



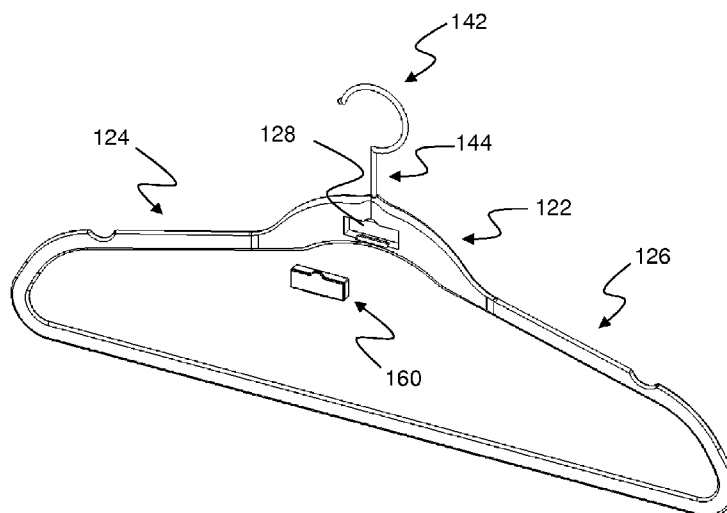
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(54) Title: CLOTHING HOLDERS



**Figure 2**

(57) Abstract: A holder for holding a clothing or apparel article, the holder comprises a main body for supporting a clothing article and a plug-in module carrying a scent treatment substance. The scent treatment substance is adapted for scent emission and/or odor absorption. The plug-in module is adapted to disseminate scent to the ambient and/or to absorb odor from the ambient so that scent can be disseminated by the holder to the clothing item supported on the holder or odor can be absorbed from the ambient.



## Clothing Holders

### Field of the Invention

The present invention relates to holders, and more particularly to clothing or apparel holders such as clothing racks and cloth hangers.

### 5 Background of the Invention

Holders are widely used for hanging or supporting articles such as clothing or apparels. Clothing articles are typically stored in a closed environment such as wardrobes or closets when not in use. As the storage may be for an extended period of time, the articles may absorb unpleasant scents or the unpleasant scents already  
10 absorbed prior to storage may not disperse.

### Summary

There is provided a holder for holding a clothing or apparel article. The holder comprises a main body for supporting a clothing article and a plug-in module carrying a scent treatment substance. The scent treatment substance is adapted for  
15 scent emission and/or odor absorption, and the plug-in module is adapted to disseminate scent to the ambient and/or to absorb odor from the surrounding ambient. This holder is advantageous because smelly residual odor on a clothing

article or in a closed storing environment could be mitigated and/or pleasant scent could be imparted onto the clothing article.

The main body may comprise a receptacle which defines a window compartment for detachably receiving the plug-in module. Such an arrangement  
5 permits removal or exchange of the plug-in module as and when necessary to extend the usable life of the holder.

The window compartment may extend through the main body and the receptacle is arranged such that opposite major surfaces of the plug-in module are outwardly facing when the plug-in module is received by the receptacle, and  
10 wherein the opposite major surfaces are surfaces through which scent is emitted from the plug-in module or through which odor is absorbed by the plug-in module. This enhances scent dissemination and/or odor absorption effectiveness.

The plug-in module may comprise a container inside which a scent treatment substance is stored, and wherein at least one outwardly facing major surfaces of the  
15 container is perforated to permit emission of scent or absorption of odor. This permits refill or replacement of the scent treatment substances,

The oppositely facing major surfaces of the plug-in module may be perforated. It is appreciated that the perforations enhance scent treatment effects. To mitigate

leaking or spillage, the scented substance may be in solid or semi-solid gel, wax or pad form.

In an example, the main body and the plug-in module may comprise corresponding stop portions, the corresponding stop portions being arranged to interact to limit the plug-in depth relative to the main body. The corresponding stop portions, preferably complementarily shaped, operate to bring the plug-in module into an aligned position with respect to the main body upon insertion by a user. The aligned position is preferably arranged such that the plug-in module does not protrude or project from the main body.

The plug-in module may comprise a lidded container and a first stop portion part, the first stop portion part comprising a tab which projects laterally away from the lid of the container. The tab as a stop portion also serves a second function as a finger tip engaging means to facilitate removal of the plug-in module when required.

The lidded container comprises a hinge such that the lid is moveable between open and closed positions about the hinge, the hinge projecting laterally away from the container and forming a second stop portion part of the plug-in module. The hinge, preferably elongate and more preferably integrally moulded on the container, while operating as a hinged connection between the lid and the main

body of the container, also serve a secondary function as a stop portion. A stop means having dual functions facilitate a more compact plug-in module as well as cost reduction.

The stop portion on the main body may be indented and defining recesses, 5 the recesses being shaped to complementarily receive the stop portion on the plug-in module. The complementarily shaped stop portions on the main body and the plug-in module facilitate self-alignment between corresponding parts, thereby facilitating a convenient snap-fit insertion of the plug-in module for user convenience.

10 The depth of the recesses may be such that the stop portion on the plug-in module is flush with or below the surface of the main body when the plug-in module is received by the receptacle.

The window compartment of the receptacle may be adapted for frictionally holding the plug-in module. For example, the peripheral wall of the window 15 compartment may be coated with or covered by a soft frictional material for frictionally holding the plug-in module.

In another aspect, there is provided a plug-in module carrying a scent treatment substance for use with a cloth hanger or clothing holder, wherein the

plug-in module is adapted for snap-fit attachment onto a receptacle on the cloth hanger or clothing holder.

Stop portions may be formed on the plug-in module, the stop portions being adapted to interact with corresponding stop portions on the receptacle on the cloth hanger or clothing holder to restrict the depth of movement into the receptacle.

One of the stop portions may be a tab adapted for engaging a finger-tip of a user to facilitate removal of the plug-in module from the receptacle when mounted therein.

One of the stop portions may be an elongate hinge on the plug-in module.

The plug-in module may comprise a container filled with a scent treatment substance, the container being perforated to disseminate scent to the ambient and/or to absorb odor from the ambient.

The container may be lidded, and the finger engaging tab may be formed on a side edge of the lid.

## 15 **Brief Description of Drawings**

Embodiments of the present invention will be explained below by way of example and with reference to the accompanying drawings or figures, in which:-

Figure 1 is a perspective view showing a cloth hanger illustrating an example of a clothing holder,

Figure 2 is a perspective view showing the cloth hanger of Figure 1 with a plug-in module detached,

5 Figure 2A is an enlarged perspective view of a central portion and the plug-in module of the cloth hanger of Figure 2,

Figure 3 is a first perspective view of the plug-in module,

Figure 3A is a second perspective view of the plug-in module,

10 Figures 4 and 4A are respectively first and second perspective views of the plug-in module with lid opened,

Figure 4B is a perspective view of the plug-in module of Figure 4 filled with scent emitting or scent absorbing substances, and

Figure 5 is a perspective view of a second example holder,

Figure 6 is a perspective view of a third example holder, and

15 Figure 7 is a perspective view of a fourth example holder.

## Description of Exemplary Embodiments

An example cloth hanger **100** of Figures 1 and 2 illustrates a non-limiting example of a holder, such as a clothing holder or a clothing rack. The cloth hanger **100** of Figure 1 comprises a main body **120** and a hanging head **140** for attaching  
5 the cloth hanger to a support rail (not shown). The main body **120** is made of plastics and comprises a central portion **122** which is intermediate two laterally extending wing portions **124**, **126**. The central portion and the lateral wing portions are integrally moulded or formed as a single piece. Exemplary materials suitable for forming the main body include hard plastics, aluminum alloy or wood. The laterally  
10 extending wing portions form a shoulder portion of the cloth hanger and each wing portion slopes slight downwards as it extends laterally away from the central portion.

The hanging head is centrally mounted on the central portion and extends vertically upwards from the central portion. The hanging head comprises a curved hook portion **142** which is connected to the central portion via a straight neck portion  
15 **144**. The head portion is vertically above the center of gravity (CG) of the main body such that the wing portions are substantially symmetrical about a vertical line passing through the head portion when freely suspended with the curved hook portion hanged on a rail. The head portion is rotatable about the neck portion as a swivel axis so that the angular orientation of the main body with respect to the

curved hook portion is variable by relative rotation between the main body and the head portion.

As shown more clearly in Figures 2 and 3, a receptacle is formed on the central portion and vertically below the head portion. The receptacle comprises a compartment **128** which is adapted for receiving a plug-in module **160**. The plug-in module is adapted for receiving scent generating substances such as a gel or pad of fragrance or essential oil, or odor absorption substances, such as activated charcoal powder or bamboo powder. For the sake of brevity, scent generating substances, and odor absorption substances or the like, are collectively referred to as scent treatment substances herein unless the context requires otherwise. The compartment is shaped and dimensioned for a closely-fitted reception of the plug-in module so that the plug-in module can stay in an operation position after insertion, and can be inserted or removed by hand without using a tool.

The compartment is defined by a peripheral wall **130** which forms an outer boundary of a window within which the plug-in module **160** is detachably received. The window penetrates through the central portion to define a through window bore so that both major surfaces of the through window can be utilized for scent operation. Shallow recesses **132**, **134** are formed on opposite edges of the peripheral wall to accommodate stop portions formed on corresponding edges on the plug-in module.

Each recess is formed on the central portion and comprises a shallow shelf which extends laterally away from the peripheral wall. The shallow recess does not pass through the main body and is provided such that a plug-in module comprising a pair of laterally extending wing portions is prevented from exiting from a side opposite to

5 the side of insertion due to blockage by the portion of the main body underlying the shallow shelf. The shallow shelves collectively define stop portions on the main body to interact with corresponding stop portions of the plug-in module to limit movement of the plug-in module into the receptacle. The depth of the shelf below the main body surface is arranged such that the respective outer surfaces of the

10 stop portions of the plug-in module are flush or below with the main body surface. In this example, the depth of the indentations is about one-third of the thickness of the central portion.

The peripheral wall is covered with a fabric-like or frictional material such as velvet, or coated with distributed rubber or silicone dots to enhance smooth frictional

15 engagement with the plug-in module. The coating or covering may extend to other portions of the cloth hanger, especially the portions which are in contact with clothing articles when in use.

The plug-in module **160** is detachable from the main body **120** and comprises an integrally moulded container. The container comprises a housing body which

defines a compartment **162** for carrying scent emitting substances or scent absorbing substances. Distributed perforations are formed on major surfaces **164**, **166** of the container to allow scent or odor passage. The container is shaped and arranged such that its perforated surfaces are exposed when the plug-in module is

5 duly received within the receptacle on the main body. More particularly, the perforated surfaces are outwardly facing to enhance scent absorption or emission area. The example container of Figures 3 and 3A is moulded of clear plastics so that the level of scent absorption or emission substances stored in the plug-in module can be visually inspected and monitored while mounted on the receptacle. The

10 container is lidded to permit refill, replenishing or replacement of the scent treatment substances.

As shown in Figures 4, 4A and 4B, a laterally extending tab **172** is formed on the top cover of the container. This tab is provided to receive a fingertip of a user to enable a user to open the container lid as well as to push and press the container in

15 position into the receptacle. Incidentally, this tab also forms a stop portion which interacts with the shelf on the main body to limit advancement of the container through the receptacle after insertion. In addition, this lid is connected to the housing body via an elongate hinge **174**. The elongate hinge is moulded on the housing body and projects laterally outwards from the housing body. Incidentally, this

elongate lid forms another stop portion on the plug-in module. As the elongate hinge and the tab are on opposite major sides of the plug-in module, stop portions are therefore also distributed on opposite major sides of the plug-in module to provide a balanced stop arrangement.

5           The overall thickness of the plug-in module is arranged such that when the plug in module is duly placed in the receptacle, the major or perforated surfaces of the plug-in module are flush with or below the surfaces of the main body of the cloth hanger to mitigate contact induce damage to the clothing articles.

10           In use, a user inserts a plug-in module filled with scent treatment substance into the receptacle and press the plug-in module firmly against the main body to ensure due retention by the receptacle. The scent treatment substances inside the compartment of the plug-in module emit scent or absorbs odor via the perforations on the major surfaces of the plug-in module to condition the clothing articles supported by the cloth hanger.

15           When a plug-in module is to be removed, a user applies a finger tip against the tab portion, tilt it and lift the plug-in module to remove it. The user can then refill, replenish, or change the scent treatment substances after removal and then return the plug-in module into the receptacle. Alternatively, a user may simply remove and change another plug in module or to dispose of the plug-in module without

replacement as and when desired.

While the tab and elongate hinge also operate as stop portions, it should be appreciated that additional or alternative stop portion can be formed on the plug-in module without loss of generality. In addition, a plug-in module may contain no scent  
5 treatment substances when it is desirable to fill up the window on the main body.

The scented substances may be homogenized in wax, gel or compressed block form to mitigate leakage or spillage. Alternatively, the scented substances may be stored on an absorption pad. In a further alternative, the major or outward facing surfaces of the plug-in module may be formed of porous materials to permit  
10 odor of scent passage. In a yet further alternative, the plug-in module may be formed of scent treatment substances in which case the plug-in module is a plug-in capsule of scent treatment substances. When in the capsule form, the stop portions may be integrally formed as part of the capsule.

A second example holder **200** as shown in Figure 5 comprises a main body  
15 **220** and a hanging head **240** for attaching the holder to a support rail (not shown). The main body **220** is made of plastics and comprises a central portion **222** which is intermediate two laterally extending wing portions **224**, **226**. The hanging head comprises a curved hook portion **242** which is connected to the central portion via a straight neck portion **244**. The head portion is vertically above the center of gravity

(CG) of the main body such that the wing portions are substantially symmetrical about a vertical line passing through the head portion when freely suspended with the curved hook portion hanged on a rail. The holder **200** is identical in substance to the holder **100** except that first and second neck tie holder portions **246, 248** are

5 formed on the main body underneath the head portion **240** and spanning across between the two wing portions **224, 226**, and two scent compartments for holding the plug-in modules **260 a, b** are formed on the two wing portions. Therefore, instead of being vertically underneath the head portion **240**, the scent compartments are arranged such that the neck tie holder **246** is intermediate the scent

10 compartments for holding the plug-in modules. Also, skirt hooks **252 a, b** for holding strap-type skirts are formed near the extreme ends of the wing portions **224, 226**. Otherwise, the parts of this holder **200** are identical or functionally identical to that of the holder **100** and the description above in relation to the holder **100** is incorporated herein with the numerals increased by **100** where the context permits or appropriate.

15 Figures 6 and 7 respectively show third and fourth example clothing holders which are variations to that of Figures 1 and 5. Except for the differences described below, the example clothing holders of Figures 6 and 7 are substantively identical to that of Figures 1 and 5 and the same set of numerals will be used. Specifically, the numerals of Figures 1 to 4 will be added by 200 and 300 respectively for the

examples of Figures 6 and 7 respectively and numerals of Figure 5 will be added by 100 and 200 respectively for the examples of Figures 6 and 7 respectively. Specifically, the example of Figure 6 is identical to that of Figure 1 except that there is no transversely extending base member joining the extreme ends of the wing 5 portions, while a tie holder 346 is provided underneath and spanning across the head portion 322. The example of Figure 7 is identical to that of Figure 1 except that there is no transversely extending base member joining the extreme ends of the wing portions, while a tie holder 446 is provided underneath and spanning across the head portion 422. In addition, two capsule 468a, b are attached to the extreme 10 fee ends of the wing portions.

While embodiment of the present invention has been explained with reference to the examples above, the embodiments are non-limiting examples for illustrating the present invention and should not be construed to limit the scope of the invention. For example, while an embodiment has been explained with reference 15 to a rectangular container, it should be appreciated that the rectangular container could be of any appropriate shape such as cylindrical, polygonal or triangular without loss of generality. Furthermore, while the example plug-in module is moulded of clear plastics, it may be formed of other mouldable materials without affecting its performance.

**Table of Numerals**

100	200	300	400	Cloth hanger/ holder
120	220	320	420	Main body
122	222	322	422	Central portion
124	224	324	424	1st wing portion
126	226	326	426	2nd wing portion
128				Window compartment
130				Peripheral wall of compartment
132				1st recess
134				2nd recess
140	240	340	440	Head
142	242	342	442	Hook portion
144	244	344	444	Neck portion
	246	346	446	1st neck tie holder portion
	248			2nd neck tie holder portion
	252a, 252b			Skirt hook
160	260a, 260b	360	460	Plug-in module
162				Scent Compartment
164				Top surface of lid
166				Bottom surface of container
			468a, 468b	Capsule
172				Lid tab
174				Elongate hinge

## Claims

1. A holder for holding a clothing or apparel article, wherein the holder comprises a main body for supporting a clothing article and a plug-in module carrying a scent treatment substance, the scent treatment substance being  
5 adapted for scent emission and/or odor absorption; and wherein the plug-in module is adapted to disseminate scent to the ambient and/or to absorb odor from the ambient.
2. A holder according to Claim 1, wherein the main body comprises a receptacle, the receptacle comprises a window compartment for detachably receiving the  
10 plug-in module.
3. A holder according to Claim 2, wherein the window compartment extends through the main body and the receptacle is arranged such that opposite major surfaces of the plug-in module are outwardly facing when the plug-in  
15 module is received by the receptacle, and wherein the opposite major surfaces are surfaces through which scent is emitted from the plug-in module or through which odor is absorbed by the plug-in module.
4. A holder according to any of the preceding Claims, wherein the plug-in module comprises a container inside which a scent treatment substance is

stored, and wherein at least one outwardly facing major surfaces of the container is perforated to permit emission of scent or absorption of odor.

5. A holder according to Claim 4, wherein oppositely facing major surfaces of the plug-in module are perforated.
- 5 6. A holder according to Claims 4 or 5, wherein the scented substance is in solid or semi-solid gel, wax or pad form.
7. A holder according to any of the preceding Claims, wherein the main body and the plug-in module comprises corresponding stop portions, the corresponding stop portions being arranged to interact to limit the plug-in  
10 depth relative to the main body.
8. A clothing rack according to Claim 7, wherein the plug-in module comprises a lidded container and a first stop portion part, the first stop portion part comprising a tab which projects laterally away from the lid of the container.
9. A clothing rack according to Claim 8, wherein the lidded container comprises  
15 a hinge such that the lid is moveable between open and closed positions about the hinge, the hinge projecting laterally away from the container and forming a second stop portion part of the plug-in module.

10. A holder according to Claim 9, wherein the hinge is elongate and is integrally formed on the container.
11. A holder according to any of Claims 7-10, wherein the stop portion on the main body is indented and defining recesses, the recesses being shaped to complementarily receive the stop portion on the plug-in module.
12. A holder according to Claim 11, wherein the depth of the recesses is such that the stop portion on the plug-in module is flush with or below the surface of the main body when the plug-in module is received by the receptacle.
13. A holder according to Claims 10 or 11, wherein the stop portion on the main body is in communication with and extends laterally away the window compartment of the receptacle.
14. A holder according to any of the preceding Claims, wherein the window compartment of the receptacle is adapted for frictionally holding the plug-in module.
15. A holder according to Claim 14, wherein the window compartment is defined by a peripheral wall, the peripheral wall being coated with or covered by a soft frictional material for frictionally holding the plug-in module.

16. A holder according to any of the preceding Claims, wherein the plug-in module is arranged as a capsule, the capsule being adapted for carrying the scent emitting or scent absorption substances.
17. A holder according to any of the preceding Claims, wherein the holder is a  
5 cloth hanger comprising a hook for attaching the hanger to a bar and a pair of lateral wings for holding a clothing item.
18. A holder according to Claim 17, wherein the receptacle is located vertically below the hook and intermediate the lateral wings.
19. A clothing rack according to Claims 17 or 18, wherein the receptacle is  
10 located on an axis of symmetry or the centre of gravity of the main body.
20. A plug-in module carrying a scent treatment substance for use with a cloth hanger or clothing holder, wherein the plug-in module is adapted for snap-fit attachment onto a receptacle on the cloth hanger or clothing holder.
21. A plug-in module according to Claim 20, wherein stop portions are formed on  
15 the plug-in module, the stop portions being adapted to interact with corresponding stop portions on the receptacle on the cloth hanger or clothing holder to restrict the depth of movement into the receptacle.

22. A plug-in module according to Claim 21, wherein one of the stop portions is a tab adapted for engaging a finger-tip of a user to facilitate removal of the plug-in module from the receptacle when mounted therein.
23. A plug-in module according to Claims 21 or 22, wherein one of the stop  
5 portions is an elongate hinge on the plug-in module.
24. A plug-in module according to any of Claims 20 to 23, wherein the plug-in module comprises a container filled with a scent treatment substance, the container being perforated to disseminate scent to the ambient and/or to absorb odor from the ambient.
- 10 25. A plug-in module according to Claims 23 or 24, wherein the container is lidded, and the finger engaging tab is formed on a side edge of the lid.

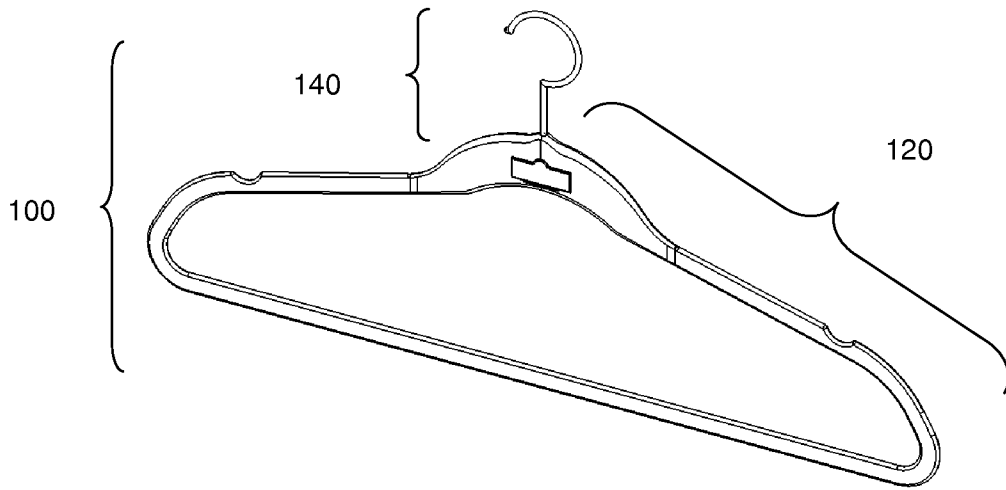


Figure 1

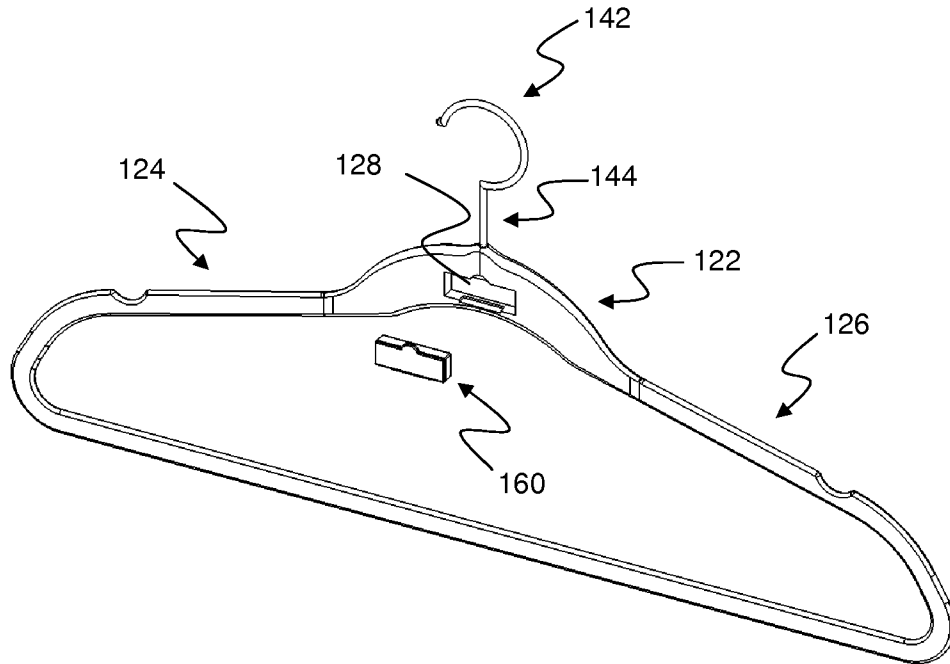
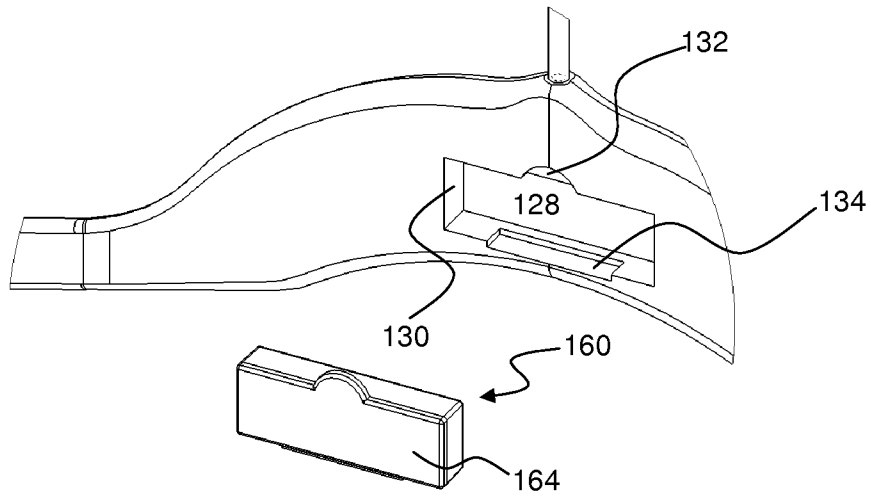
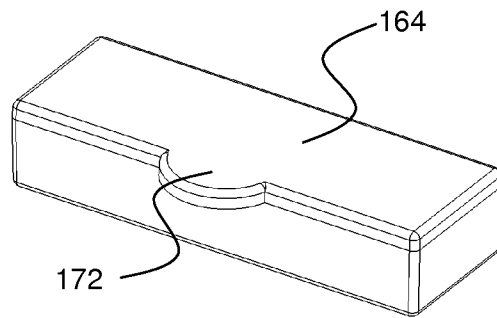


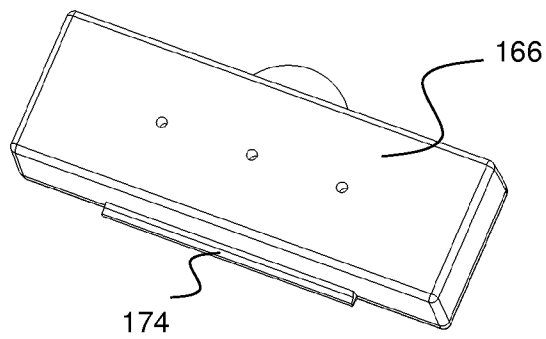
Figure 2



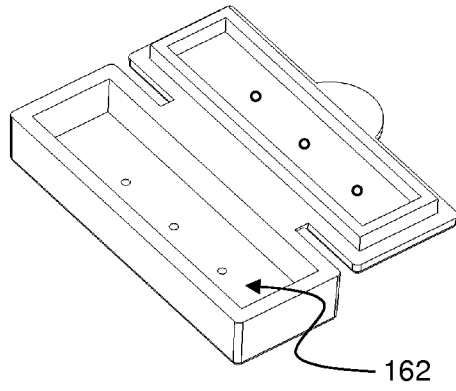
**Figure 2A**



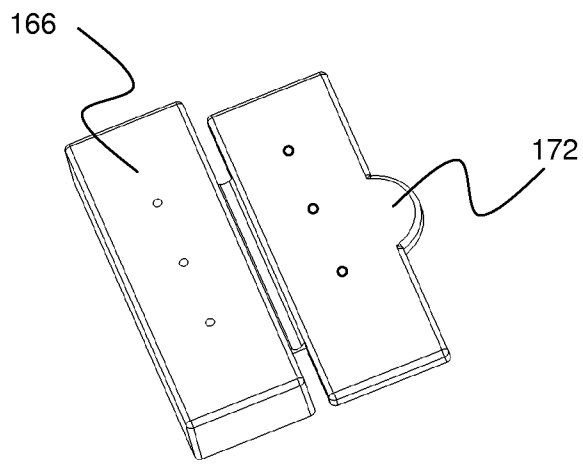
**Figure 3**



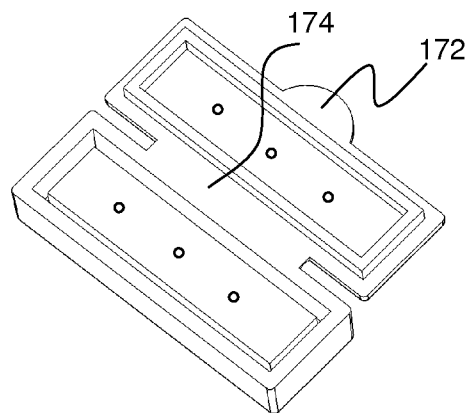
**Figure 3A**



**Figure 4**



**Figure 4A**



**Figure 4B**

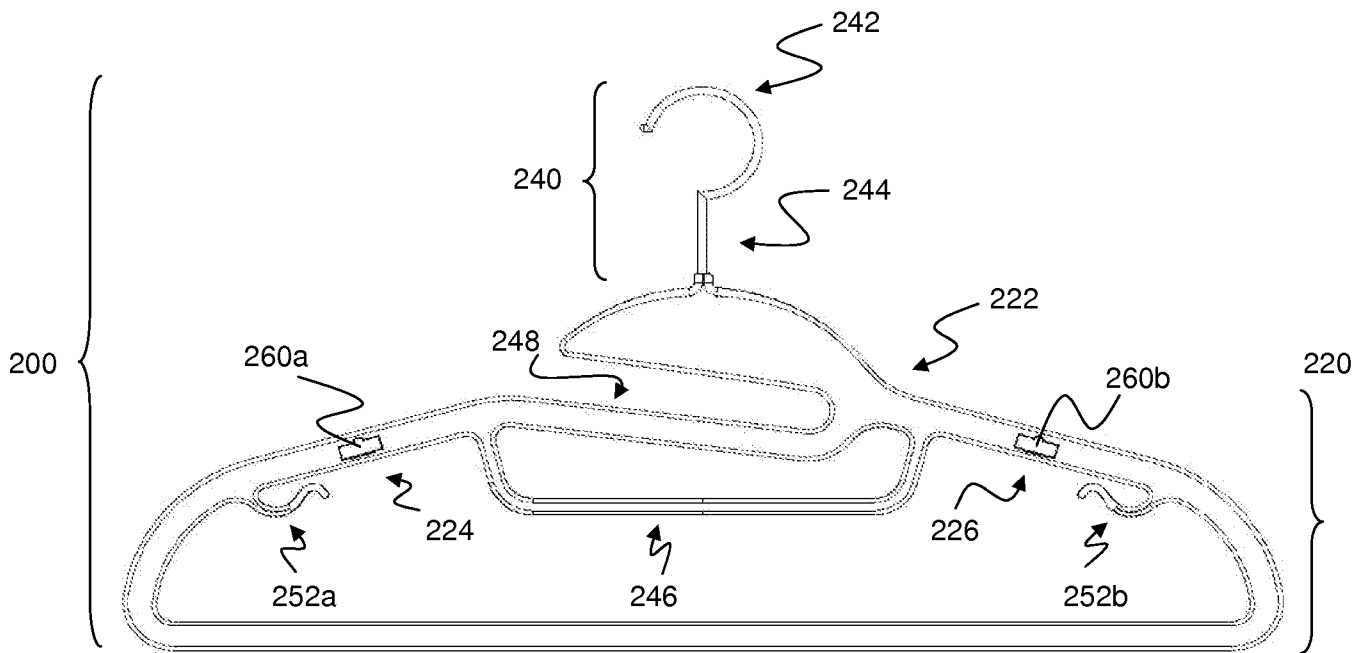


Figure 5

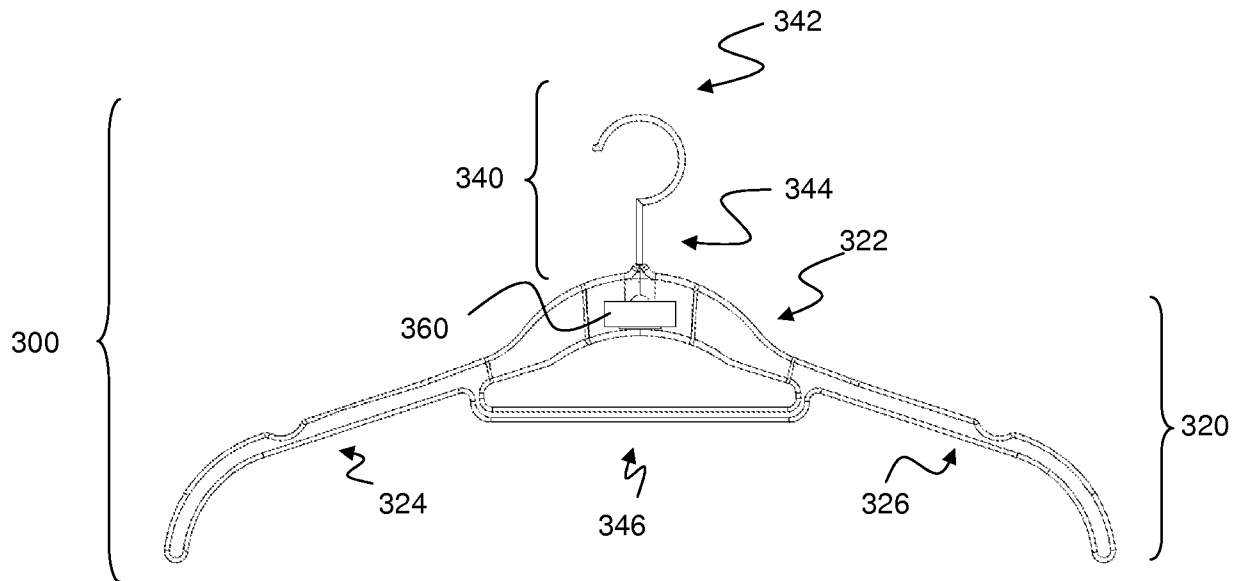


Figure 6

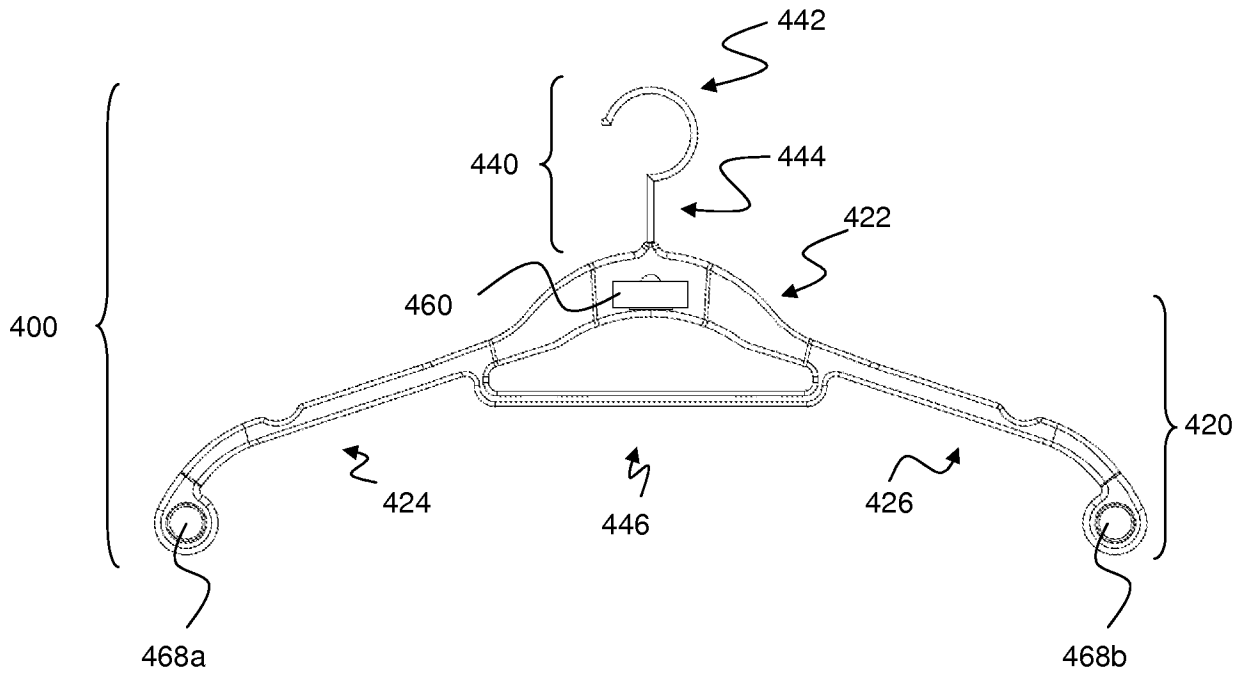


Figure 7

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB2011/053528

## A. CLASSIFICATION OF SUBJECT MATTER

A47G25/60 (2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A47G25/-

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNKI, CNPAT, WPI, EPODOC: cloth, clothes, clothing, apparel, holder, rack, hanger, scent, perfume, odor, cavity, hole, perforate?, lid, plug-in, pluggable, removable

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP3161732U(ZHANG, Zhihong) 05 Aug. 2010(05.08.2010)description paragraphs 0013-0034, figures 1-6	1-25
PX	CN201905690U(XIE, Xiaoling) 27 Jul. 2011(27.07.2011)the whole document	1-25
PX	CN201888665U(XIE, Xiaoling) 06 Jul. 2011(06.07.2011)the whole document	1-25
A	JP2001-8813A(FURUYA, Yoichi)16 Jan. 2001(16.01.2001)the whole document	1-25
A	US2010/0006608A1(DOMB, Nir)14 Jan. 2010(14.01.2010)the whole document	1-25
A	CN201085434Y(NINGBO INST. TECH. ZHEJIANG UNIV.)16 Jul. 2008(16.07.2008)the whole document	1-25

Further documents are listed in the continuation of Box C.

See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&amp;”document member of the same patent family</p>
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Date of the actual completion of the international search  
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