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(54) **Bilateral support for display units**

(57) A plastic hanging support for a display unit is disclosed, comprising at least one support arm which projects from a support-retaining body, wherein said retaining body (1) is apt to engage with a through-slot of a

display panel of the display unit and is generically in the form of a U-shaped elastic clip, from the opposite sides of which identical support arms (2a, 2b, 210) project.

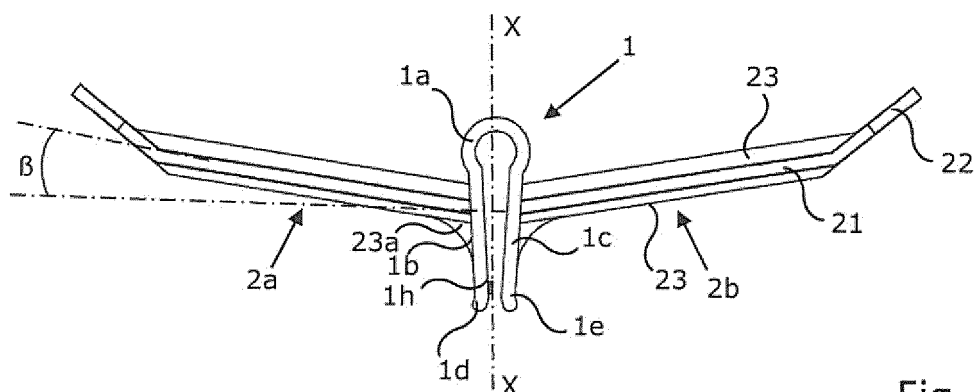


Fig. 1

Description

Field of the invention

[0001] The present invention relates to a support for display units, in particular a support for displaying blister packs.

Background art

[0002] As known, a variety of different types of display units for sales points exists on the market, suited to hold and display various types of products. Said units are equipped of a number of supports to hang the products.

[0003] A particularly widespread support is the one which is employed to hang packages of modest-sized products, typically inserted in so-called blister packs.

[0004] These supports, also called "prongs" in the field, consist of a root portion from which a thin support arm extends, whereon product packages are then hung. The root portion traditionally comprises a support plate to a vertical wall and fastening means, such as a pair of engaging teeth or an elastic clip. The fastening or retaining means are meant to be inserted into corresponding slots obtained in a vertical wall of the display unit and locked there by simple fitting. The support arm takes up various shapes and may be single, double or with a different, more complex shape. The crosswise section of the profile also depends on the type of insertion hole provided on the package to be hung.

[0005] As a matter of fact, the products on sale are hung to the support arm, inserting them one behind the other, through the package hole, from the distal (or cantilevered) end of the arm. The purchasers then slide the product off the support arm upon purchase.

[0006] An example of prior art is US6234436, where a single arm prong is disclosed.

[0007] The supports are typically made of plastic or metal material, but are nevertheless objects of a limited size, which can be manipulated easily by hand. Therefore, it is common practice to prepare a vertical display panel (possibly enriched with pleasant drawings or advertising messages) in the sales point, in which an ordered series of slots is practised with which the operator can manually engage the fastening means of the supports. The mounting operation of the supports on the panel can be performed very easily: the retaining teeth or the elastic clip are inserted into the slots with the support tilted in an insertion position, so that the subsequent (downward) rotation into work position brings the fastening means to engage behind the panel, locking in position the support and preventing a subsequent accidental detachment or slipping off of the same. In the locked position, the support arm takes up the desired attitude. The weight of the products on the support ensures that said support remains in the work position and hence cannot accidentally slip off.

[0008] Normally, display units are conceived to have

a single front useful surface, from which the above-described supports are hung. For such purpose, the structure of the units very simply consists of a panel of a modest thickness, in the order of 2-5 mm, of a paper or plastic material, in which a number of slots equal to the number of supports which it is necessary to hang is practised. The panel is then supported in the vertical plane along the lateral edges by fastening it directly to a load-bearing wall or, more often, making it integral with a suitable frame resting on the floor.

[0009] However, the need to propose innovative and original equipment, as well as the request to occupy spaces more effectively, has led to the fact that nowadays display units also exist in which the products are displayed on at least two opposite sides of the display unit structure.

[0010] For such purpose, the use of a single support panel is desirable, because the slits to be practised to sustain the support prongs on both sides would be twice the standard number and, on each side, the fastening means of the support prong mounted on the other side would be visible, which is aesthetically unacceptable and does not allow a suitable exploitation of the area available on the panel.

[0011] In order to propose two opposite display sides, according to the known art it is then provided to couple two standard support panels, each one provided with the sole slits essential for the support prongs of their own side (and hence the slits of the one panel fall in correspondence with those of the other panel). The steady coupling of the two panels may occur by various systems, which nevertheless require the building of spacer elements and a suitable frame. On each side the support prongs are then mounted in a conventional way, in the desired number and exploiting as best as possible the available surface.

[0012] The two panels and the relative supports of the same supporting structure are fully independent and hence are not affected by each other: there is hence no drawback even if some support prongs on the two sides were loaded differently. The thus resulting double structure is satisfactory from the point of view of stability, rigidity and sturdiness, but is redundant and expensive.

[0013] However, precisely due to the advantages it entails in terms of rigidity and stability, in the cases in which the panels are made of cardboard or plastics, so far it has not been possible to replace them with any different solution.

Vice versa, in the sector of metal display units - which, however, find different application with respect to cardboard/plastic ones, both due to reasons of cost, and for aesthetic and weight/handling manipulation reasons- the subject of the double display surface has been dealt with differently. As a matter of fact, the support structure does not provide slits in the surface continuity, as instead described above for the cardboard panels, but - due to the intrinsic rigidity of the metal material - is itself designed so as to provide fastening openings. For example, the

support structure is in the shape of a mesh or grid made of thin metal rods or threads. Thereby it is possible to join to the metal load-bearing structure, support elements which have support arms facing the two opposite sides. Opposite-arm support devices, also made of metal, have hence been suggested which are steadily constrained to the rigid framework of the metal grid, fastening them by tightening means (such as screws and bolts) or by welding.

[0014] The individual opposite-arm supports are well constrained to a rigid structure and are hence not affected by mounting problems, nor by load imbalance problems. This same layout - as may be guessed - is not repeatable in the sector of cardboard or plastic (plexiglass) panels, where in addition the panel material is prone to collapse and is sensitive to load imbalances. Moreover, a metal support with relative fastening means implies a high cost, which is justified only by the duration of the metal material, while it is unacceptable for cardboard display units for temporary use (lasting the time of a season or of a promotion campaign).

Summary of the invention

[0015] The object of the present invention is to solve the prior art drawbacks set forth above, providing an economic support which may be applied to the sector of short-lived display units, that is, units made of cardboard or plastic material, and which allows to suitably exploit both sides of the display panel, without risks of accidental detachment or instability.

[0016] Such object is achieved through a support for display units as defined in its essential features in the attached claims.

Brief description of the drawings

[0017] Further features and advantages of the invention will in any case be more evident from the following detailed description of preferred embodiments, given purely as a non-limiting example and illustrated in the attached drawings, wherein:

figs. 1-3 are front elevation, top plan and bottom plan views, respectively, of a support prong according to a first embodiment of the invention;

figs. 4-5 are bottom and top perspective views, respectively, of the support of fig. 1;

figs. 6-10 are views identical to the one of figs. 1-5 with respect to a second embodiment of the invention.

[0018] In the following, reference will be made to a support prong, describing it with respect to the attitude it takes up when it is installed in work position. Therefore, the statements "upper" and "lower", or "upwards" or "downwards" refer to such attitude, that is, when it is installed on a display panel mounted according to a vertical

plane.

[0019] Fig. 1 shows a first embodiment of a support according to the invention, suitable to be inserted and locked in a slit practised in a display panel made of thin (for example of the order of 3-7 mm) cardboard or plastic material.

[0020] The support has a central body 1 in the shape of an elastic clip, from which two identical arms 2a and 2b depart, directed according to two opposite directions with respect to the symmetry axis X-X of the support.

[0021] Central clip-like body 1 is made of a thick web of plastic material. It has a curved head 1a (which develops along an arc of a circle at least equal to or greater than 180°), from which two wings 1b and 1c extend, slightly converging towards the opposite end to head 1a. These wings 1b and 1c define two converging and opposite, planar inner surfaces, making up resting surfaces of a suitable size, for example of at least 15x10 mm, preferably at least 20x13 mm.

[0022] The angle of convergence between the two wings is of about 2-3°, so as to pass from a cross distance of 5-6 mm between the inner surfaces at the head 1a, up to a cross distance of only 2 mm in correspondence of their free ends.

[0023] The two wings 1b and 1c end with free ends, slightly curved outwards, in the shape of terminal lips 1d and 1e. The rounding and the curvature of these terminal ends 1d and 1e takes into account two different requirements. On the one hand, the rounding and the outward orientation eases the introduction of clip-like body 1 into a slit of the support panel (not shown), which operation occurs by tilting the support and then putting it upright once it is in a locking position. On the other hand, the rounding of the surface ensures that an adequate resting surface is opposed to the support panel, even in the case in which the support is strongly tilted on one side due to an unbalanced loading with respect to symmetry axis X-X; as a matter of fact, the shape of these terminal lips (clearly visible in fig. 1) avoids that, with an asymmetrical loading of the support, an end of the clip-like body imparts too much a concentrated pressure on the cardboard panel, biting into it irremediably (which problem did not arise in the prior art, in which the cardboard panel could be supported with a large opposition surface on the back side opposite to the one of the support arm).

[0024] From the outer surface of each one of the two wings 1b and 1c, support arms 2a and 2b, respectively, project. Each one of the two arms consists of a planar plate 21 - of a variable length depending on requirements (for example from 10 to 250 mm) - which ends in a cantilevered end 22, folded upwards. Along the surface of plate 21 a stiffening longitudinal rib 23 is provided, preferably both on the lower side and on the upper side. As can be appreciated in the drawings, the lower ribs end against the respective wings with a small radial connection 23a, which reduces local deformations and hence increases the duration of the part. Preferably ribs 23 with the relative connections do not affect the terminal bottom

area of the wings, where the turn-ups of terminal lips 1d and 1e are provided: this layout has proved to be the best compromise between the stiffening and the duration of arms 2a and 2b, the flexibility of clip-like body 1 and the effectiveness of the retaining action on the panel.

[0025] Each arm 2a and 2b extends according to a longitudinal axis which is not perpendicular to the plane of wings 1b and 1c, but has a slight upward inclination. The dihedral angle β of these two arms 2a and 2b, that is, the angle formed with the perpendicular to symmetry plane X-X, is of at least 8-10° and preferably of the order of 15°.

[0026] The dihedral angle ρ is chosen taking also into account the specific deformability of the two arms 2a and 2b: depending on the length thereof and on the elasticity of the material, the dihedral angle may be increased or decreased. In particular, it is desirable for the longitudinal axis of the arm to never drop below the horizontal line, taking into account the arm deformation and the maximum lateral yielding which the support mounted on the panel may have following a load imbalance between the two opposite arms 2a and 2b.

[0027] The entire support prong is advantageously made of plastic material, for example by moulding.

[0028] Finally, preferably, on the inner side of at least one of the two wings 1b, 1c a halt tooth 1h is provided. Such tooth 1h protrudes from the inner surface of the wings by a very short extent, for example by 0.5-2 mm, and extends for example across the entire width of the wing. Tooth 1h has the function of inserting in a small recess or slit (where provided) in the support panel or to "bite" into the panel material, with the purpose of stabilising the retaining position.

[0029] With this embodiment, the mounting of the support according to the invention on a display panel is very simple and by all means stable. It is sufficient to practise a slit in a panel slightly thicker (by some tenth of a millimetre) than the inner distance between the two wings 1b and 1c, to then introduce therein one of arms 2a or 2b, until bringing body 1 across the panel edge. At this point, the support can be securely engaged with the panel, causing the panel wall to slide between the two wings 1b and 1c, until arriving in abutment in the inner part of head 1a. During this operation, a slight outward spreading-apart of wings 1b and 1c is caused, which produces an elastic reaction (mainly caused by the shape of head portion 1a) apt to bring the inner resting surfaces in contact under pressure on the two opposite sides of the panel.

[0030] Due to the large surface of the two wings 1b and 1c, to the presence of terminal curved lips 1d and 1e, as well as to the optional presence of tooth 1h, the retaining of the support prong on the panel edge is stable and secure, despite the intrinsic yielding of a cardboard or plastic panel. Also, should load imbalances arise - which event is all but rare, since the two opposite arms 2a and 2b lie on two opposite sides of the panel and can be used for different uses or with a different number of products - the support is kept well fastened to the panel;

in any case, the relative inclinations of the arms with respect to the wings prevent the arms from dropping below the horizontal plane, hence avoiding the risk of the products slipping off the arm.

[0031] Figs. 6-10 show a second embodiment of the invention. The clip-like body 1 is fully equivalent to that of the first embodiment. In this case, however, much thinner support arms are provided, in the form of circular-section bars or rods. A couple of circular-section rods 210 departs from the two opposite sides of wings 1b and 1c, also provided with a first dihedral angle. A terminal part 220 of the rods bends upwards with a second, more accentuated dihedral angle than the first one.

[0032] As can be clearly understood, with the support prong according to the invention, it is possible to achieve the object set forth in the premises. As a matter of fact, a support has been provided, which may be applied to a single panel, which gives the opportunity to exploit both sides of the display unit. The support is inexpensive, because manufactured by moulding of plastic material. The layout and the intrinsic inexpensiveness of this device reflect synergistically in the overall manufacturing economics of the entire display unit, which no longer requires a double support panel and a frame structure, but can exploit both opposite sides of a single panel (of a thickness suitable to bear the expected load). The arrangement of the prong, exploiting the elasticity of the plastic material and suitable surface developments and inclinations, ensures good stability also on the yielding edge of a cardboard and/or plastic panel. The same arrangement succeeds in facing also load imbalances on the two opposite sides, without impairing the stability of the displayed products.

[0033] However, it is understood that the protection of the invention described above is not limited to the special embodiments shown, but extends to any other equivalent construction variant as defined by the attached claims.

[0034] In particular, it can be noticed that the arrangement and the operation principle of the illustrated embodiments is substantially equivalent; it is hence provided that other variants are conceivable, which differ from each other due to small details, which in any case fall within the scope of protection of the present invention.

[0035] To give an example, the two symmetrical wings of the central body may be perfectly mutually parallel, but with a mutual distance below the thickness of the panel on which they must be installed, so as to nevertheless exploit an elastic returning force due to a spreading-apart effect.

[0036] Furthermore, the inner surface of the two wings, instead of being smooth could be variously patterned to better adhere to the panel surface. If the panel is made of cardboard, it may be useful to provide knurlings or thin horizontal ribs, which may sink with their imprint in the material and guarantee greater friction.

[0037] Moreover, above the head of the clip body further retaining means may be provided, which means may engage the cut-out of the panel. For example, the two

wings 1b and 1c could be extended upward by a short measure, defining an upper, U-shaped housing: these two extensions would be meant to define two further resting points against the two opposite surfaces of the display panel, in the upper part of the installation cut-out of the panel. In such case, the lateral stability of the support could be further improved.

[0038] Finally, also the shape of the two support arms may differ from the one shown in the drawings. For example the two arms may consist of a pair of parallel rods joined at their distal ends, or of a pair of rods joined by a thin wall, or else of variously shaped rods, and so on depending on the requirements of the packages to be displayed.

Claims

1. Plastic hanging support for a display unit, comprising at least a support arm which projects from a support-retaining body, said retaining body being apt to engage with a through-slot of a display panel of the display unit, **characterised in that** said retaining body (1) is generically formed as a symmetrical, U-shaped, elastic clip, from the opposite sides of which identical support arms (2a, 2b, 210) project.
2. Plastic hanging support for a display unit, comprising at least a support arm which projects from a body of the support, said body being apt to engage with a through-slot of a display panel of the display unit, **characterised in that** said body of the support is shaped according to a symmetrical clip (1), with an elastic yielding head portion (1a) and two planar wings (1b, 1c) which extend from said head portion (1a) symmetrically with respect to a symmetry plane (X-X), and **in that** from each of said wings (1b, 1c) two identical and opposite support arms (2a, 2b, 210) project from the two sides of a symmetry plane of the support, said arms (2a, 2b) being provided with a dihedral angle (β) of at least 8° - 10° .
3. Plastic hanging support as claimed in claim 2, wherein said wings (1b, 1c) from the opposite side of said head portion (1a) are provided with two outwardly-curved terminal lips (1d, 1e).
4. Plastic hanging support as claimed in claim 3, wherein at least a tooth (1h) protruding from the inner surface of said wings (1b, 1c) is provided.
5. Plastic hanging support as claimed in claim 2, 3 or 4, wherein said wings (1b, 1c) have opposite inner surfaces extending by at least 15x10 mm, preferably by at least 20x13 mm.
6. Plastic hanging support as claimed in any one of

claims 2 to 5, wherein said dihedral angle (β) is in the order of 15° .

7. Plastic hanging support as claimed in any one of claims 2 to 6, wherein said head portion (1a), is made of a curved web extending across an arc of at least 180° .
8. Plastic hanging support as claimed in any one of claims 2 to 7, wherein said wings (1b, 1c) extend also above said head portion (1a) so as to define a generic, upper, U-shaped housing, apt to engage with an upper edge of said through-slot of the display panel.
9. Plastic hanging support as claimed in any one of the preceding claims, wherein said support arms (2a, 2b, 210) have a flat section profile (21) with opposite ribbings (23) on the two sides.
10. Plastic hanging support as claimed in any one of claims 1 to 8, wherein said support arm (2a, 2b, 210) has a circular section profile.
11. Display unit having a plurality of removable plastic hanging supports as in any one of the preceding claims, **characterised in that** it includes a single display panel made of plastic sheet or cardboard where a plurality of through-slot are pierced where said hanging supports are engaged.

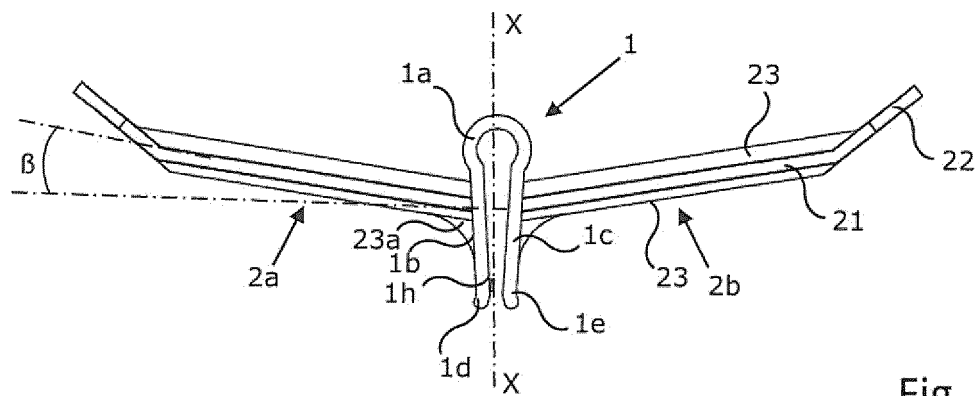


Fig. 1

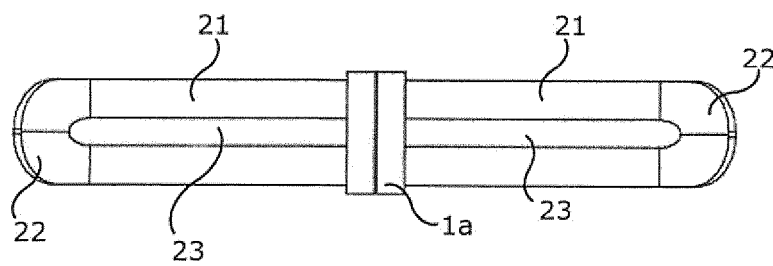


Fig. 2

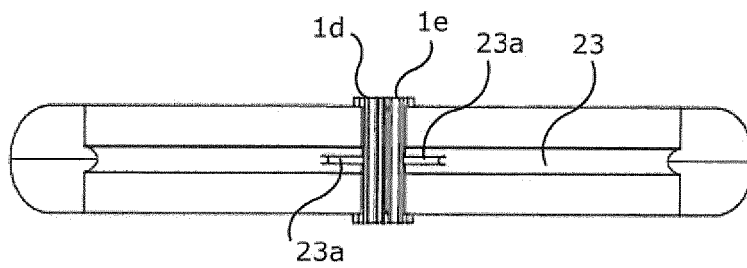


Fig. 3

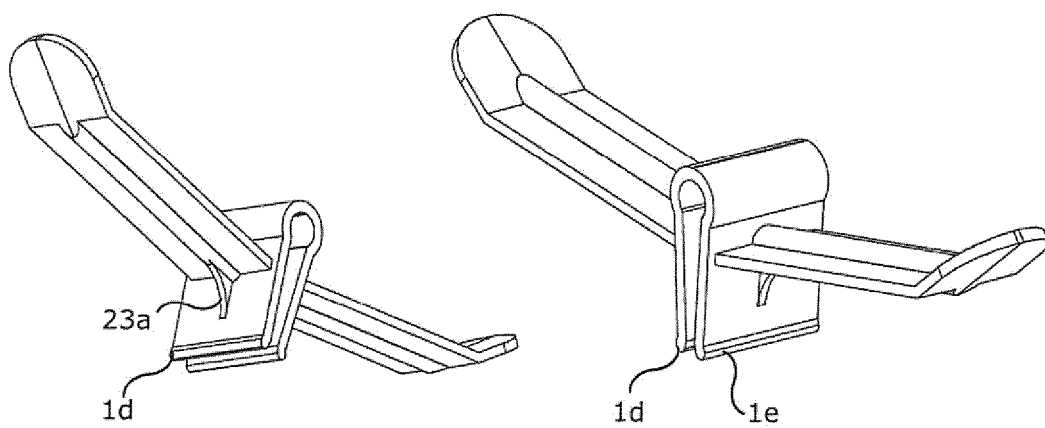


Fig. 4

Fig. 5

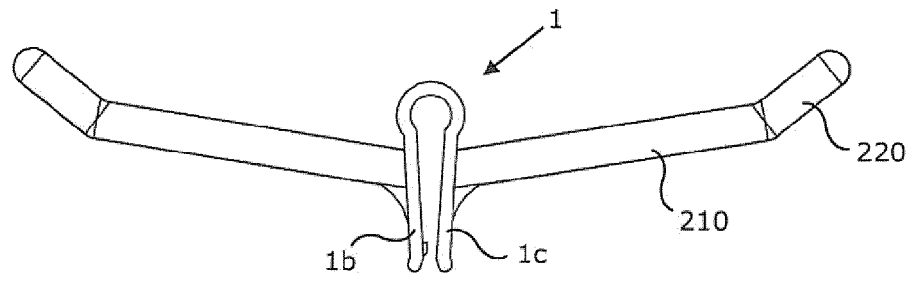


Fig. 6

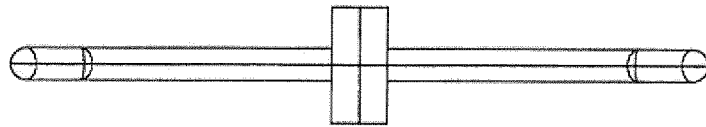


Fig. 7

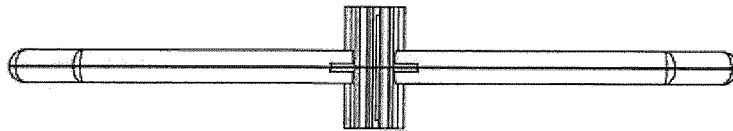


Fig. 8

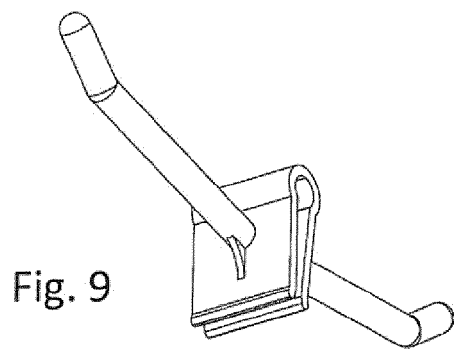


Fig. 9

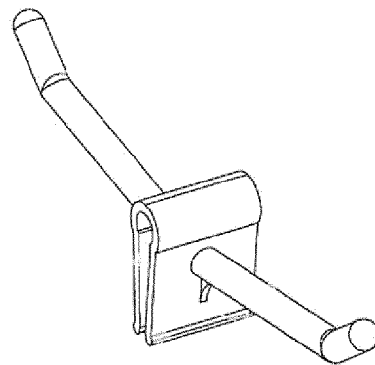


Fig. 10



EUROPEAN SEARCH REPORT

Application Number
EP 13 19 2740

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	Anonymous: "Double-sided metal display hook/peg hook/prong Hook", bizrice 27 March 2012 (2012-03-27), XP002702775, Retrieved from the Internet: URL: http://sell.bizrice.com/selling-leads/1054516/Double-sided-Metal-Display-Hook-Peg-Hook-Prong-Hook.html [retrieved on 2013-07-15] * the whole document *	1-3,5-11	INV. A47F5/08
Y	US 6 234 436 B1 (KUMP DANIEL J [US]) 22 May 2001 (2001-05-22) * column 4, line 21 - column 7, line 55; figures 1-10 *	1-3,5-11	
A	DE 86 07 019 U1 (TESCOHA MODE FÜR WÄNDE GMBH) 30 April 1986 (1986-04-30) * figures 1-7 *	1-11	
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A	US 2 532 022 A (GUNDERSON WILLARD R) 28 November 1950 (1950-11-28) * figures 1-5 *	1-11	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 20 December 2013	Examiner Vehrer, Zsolt
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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EPO FORM 1503 03.82 (P04C01)

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

EP 13 19 2740

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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20-12-2013

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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