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(54) **Portable multiple metal display**

(57) This invention concerns a portable display for wooden strips or other laminar objects consisting of one

or more sturdy sheet plates hinged like a book by means of special multiple hinges.

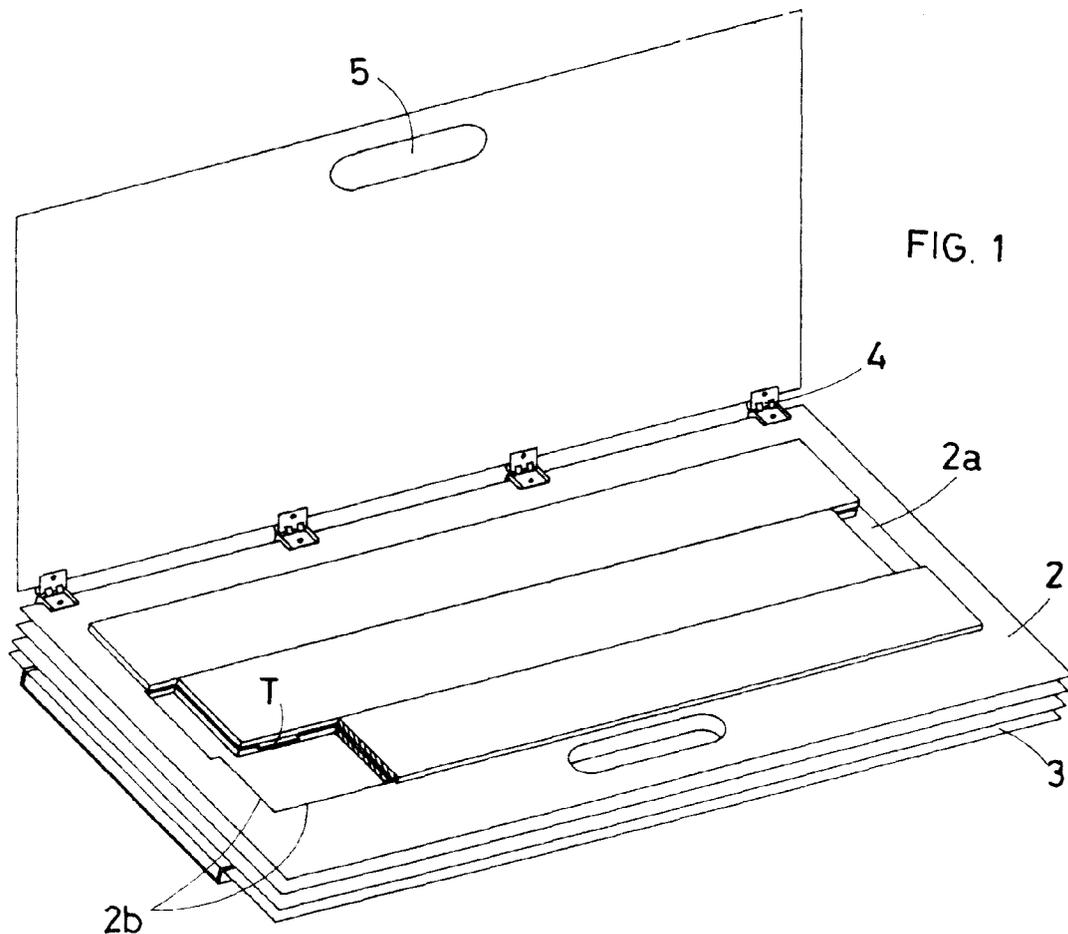


FIG. 1

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Description

This patent application concerns a portable display consisting of several plates hinged like a book.

It is common knowledge that in sales it is necessary to show goods to potential customers.

This undoubtedly also applies to the field of wooden flooring where a potential customer must see the appearance and structure of the parquet before deciding the purchase.

Wooden strips have for this purpose been displayed very effectively on fixed stands at the sales points.

The same can not be said however for the way these products are displayed to potential customers at their domicile, be this the end user or the retailer.

These flooring lists are shown to these potential customers in a rather empirical and certainly unattractive way: at times a specimen of the strip is shown to the customer without any display at all.

In other cases the strips are glued to thick cardboard supports which deteriorate easily; in addition the cardboard support on which the wooden strip is glued is subject to dimensional deformation as a result of humidity which compromises the coupling between cardboard support and the wooden strip glued to the same thus penalising the appearance of the wood strips themselves.

The display according to the invention is designed to display linear objects, preferably wooden strips but other items as well, in the best possible way.

The display in question consists substantially of a multiple page album whose pages consist of rigid sturdy but lightweight metal sheets.

For this purpose the most suitable and attractive material for realising the display according to the invention is undoubtedly aluminium.

As will be explained in the description, the wooden strips can be fitted to these metal plates in different ways not only by gluing them to the same but also by using windows or compartments realised on the metal sheets.

Moreover the particular structure of these metal sheets has led to the design of a special multiple hinge which not only "binds" the metal sheets like an "album" but also allows the user to open two consecutive sheets of this "album" by 180°.

To carry the display in question, a practical slot which acts as handle is realised on each of the sheets opposite to the hinged edge thus making the item easier to handle and carry.

For major clarity the description of the invention continues with reference to the enclosed drawings which are intended for purposes of illustration and not in a limiting sense whereby:

- figures 1 and 2 are axonometric views of the display opened in order to show the different structure of the internal sheets.
- figure 3 is a side view of the closed display;

- figure 4 is an axonometric view of a section of the multiple hinge used in the display in question;
- figure 5 is an exploded view of figure 4.

5 With reference to figures 1,2 and 3, the display in question consists of a "packet" of metal sheets (1, 2 and 3) acting as pages, bound together and opening like a book thanks to special hinges (4) fixed on one of their longitudinal edges; it being provided that a centre slot (5) acting as a handle and positioned slightly inwards with respect to the longitudinal edge opposite the hing-
10 ing edge, is realised on each page.

In the preferred embodiment (1) one of the pages consists of heavy plate sheet on whose surfaces several
15 flooring strips (L) or other items having similar laminar structure can be glued.

In a second embodiment (2) one of the above pages consists of the same plate sheet having a central win-
20 drow (2a); in this case the flooring strip (any other lam-
inar item) is press fitted into this window (2a).

For this purpose it is necessary to realise a perim-
25 eter groove along the sides of strip (L) into which the
edges (2b) delimiting the window (2a) along the perim-
eter are press fitted in order to realise a male - female
coupling.

It should be noted that said sheet (2) is provided with a window (2a) having a suitable width to house
three adjacent strips (L).

Each of the external strips is in fact coupled on three
30 sides (external longitudinal side and the two transverse
sides) by means of a male - female connection, with the
edges (2b) of the window (2a); the centre strip is on the
other hand supported by the pair of external strips (L)
35 thanks to special (T) tabs half of which are embedded
in the longitudinal groove of the centre strip and the oth-
er half in the adjacent groove of each external strip.

This particular page (2) is designed to display both
faces of the strips.

In a third embodiment (3), one of the above pages
40 (preferably the pages used as first and/or second cover
pages) consist of a metal sheet designed with a sunken
longitudinal centre section (3a); substantially this com-
partment allows the page (3) to become a tray in which
one or more wooden strips or other laminar items can
45 be fitted.

For this purpose, two soft rubber strips (3b) are
housed transversally and glued at the two ends of this
longitudinal compartment (3a); it should be noted in ad-
dition that generally the depth of the compartment (3a)
50 must be almost equal to the thickness of the flooring
strips or other laminar items to be fitted in the same.

Moreover, the length of the strips housed in this
compartment should be slightly more than the centre to
centre distance of the above two rubber strips (3b).

This ensures that the wooden strip housed in com-
55 partment (3a) is spontaneously fixed between the two
rubber strips (3b) which bend elastically in the case of
interference of the longitudinal ends of the wooden strip

which compresses the width.

The same elastic property of these strips (3b) also ensure that the same tend to contrast said interference when they return to their normal position; in this way they produce a rather strong opposing pressure against the two longitudinal ends of the wooden strip which causes the same to be secured in the housing compartment (3a).

It is thus evident that it is extremely easy to remove the strip by hand when it is necessary for example to examine not only the surface of the item but also its internal structure; it is sufficient to pull the strip upwards in order to release the two longitudinal ends from the hold of the rubber strips (3b).

As mentioned previously, the metal sheets in question are "bound" by means of a special multiple modular hinge (4) in the sense that the same consists of only two basic components which can be assembled from time to time into the number of required components according to the number of metal sheets to "bind".

In other words, two or more of these multiple hinges (4) are used on each display.

With particular reference to figures 4 and 5, the first of these basic modules consists of a bracket (6) having "U" shaped cross-section provided with two opposing tabs (6a) separated by a narrow centre slot (6b) which houses a section of the longitudinal edge of one of the pages.

A stiffening rib (6c) is provided on the back of said bracket (6).

The body of the two tabs (6a) is crossed by a through hole (6d) used to house a fixing screw (7) which obviously also passes through a hole realised for this purpose in the section of the metal sheet housed in the above slot (6b).

The external face of each of said tabs (6a) is provided with two longitudinal plates (6e) which act as spacers between the two brackets (6) mounted consecutively on the same multiple hinge (4) - as shown in figure 3 - but which also delimit a small compartment on the exterior of each tab (6a) in which the end of the screw (7) is housed.

In particular, the exterior of one of two tabs (6a) is provided with a collar which delimits the hole (6d) and which houses the nut to fix the screw (7) securely.

The back of each of the tabs (6a) of each bracket (6) is also provided with a centre lug (6f) crossed by a through hole; moreover, this hole is perfectly aligned with another two holes realised at the base of the two plates (6e) delimiting the exterior face of the tabs (6a).

A pair of small connecting rods (8) are used to connect one bracket (6) to the next bracket; each of said connecting rods (8) is housed precisely between one of the plates (6e) of tab (6a) and the centre lug (6f).

When the two connecting rods (8) are in this position, the same are pivoted by means of a single pin (8a) which passes simultaneously through the holes realised at the base of the plates (6e), through the centre lug (6f)

and obviously through the holes realised for this purpose at the end of the two connecting rods (8).

When one of the ends of the two connecting rods (8) is pivoted at the back to one of the brackets (6) it is obviously necessary to pivot the opposing end of the same connecting rods (8) to the adjacent bracket.

Each of the brackets (6) is provided on each side with a pair of said connecting rods (8) in that the bracket (6) is always fitted on a sheet of the display in question in an intermediate position between the previous and the successive sheets.

The second component of the multiple hinge (4) is a second bracket (9) having a structure similar to that of bracket (6), but with an inferior thickness.

This second bracket also has two opposing tabs (9a) separated by a narrow intermediate notch (9b) and are joined at the back by a rib (9c) delimited by two edges with holes (9d).

This second bracket (9) is used only to support the first and the last pages of the display in question and must therefore permit pivoting of only one pair of connecting rods (8).

In this regard it should be noted that said rib (9c) is provided with two housings separated by a lug (9e) with holes designed to house the connecting rods (8) and to permit pivoting by means of pin (8a) which passes through the end edges (9d) of the rib (9c), the intermediate lug (9e) with holes as well as the holes at the ends of the connecting rods (8).

The two tabs (9a) of the second bracket (9) are also provided with holes to permit the passage of a screw (10) which fixes the metal sheet housed in slot (9b); it should be noted that the exterior inward turning face of the tab (9a) of the display is also provided with a collar housing the nut of the above fixing screw (10).

This collar does not prevent the complete closing of the pages of the display in question in that the same are housed, without interfering or creating bulk, in the compartment delimited by the two plates (6e) provided on the exterior of tab (6a) of the adjacent bracket (6).

Claims

1. A portable multiple metal display characterised by sheets (1) and/or sheets (2) and/or sheets (3) joined together like a book by means of one or more multiple hinges; it being provided that the preferred embodiment consists of a metal plate sheet (1) having a centre slot (5) positioned slightly inwards with respect to the longitudinal edge opposite to the hinging edge; it being provided that the second page model consists of a metal plate sheet (2) having a wide window (2a) at the centre and having a centre slot (5) positioned slightly inwards with respect to the longitudinal edge opposite to the hinging edge; it being provided that the third page model consists of a metal plate sheet (3) having a sunken longitu-

dinal centre section (3a) at whose ends two soft rubber strips (3b) are housed and fixed transversely as well as a centre slot (5) positioned slightly inwards with respect to the longitudinal edge opposite to the hinging edge.

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2. A portable multiple sheet metal display according to claim 1 characterised in that the multiple centre hinge (4) used has a modular structure obtained by joining together, in the number of items required and by means of connecting rods (8), the following two basic components:

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- * a first bracket (6) having a "U" shaped cross-section consisting of two opposed tabs (6a) with holes and separated by a narrow intermediate notch (6b) and a rear stiffening rib (6c); it being provided that the exterior face of said tabs (6a) is provided with two longitudinal plates (6e) each having a through hole at its rear end; it being provided also that the holes of the plates (6e) are perfectly aligned with a hole realised on a lug (6f) projecting from the rib (6c) on each of the sides of the bracket (6); it being provided finally that the above plates (6e) and the lug (6f) positioned between the same form two consecutive housings on each side of bracket (6) which house two adjacent connecting rods (8) pivoted in the housings by means of a standard pin (8a) which not only passes through the holes on the same but also the holes of the plates (6e) and the hole of the lug (6f).
- * a second bracket (9), also having a "U" shaped cross-section and consisting of two opposing tabs (9a) with holes, separated by a narrow intermediate notch (9b) and by a rear stiffening rib (9c); it being provided that said rib (9c) is provided at the ends with two edges (9d) with holes and at the centre with a lug (9e) with holes, which together form two consecutive housings which house two connecting rods (8) pivoted in said housings by means of a standard pin (8a) which not only passes through the holes provided on the same, but also passes through the holes of the edges (9d) and the hole of the lug (9e).

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