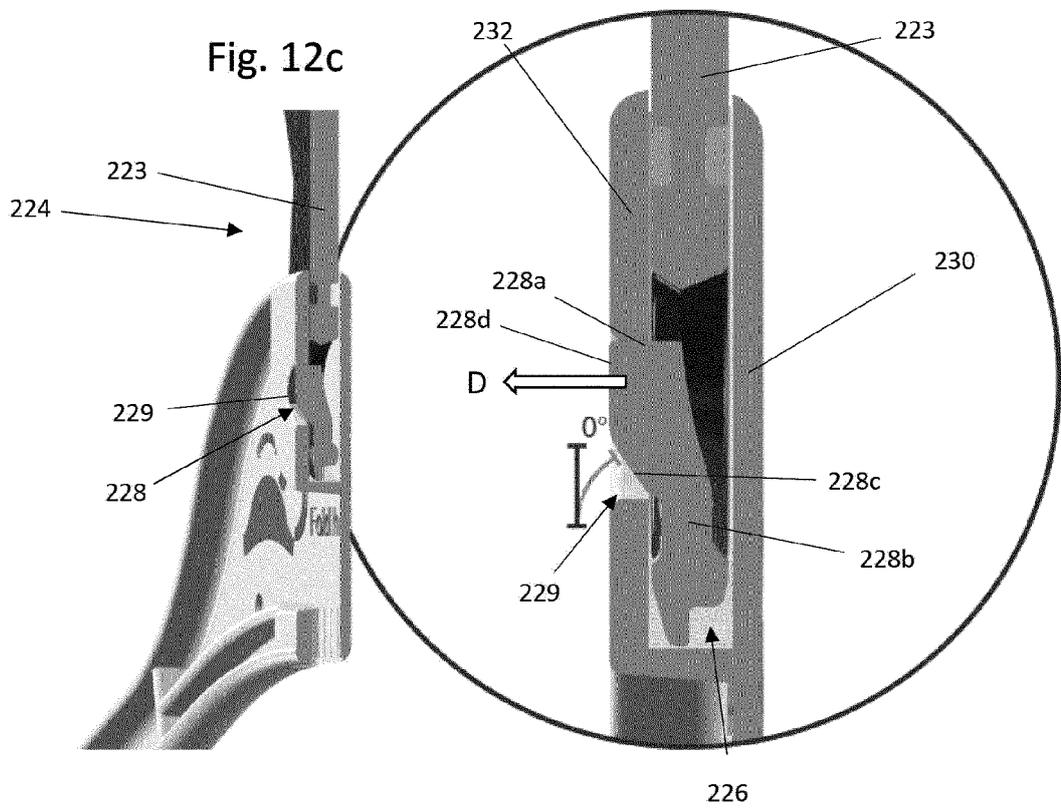


Fig. 12c

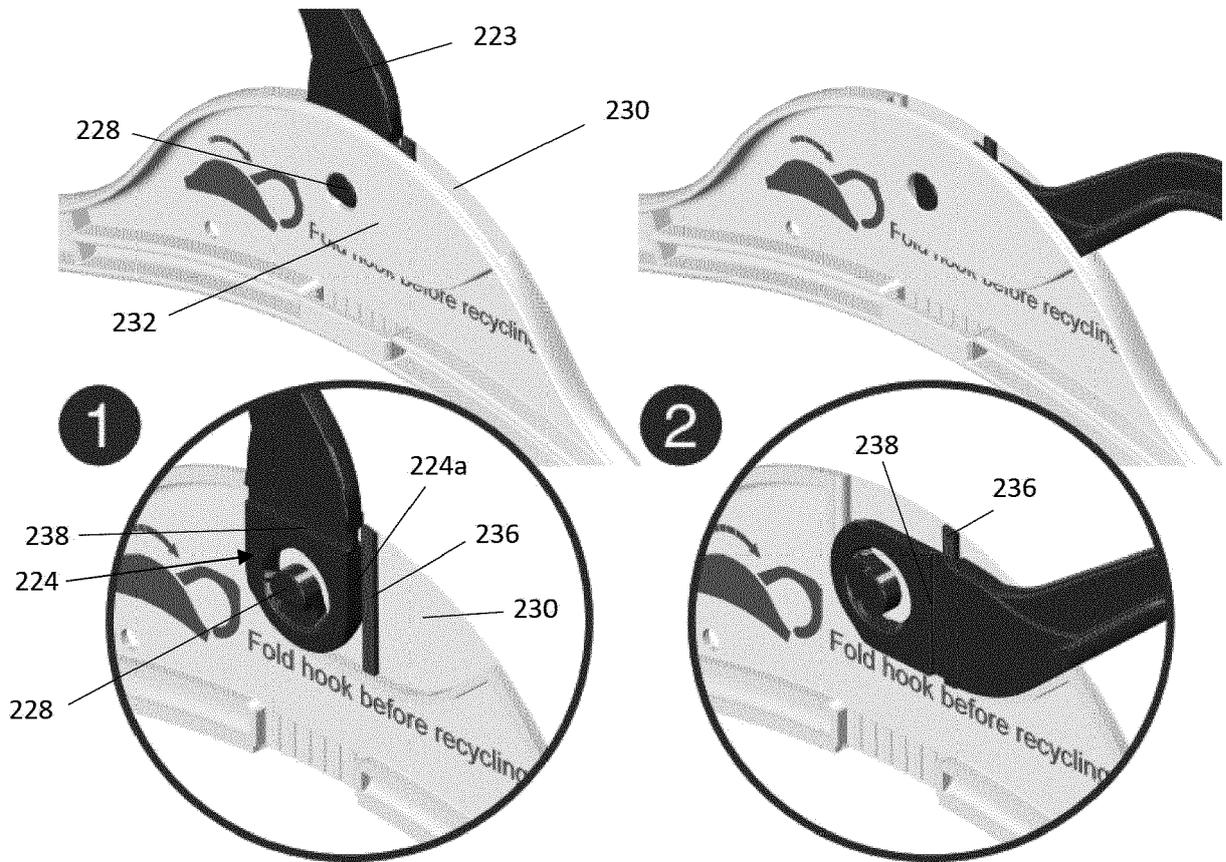


Fig. 13a

Fig. 13b

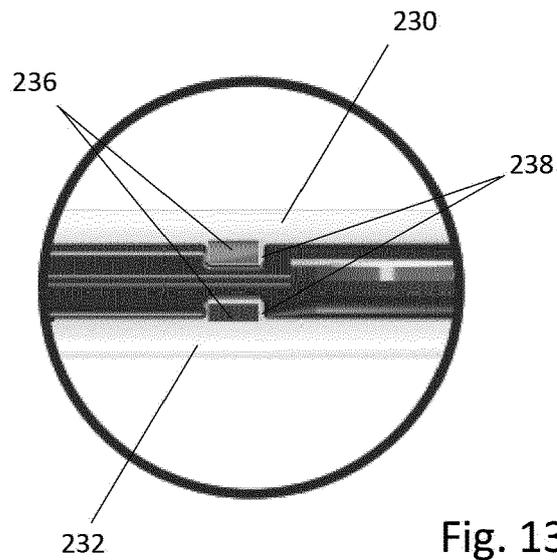


Fig. 13c

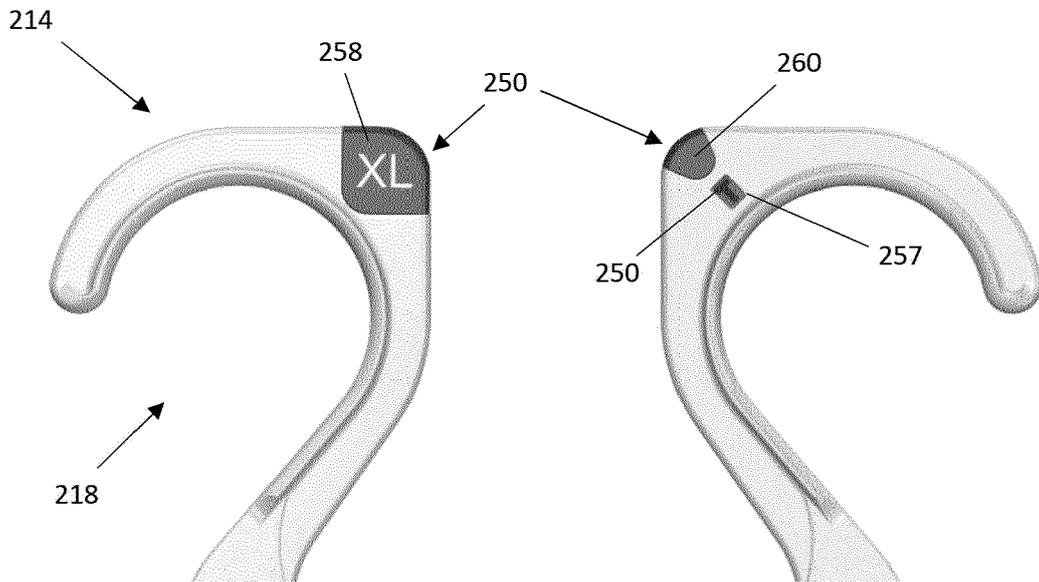


Fig. 14a

Fig. 14b

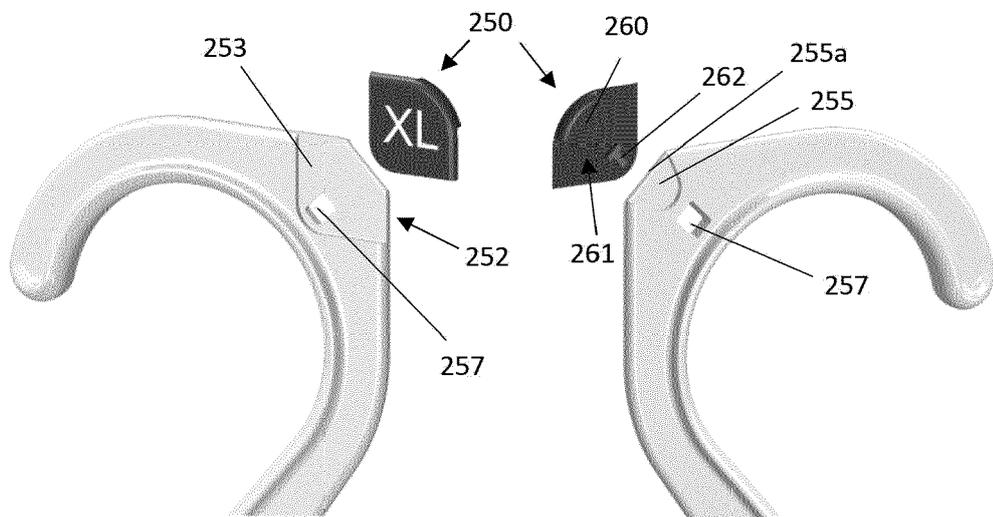


Fig. 15a

Fig. 15b



EUROPEAN SEARCH REPORT

Application Number

EP 22 20 1715

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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	GB 2 370 759 A (WOOD ALASTAIR [GB]) 10 July 2002 (2002-07-10) * page 1, paragraph 2-5 - page 2, paragraph 1; figures 1-3 * -----	1-14	INV. A47G25/32 A47G25/38 ADD. A47G25/40
X	US 10 729 264 B2 (UNIPLAST IND INC [US]) 4 August 2020 (2020-08-04) * column 3, lines 25,40-54 - column 4, lines 10-36,40-43; figures 1-9 * -----	1-15	TECHNICAL FIELDS SEARCHED (IPC) A47G
X	US 2016/088965 A1 (HANSEN JAMES [US] ET AL) 31 March 2016 (2016-03-31) * paragraph [0006]; figures 1-13 * -----	1-15	
X	US 3 790 046 A (ROONEY J) 5 February 1974 (1974-02-05) * abstract; figures 1-7 * -----	1-15	
X	US 10 959 558 B1 (BERNSTEIN STEVEN J [US] ET AL) 30 March 2021 (2021-03-30) * figures 1-5 * -----	1-15	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 6 February 2023	Examiner Longo dit Operti, T
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 22 20 1715

5 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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06-02-2023

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