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Halter

SUPPORT

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Description

[0001] The invention relates to a holder, for example for a laptop computer, according to the preamble of claim 1.

[0002] Such a holder for a laptop computer is known, for example from US patent No. 6,098, 952. The holder that is disclosed in said US patent is composed of several parts, which are assembled into a holder by means of hinges, screws and other fastening means. The adjusting means that function to adjust the angle of the laptop computer on the holder with respect to the supporting surface are positioned behind and under the laptop computer, so that they are not readily accessible to the user, which renders adjustment thereof more difficult. In addition to that, said holder is built up of several parts and has considerable spatial dimensions in its collapsed position, so that it is not very user-friendly, the more so because it is not very manageable and somewhat difficult to carry along in a briefcase.

[0003] In DE 20104339 U1 a holder is disclosed having a first plate and a support plate, wherein the support plate is hinged to the first plate and rests on the supporting surface.

[0004] The object of the invention is to overcome the aforesaid drawbacks and provide a compact and lightweight holder for a laptop computer, which is furthermore built up of a minimum number of parts and which is very easy to adjust by the user.

[0005] In accordance with a first aspect of the invention, the holder is characterized in that by the characterizing features of claim 1.

[0006] As a result of this construction a very compact, lightweight holder is obtained which has minimal spatial dimensions in the collapsed position, as a result of which it is very easy to take along in a briefcase or the like, for example. In addition to that the holder is built up of a minimal number of parts that need not be assembled into one unit by means of additional hinges, screws or other fastening means. On the contrary, it is possible to form the holder in one piece.

[0007] In accordance with another aspect of the invention the support is embodied as a second plate member that can hinge out of the plane from said first plate member.

[0008] In accordance with a specific aspect, the adjusting means are embodied as a third plate member that can hinge out of the plane of said support.

[0009] Embodying the holder according to the invention as plate members that can hinge out of each other's plane not only leads to a lightweight and compact construction, but in addition the holder has minimal spatial dimensions in the collapsed position thereof, which renders the holder considerably more manageable.

[0010] According to a further embodiment, the adjusting means may comprise at least one slot formed in the third plate member, which slot mates with a projection extending from the edge of the first plate member.

[0011] The adjusting means may comprise several parallel slots formed in the third plate member so as to improve the adjustability.

[0012] Unlike the construction of the holder that is disclosed in US patent No. 6,098,952, the construction of the adjusting means as described above enables easy adjustment in a wide range of positions.

[0013] According to a further aspect, the holder according to the invention is characterized in that the first plate member is provided with an upright flange for supporting an edge of the laptop computer.

[0014] In addition to that, the first plate member of the holder according to the invention may be provided with supporting means.

[0015] In one embodiment, the supporting means can be moved from the plane of the first plate member, and more particularly the supporting means can hinge out of the plane of the first plate member.

[0016] In an improved construction in accordance with the inventive idea of the holder that is disclosed in the present application, the supporting means form an integral part of the first plate member.

[0017] In a specific embodiment, the supporting means are strip-shaped elements, which strip-shaped elements are hinged to the first plate member at one cross side. Said strip-shaped elements may have a widened free end. Said supporting means may function to support the laptop computer or one or more sheets of paper.

[0018] More specifically, the holder is made of a laminated plate-shaped material consisting of two outer layers of a metal with a layer of synthetic material present therebetween. The hinges are obtained by locally removing metal from the two outer layers on either side of the layer of synthetic material, for example by means of a milling operation. This makes it possible to make the holder in one piece, whilst the hinges between the various parts of the holder can be obtained without providing additional hinges or other fastening means. This ensures a very lightweight and compact construction, which has minimal spatial dimensions in the collapsed position and is thus easy to take along in a briefcase or the like.

[0019] More in particular, the holder is integrated in the housing of the laptop computer.

[0020] The invention also relates to a laptop computer comprising a holder according to the invention, which is integrated in the housing of the laptop computer.

[0021] The invention will now be explained in more detail with reference to a drawing, in which:

Figures 1-3 are views of the plate-shaped material of which a holder according to the invention may be made;

Figures 4a and 4b are views of an additional embodiment of a holder according to the invention; and Figures 5a-5c are partial views of a holder according to the invention.

Figures 1-3 show an embodiment of a holder according to the invention. Identical parts are indicated by

the same numerals in the various Figures.

[0022] The holder functions to support a laptop computer 1, which laptop computer can be adjusted in various positions, i.e. angles with respect to a supporting surface, by the user.

[0023] The holder 10 is made up of a first plate member 11, which functions to support the housing of the laptop computer 1, as is clearly shown in Figures 1-3.

[0024] The first plate member 11 has circumferential edges 11a-11b-11c-11d. More in particular, said circumferential edges also define the outer boundaries of the holder in the collapsed position thereof.

[0025] In addition to the first plate member 11, which functions to support the housing of the laptop computer, the holder 10 also comprises a support 12, which is connected to the first plate member by means of hinges 12d and which can hinge out of the plane of the first plate member 11. To this end the support 12, which is embodied as a second plate member, has been cut free from the first plate member 11 by forming cuts 11e and 12c-13a so as to enable the support to hinge about the hinges 12d.

[0026] As is clearly shown in Figure 1, and more in particular in Figure 3, the second plate member 12 rests on the supporting surface with the edge 11d thereof.

[0027] Furthermore, the holder 10 comprises adjusting means 13 for adjusting the angle of the holder (the first plate member 11) with respect to the supporting surface, which adjusting means 13 are embodied as a third plate member 13. Said third plate member 13 can hinge about the hinge 13e from the plane of the second plate member of 12 as a result of the third plate member 13 being separated from the second plate member 12 and the first plate member 11 via cuts 12c-13a.

[0028] The adjusting means 13 comprise a front part 13c, which extends in the direction of the user in the extended position as shown in Figures 1 and 2.

[0029] The third plate member 13 is provided with several parallel slots 13d, into which an upright projection 14a (Figure 2) can slip, which is used in adjusting the angle of the holder 10 with respect to the supporting surface, and consequently also the angle of the computer 1 with respect to the user. Said projection 14a is formed on the edge 11c of the first plate member 11. Thus it is possible to use the laptop computer in a fixed position, in which the laptop computer is connected to an additional ergonomic keyboard and a mouse, which provides a more ergonomic posture for the user of the computer while working, thus preventing all kinds of physical complaints, such as RSI.

[0030] Figure 4 shows a partial view of the first plate member 11 of an embodiment of a holder for a laptop computer, in which the holder comprises means 15a-15b for supporting the laptop computer or one or more sheets of paper. With this embodiment, the holder is not only intended for use as a laptop computer support, but it may also function as a document holder. To that end, the sup-

porting means 15a-15b can be moved from the plane of the first plate member 11, more in particular, said supporting means can hinge out of the plane of a first plate member. More specifically and in accordance with the inventive concept underlying the holder according to the invention, supporting means 15a-15b are integrated in the first plate member 11.

[0031] As Figure 4 shows, the supporting means are elongated or strip-shaped, which strip-shaped elements are hingedly connected to the first plate member 11 at the location of one cross side 21. The remainder of the circumferential edge 20 of the supporting element 15a-15b has been cut free from the first plate member 11, whilst the strip-shaped element is provided with a hinge at the position indicated at 22, as a result of which the strip-shaped element can deform from the plane of the first plate member 11. To that end, the free end 15c can move upwards from the plane of the first plate member 11 and be inserted into a slot 15d formed in the plate member 11 as a result of the strip-shaped element 15a-15b hinging about the hinges 21 and 22.

[0032] The strip-shaped element 15a-15b extends upwards from the plate member 11, therefore, and can thus function as a stop for a laptop computer or sheets of paper, as the case may be.

[0033] An alternative embodiment is shown in Figure 4b, which shows an additional, separate plate member 25 having the same external dimensions as the first plate member 11. Both the supporting means 15a-15b and the slots 15d as described above are formed in this plate member 25. The plate member can be connected to the first plate member 11 by suitable means (clamped connections, snap connections or Velcro) and function as an additional, solid support for a laptop computer. The extent to which the external dimensions increase as a result of the presence of this additional part is minimal, since the first plate member 25 can also be designed as a very flat element.

[0034] It is possible to form the holder in one piece, using a laminated material consisting of two outer layers 40a-40b, for example of a metal, with a layer 41 of a synthetic material present therebetween. See Figures 5a-5c.

[0035] A hinge 43 as shown in Figure 5c is formed by cutting away the metal 40a-40b at the location of 42a-42b on either side of the plate material. In this way it is possible to form the holder according to the invention of one plate material without using additional hinge means and connecting means, wherein hinging movement of the various plate members 11, 12 and 13 with respect to each other and corresponding hinging movement of the supporting means 15a-15b is made possible by cutting the material away in whole or in part.

[0036] Thus it is possible to obtain a very light and compact holder for a laptop computer whose spatial dimensions are minimal in the collapsed position thereof and which is thus easy to take along, for example in a briefcase.

[0037] In addition to that it is possible to integrate the holder in the housing of the laptop computer 1, for example by forming the housing from the material as shown in Figures 5a-5c.

[0038] The specific construction of the holder as described above makes it possible - in contrast to holders of similar construction - to make the holder in one piece.

Claims

1. A holder (10), for example for a laptop computer (1), comprising at least one first plate member (11) for receiving or supporting the computer, the external dimensions of said first plate member determining the external dimensions of the holder in the collapsed position, as well as a support embodied as a second plate member (12) which is hinged to the first plate member, which support rests on the supporting surface with one edge (12e), as well as adjusting means (13-14) for adjusting the angle between said first plate and said supporting surface, **characterized in that** the adjusting means are embodied as a third plate member (13) that can hinge out of the plane of said support and mate with an edge (11c) of the first plate member by which first plate member (11) rests on the supporting surface.
2. A holder according to claim 1, **characterized in that** the adjusting means comprise at least one slot (13d) formed in the third plate member, which slot mates with a projection (14a) extending from the edge of the first plate member.
3. A holder according to claim 2, **characterized in that** the adjusting means comprise several parallel slots formed in the third plate member.
4. A holder according to any one or more of the preceding claims, **characterized in that** the first plate member is provided with an upright flange for supporting an edge of the laptop computer.
5. A holder according to any one or more of the preceding claims, **characterized in that** the first plate member is provided with supporting means (15a-15b).
6. A holder according to claim 5, **characterized in that** the supporting means can be moved from the plane of said first plate member.
7. A holder according to claim 6, **characterized in that** the supporting means can hinge out of the plane of the first plate member.
8. A holder according to any one or more of the claims 5-7, **characterized in that** the supporting means form an integral part of the first plate member.
9. A holder according to any one or more of the claims 5-8, **characterized in that** the supporting means are strip-shaped elements (15a-15b), which strip-shaped elements are hinged to the first plate member at one cross side.
10. A holder according to claim 9, **characterized in that** the free end (15c) of each strip-shaped element can be received in a slot (15d) formed in the first plate member.
11. A holder according to any one or more of the preceding claims, **characterized in that** the holder comprises a fourth plate member (25) to be placed on top of the first plate member, which fourth plate member is provided with supporting means according to any one or more of the claims 5-10, as well as with a slot (15d) according to claim 10.
12. A holder according to any one or more of the preceding claims, **characterized in that** the holder is made of a laminated plate-shaped material consisting of two outer layers (40a-40b) of a metal with a layer of synthetic material (41) present therebetween.
13. A holder according to claim 12, **characterized in that** the hinges (42a-42b) are obtained by locally removing metal from the two outer layers (40a-40b) on either side of the layer (41) of synthetic material, for example by means of a milling operation.
14. A holder according to any one or more of the preceding claims, **characterized in that** the holder is integrated in the housing of the laptop computer.
15. A holder according to any one or more of the preceding claims, **characterized in that** all the parts of the holder lie in the plane of the first plate member (11).
16. A holder according to any one or more of the preceding claims, **characterized in that** the support is embodied as a second plate member that can hinge out of the plane of said first plate member.
17. A laptop computer comprising a holder according to any one or more of the preceding claims, which is integrated in the housing of the laptop computer.

Patentansprüche

1. Halterung (10), beispielsweise für einen Laptop-Computer (1), welche mindestens ein erstes Plattenbauteil (11) zur Aufnahme oder Abstützung des

Computers aufweist, wobei die Außenabmessungen des ersten Plattenbauteils die Außenabmessungen der Halterung in der zusammengeklappten Stellung bestimmen, und eine Stütze (12), welche als ein zweites Plattenbauteil ausgebildet ist, welches mittels eines Scharniers an dem ersten Plattenbauteil befestigt ist, wobei die Stütze mit einer Kante (12e) auf der Stützfläche lagert, sowie eine Einstell- bzw. Justiervorrichtung (13-14) zur Einstellung des Winkels zwischen dem ersten Plattenbauteil und der Stützfläche, **dadurch gekennzeichnet, dass** die Einstell- bzw. Justiervorrichtung als drittes Plattenbauteil (13) ausgebildet ist, welches sich außerhalb der Ebene der Stütze einhängen kann und sich mit einer Kante (11 c) des ersten Plattenbauteils verbindet, wodurch das erste Plattenbauteil (11) auf der Stützfläche aufliegt.

2. Halterung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Einstell- bzw. Justiervorrichtung mindestens einen in dem dritten Plattenbauteil ausgebildeten Schlitz (13d) aufweist, welcher mit einem sich von der Kante des ersten Plattenbauteils erstreckenden Vorsprung (14a) in Eingriff gelangt.
3. Halterung nach Anspruch 2, **dadurch gekennzeichnet, dass** die Einstell- bzw. Justiervorrichtung mehrere in dem dritten Plattenbauteil ausgebildete parallele Schlitze aufweist.
4. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das erste Plattenbauteil mit einem aufrechten Flansch zur Abstützung einer Kante des Laptop-Computers versehen ist.
5. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** das erste Plattenbauteil Stützeinrichtungen (15a-15b) aufweist.
6. Halterung nach Anspruch 5, **dadurch gekennzeichnet, dass** die Stützeinrichtungen von der Ebene bzw. Fläche des ersten Plattenbauteils verlagert bzw. bewegt werden können.
7. Halterung nach Anspruch 6, **dadurch gekennzeichnet, dass** sich die Stützeinrichtungen außerhalb der Ebene bzw. Fläche des ersten Plattenbauteils einhängen können.
8. Halterung nach einem oder mehreren der Ansprüche 5-7, **dadurch gekennzeichnet, dass** die Stützeinrichtungen einen integralen Teil des ersten Plattenbauteils bilden.
9. Halterung nach einem oder mehreren der Ansprüche 5-8, **dadurch gekennzeichnet, dass** die Stütz-

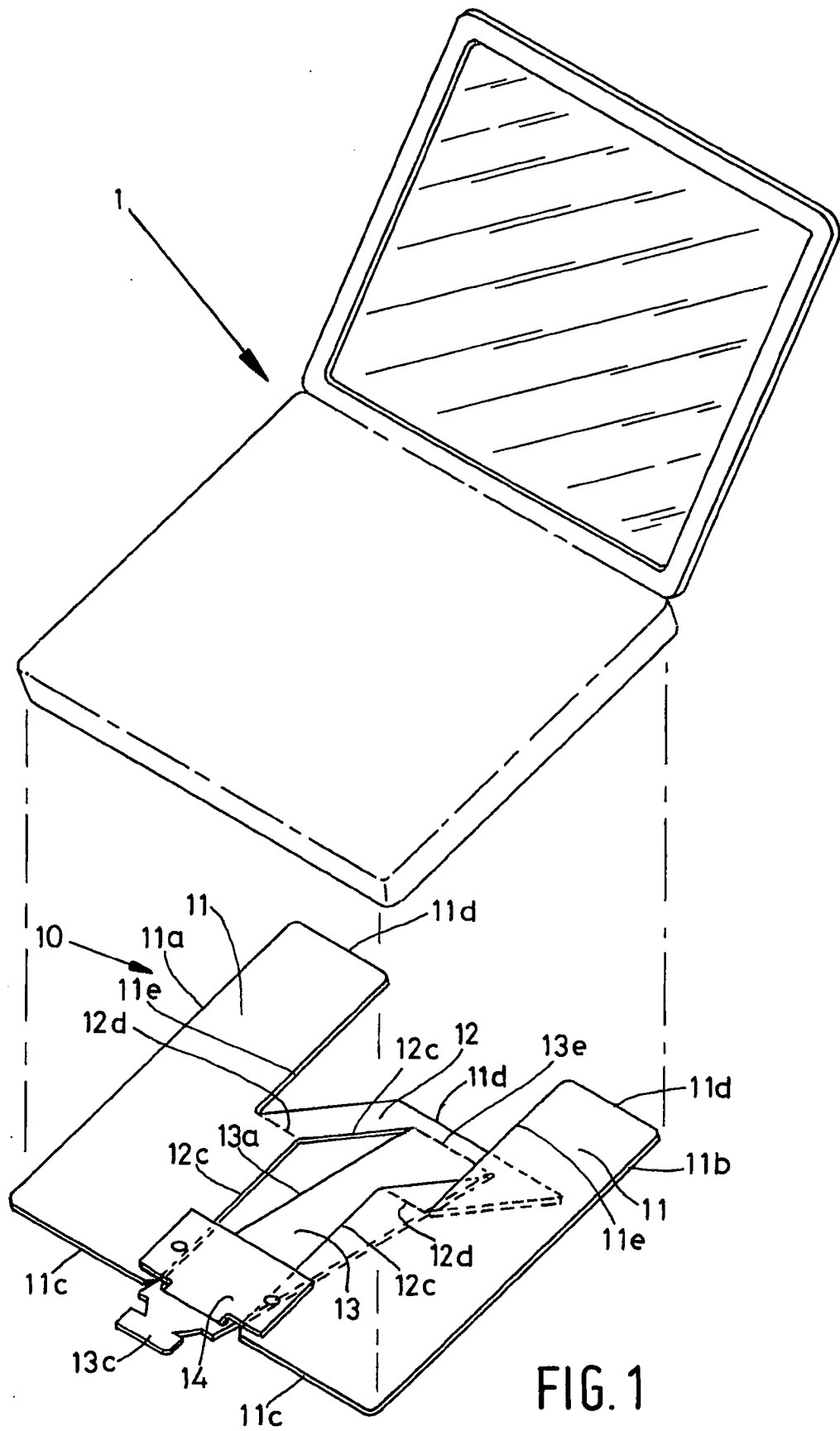
einrichtungen streifenförmige Bauelemente (15a-15b) sind, welche mittels Scharnieren an dem ersten Plattenbauteil an einer Querseite befestigt sind.

10. Halterung nach Anspruch 9, **dadurch gekennzeichnet, dass** das freie Ende (15c) eines jeden streifenförmigen Bauelements in einem in dem ersten Plattenbauteil ausgebildeten Schlitz (15d) aufgenommen werden kann.
11. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Halterung ein auf dem ersten Plattenbauteil anzuordnendes viertes Plattenbauteil (25) aufweist, wobei das vierte Plattenbauteil mit Stützeinrichtungen gemäß einem oder mehreren der Ansprüche 5-10 sowie mit einem Schlitz (15d) gemäß Anspruch 10 versehen ist.
12. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Halterung aus einem laminierten plattenförmigen Werkstoff hergestellt ist, welcher aus zwei Außenschichten (40a-40b) aus Metall mit einer Zwischenschicht aus Kunststoff besteht.
13. Halterung nach Anspruch 12, **dadurch gekennzeichnet, dass** die Scharniere (42a-42b) durch lokales Entfernen von Metall von den beiden Außenschichten (40a-40b) auf beiden Seiten der Schicht (41) aus Kunststoff erhalten werden, beispielsweise mittels eines Fräsvorgangs.
14. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Halterung in das Gehäuse des Laptop-Computers integriert ist.
15. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** alle Teile der Halterung in der Ebene bzw. Fläche des ersten Plattenbauteils (11) liegen.
16. Halterung nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Abstützung als zweites Plattenbauteil ausgebildet ist, welches sich außerhalb der Ebene bzw. Fläche des ersten Plattenbauteils einhängen kann.
17. Laptop-Computer, welcher eine Halterung gemäß einem oder mehreren der vorhergehenden Ansprüche aufweist, wobei die Halterung in das Gehäuse des Laptop-Computers integriert ist.

Revendications

1. Support (10), par exemple pour un ordinateur porta-

- ble (1), comprenant au moins un premier élément de plaque (11) pour recevoir ou supporter l'ordinateur, les dimensions externes dudit premier élément de plaque déterminant les dimensions externes du support dans la position repliée, ainsi qu'un soutien réalisé sous forme de deuxième élément de plaque (12) qui est articulé au premier élément de plaque, lequel soutien repose sur la surface de support avec un bord (12e), ainsi que des moyens de réglage (13 et 14) pour régler l'angle entre ledit premier élément de plaque et ladite surface de support, **caractérisé en ce que** les moyens de réglage sont réalisés sous forme de troisième élément de plaque (13) qui peut s'articuler hors du plan dudit soutien et s'accoupler avec un bord (11c) du premier élément de plaque par lequel le premier élément de plaque (11) repose sur la surface de support.
2. Support selon la revendication 1, **caractérisé en ce que** les moyens de réglage comprennent au moins une fente (13d) formée dans le troisième élément de plaque, laquelle fente s'accouple avec une saillie (14a) s'étendant à partir du bord du premier élément de plaque.
 3. Support selon la revendication 2, **caractérisé en ce que** les moyens de réglage comprennent plusieurs fentes parallèles formées dans le troisième élément de plaque.
 4. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le premier élément de plaque est pourvu d'une bride verticale pour supporter un bord de l'ordinateur portable.
 5. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le premier élément de plaque est pourvu de moyens de support (15a et 15b).
 6. Support selon la revendication 5, **caractérisé en ce que** les moyens de support peuvent être déplacés à partir du plan dudit premier élément de plaque.
 7. Support selon la revendication 6, **caractérisé en ce que** les moyens de support peuvent s'articuler hors du plan du premier élément de plaque.
 8. Support selon une ou plusieurs quelconques des revendications 5 à 7, **caractérisé en ce que** les moyens de support forment une partie intégrante du premier élément de plaque.
 9. Support selon une ou plusieurs quelconques des revendications 5 à 8, **caractérisé en ce que** les moyens de support sont des éléments en forme de bande (15a et 15b), lesquels éléments en forme de bande sont articulés au premier élément de plaque sur un côté transversal.
 10. Support selon la revendication 9, **caractérisé en ce que** l'extrémité libre (15c) de chaque élément en forme de bande peut être reçue dans une fente (15d) formée dans le premier élément de plaque.
 11. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le support comprend un quatrième élément de plaque (25) destiné à être positionné par-dessus le premier élément de plaque, lequel quatrième élément de plaque est pourvu de moyens de support selon une ou plusieurs quelconques des revendications 5 à 10, ainsi que d'une fente (15d) selon la revendication 10.
 12. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le support est fait d'un matériau en forme de plaque stratifié constitué de deux couches extérieures (40a et 40b) d'un métal avec une couche de matériau synthétique (41) présente entre celles-ci.
 13. Support selon la revendication 12, **caractérisé en ce que** les articulations (42a et 42b) sont obtenues en éliminant localement du métal à partir des deux couches extérieures (40a et 40b) de chaque côté de la couche (41) de matériau synthétique, par exemple au moyen d'une opération de fraisage.
 14. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le support est intégré dans le boîtier de l'ordinateur portable.
 15. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** toutes les parties du support se trouvent dans le plan du premier élément de plaque (11).
 16. Support selon une ou plusieurs quelconques des revendications précédentes, **caractérisé en ce que** le soutien est réalisé sous forme de deuxième élément de plaque qui peut s'articuler hors du plan dudit premier élément de plaque.
 17. Ordinateur portable comprenant un support selon une ou plusieurs quelconques des revendications précédentes, qui est intégré dans le boîtier de l'ordinateur portable.



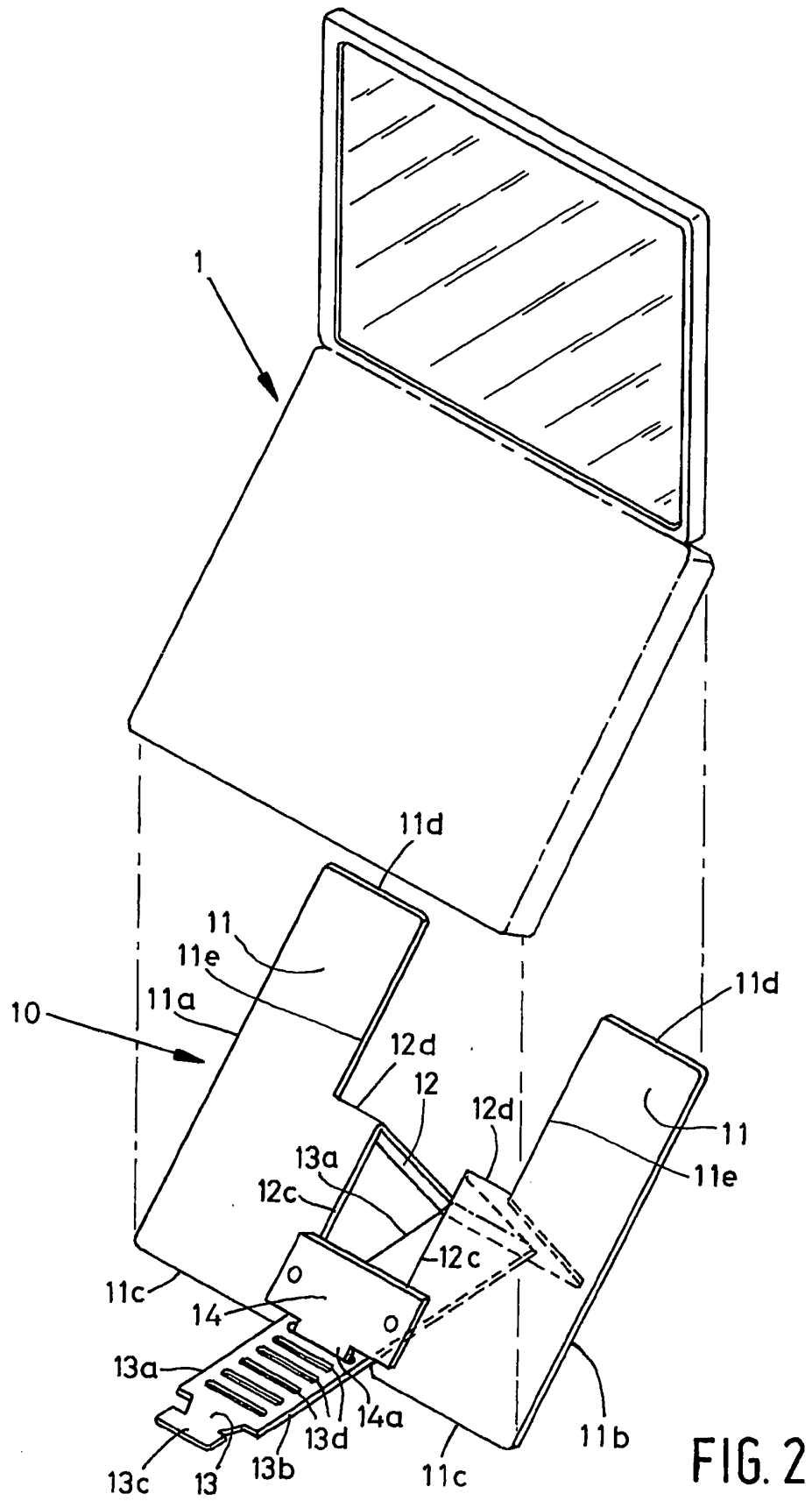


FIG. 2

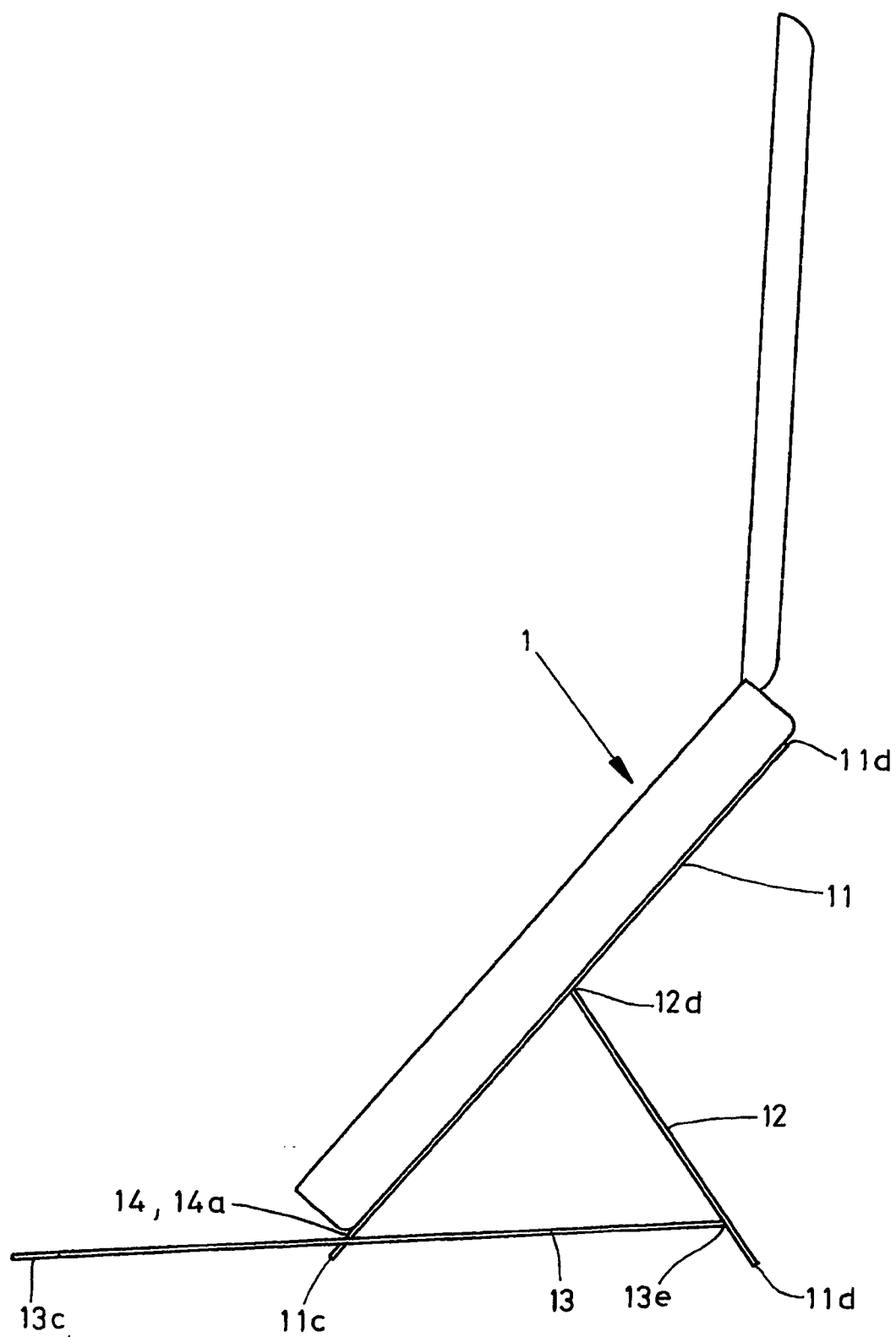


FIG. 3

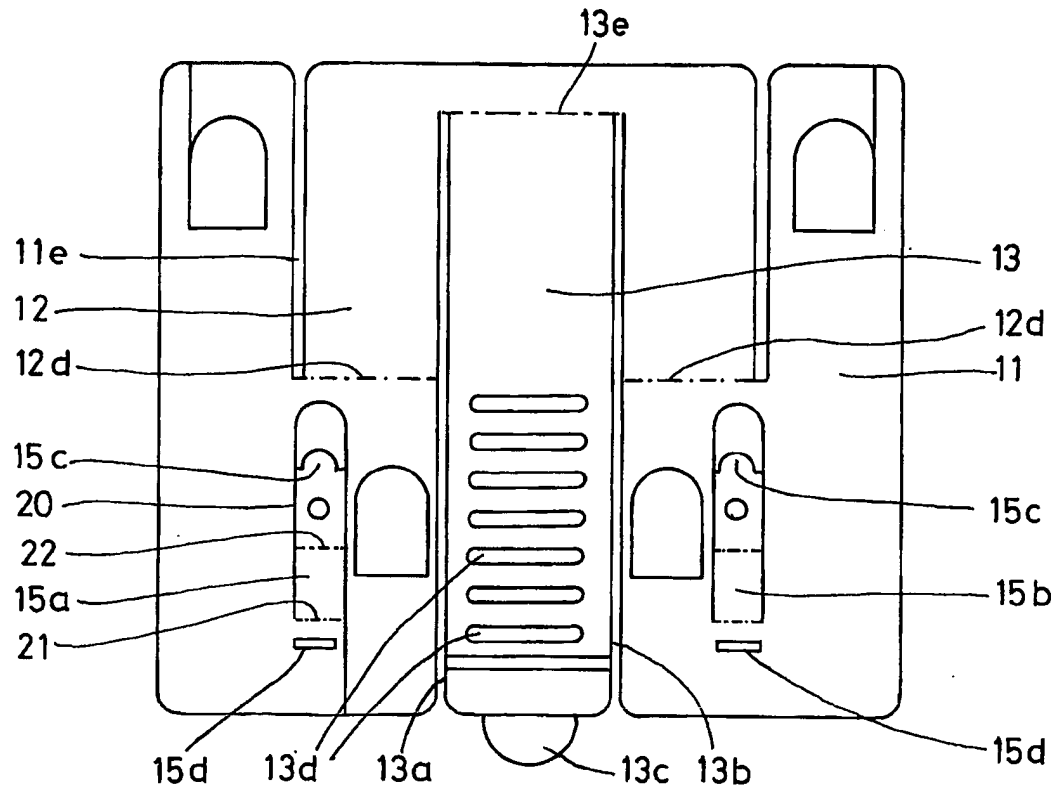


FIG. 4a

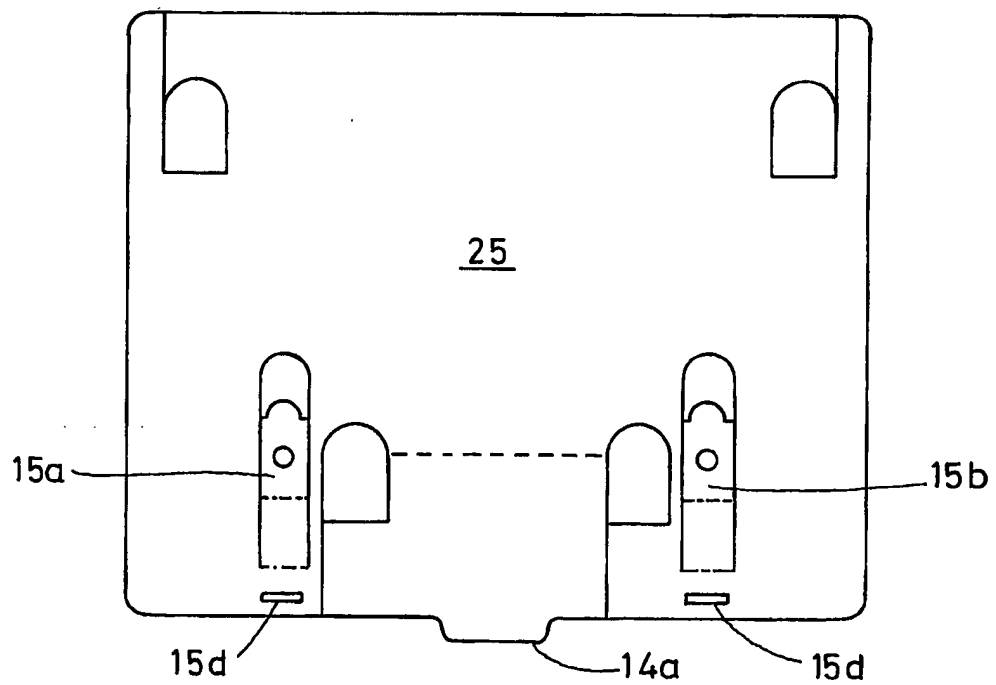


FIG. 4b

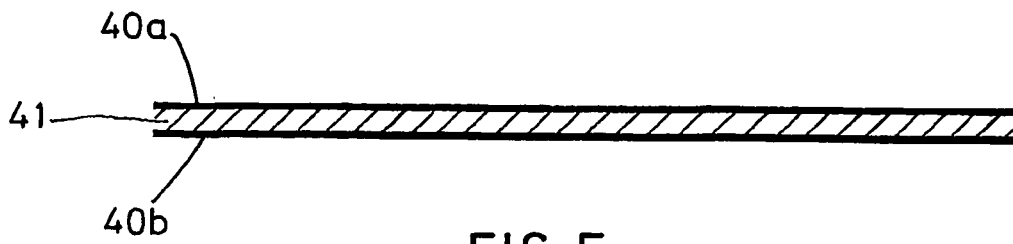


FIG. 5a

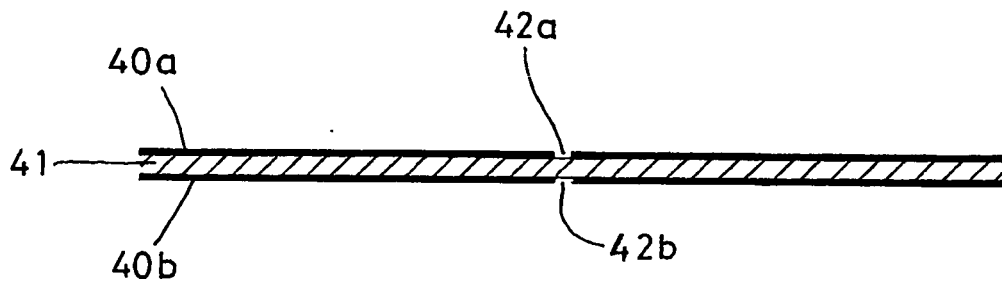


FIG. 5b

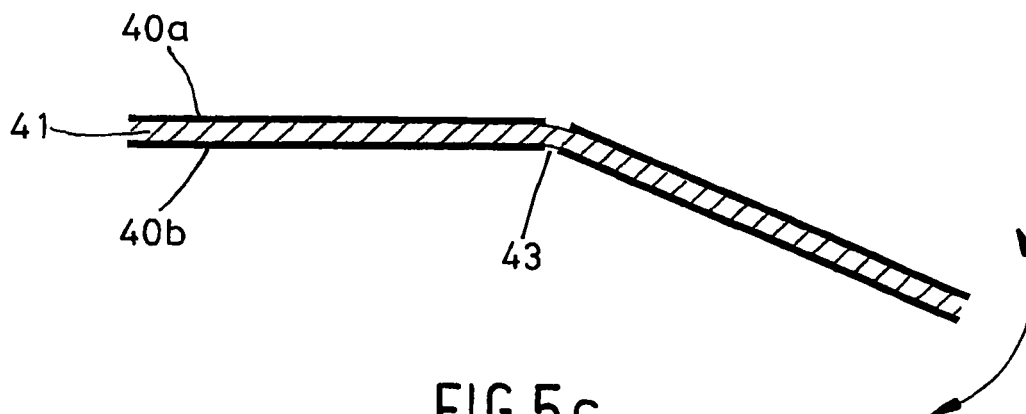


FIG. 5c

REFERENCES CITED IN THE DESCRIPTION

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