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(54) **Album with flat-opening sheets**

(57) Photo album with a particular way of binding sheets (14) provided with edges having a single crease (16) and recesses for mounting onto pin-shaped members (12) of an inner back element (13,19), in which in any case after opening the album, said creases (16) of two successive sheets (14) will abut tightly and closely

and without any tension in the sheets (14), in which said sheets (14) can comprise photographically sensitive material, so that said photographic image can extend across two successive sheets (14) when opening the album without any appreciable or disturbing seam in the middle of said image.

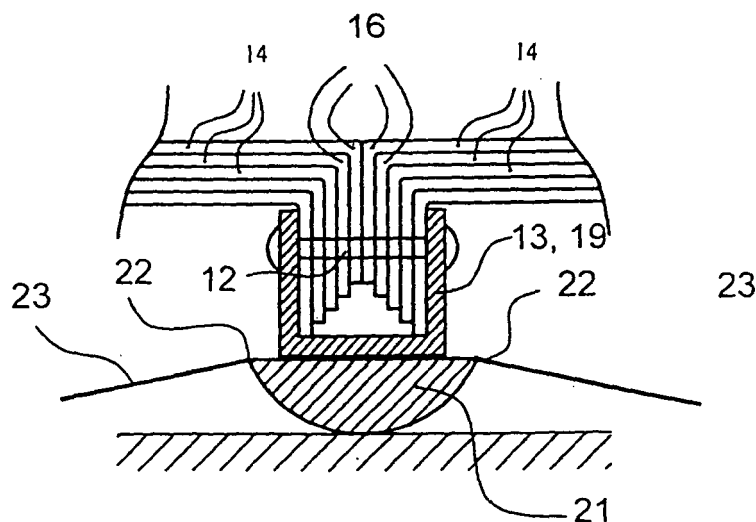


FIG. 7A.

Description

[0001] The invention relates to an album, such as a photo album, comprising a composite back element, which is composed of a U-shaped inner back element having pin-shaped members for receiving sheets, which to that end has provisions for this along one side, while an additional back finishing element can be present, said composite back element being connected to jacket or cover sheets by means of hinges.

[0002] Albums having replaceable sheets are mostly kept together of bound by book screws. The area across which a sheet will fold is necessarily kept wide, since the sheets lie across one another. This is achieved by e.g. producing a number of creases at one side of the sheets next to each other, or, when employing a so-called binding strip, producing a wide hinge.

[0003] Binding sheets by means of book screws is popular because the sheets can be fastened in the album without any skill and special tools and the sheets may later be replaced in a simple way. Therefore, the system is also called a loose-leafed binding system.

[0004] A disadvantage of this way of binding is that illustrations extending across two pages, are interrupted in the middle by several creases or hinges or one very wide hinge. Lately, this is experienced as a drawback or a great disadvantage, because sticking photos in albums is increasingly replaced by printed pages or sheets of photographic paper onto which an image is projected.

[0005] The object of the present invention is to provide a photo album with a new way of binding the sheets, in which album sheets are replaceable and illustrations extending across two adjacent pages connect properly and closely abut one another.

[0006] Further, said album should have a binding system with all characterizing benefits of the loose-leafed binding system, but in which one single folding area at some distance from the fastening edge of each sheet, is narrow and therefore practically forms a whole with the corresponding narrow folding area of the next sheet, allowing illustrations extending across two sheets to visually present an entity.

[0007] For achieving the object described above, this means that creases of sheets will closely abut each other when opening the album, the sheets and inner back element are shaped such that said provisions at one side of the sheets comprise a narrow crease situated on a certain distance from the edge, thus producing one single pivoting edge at said sheets, said pivoting edge having recesses for positioning said sheets on the pin-shaped members in the inner back element, in which on opening the album, the lower side of the edges as well as the creases constitute a stepped stacking across a certain angle, the bottom of the inner back element being mounted on said back finishing element.

[0008] The advantage is that the close abutment almost without any seam on opening the album is achieved in an optimum way, in which the lower edges of the sheets

in the inner back element of the first half of the album sheets extend stepwise upwards and the second half of the album sheets extend stepwise downwards, as do the creases. Stacking the successive sheets now no longer produces any tension in the sheet edges.

[0009] Further, the album according to the invention is characterized in that said pin-shaped members comprise straight bush screws with end screw and said recesses in the pivoting edge being slot-shaped rounded recesses.

[0010] The advantage is that said stepwise upward extension of the first half of the lower side of the sheet edges and downward extension of the second half of the lower side of the sheet edges both occur across an angle of approximately 45 degrees. This goes for said creases as well.

[0011] Further, the album according to the invention is characterized in that by means of an axial hinge said inner back element is fastened to the remaining portion of said composite back element.

[0012] The advantage is that said inner back element after leafing-through half the number of sheets, smoothly tilts along and thus will always produce sheets closely and tightly abutting each other.

[0013] The album according to the invention is characterized in that said pin-shaped members are bent pins having screw threads and nuts for fastening to said inner back element, said recesses in the edges having a rounded shape.

[0014] The advantage is that also a suitable tensionless stacking of successive sheets will be achieved in case of a suitably designed bent pin and an appropriate clearance between the rounded recess in the sheet edges and the rounded cross-section of said pin and that the natural stepwise stacking of the extremities of the sheet edges and the creases is obtained across an angle of about 45 degrees.

[0015] Further, the album according to the invention is characterized in that for obtaining a dual edge at one side of the sheets at a certain distance and a dual distance, one single crease is provided, between which creases a coverable adhesive layer is provided, such that the outer edge can be folded back and can be adhered and that then the edge with dual thickness can be provided with said recesses.

[0016] The advantage is that the thickness of photos stuck on the sheets can be compensated completely.

[0017] Further, the album, in particular its composite back element, can be developed further by constructing a flexibly applicable binding back, which can be removably mounted in a U-shaped inner back element, that has its bottom side glued to a connecting plate, in which the U-shaped inner back element is fastened to a rounded outer back element by means of screws, in which the pivoting edge of the cover plates can be clamped between connecting plate and outer back element. Thus, this produces a special binding system.

[0018] Hereinafter, the invention is further explained by way of a preferred embodiment, illustrated in the draw-

ing, in which:

fig. 1 shows a view of a known sheet of an album having several creases;
 fig. 2 shows a cross-section across the inner back element with known sheets of fig. 1;
 fig. 3 shows a view of the sheet of an album according to the invention with one single crease;
 fig. 4 shows a cross-section across the inner back element with the sheet of fig. 3;
 fig. 5 shows a view of the sheet of an album according to a modification of the invention with one single crease;
 fig. 6 shows a cross-section of the inner back element with a sheet of fig. 5;
 figs. 7A and 7B show cross-sections of the inner back element with tilting possibilities with successive cover plates;
 figs. 8A, 8B, 8C show cross-sections of the tilting possibility of the inner back element across a side edge of the body of the U-shaped cross-section; and
 fig. 9 show a perspective view of an axially pivoting suspension of the inner back element.

[0019] Figure 1 shows a view of a known sheet 1 before mounting it in an inner back element 2 (figure 2) said sheet being provided with several creases 3. The edge 4 of the sheet 1 has round holes 5 for mounting onto the straight pin-shaped members 6. Figure 2 shows that, owing to the many creases, the flipped-over sheets 1 do not show a sharp turnover across the edge of the inner back element. This is the state of the art.

[0020] In figure 3, a view of a sheet 8 according to the present invention is shown with one single crease 9. Slots 11 having width B (approximately 6 mm, for example) according to a preferred embodiment of the invention are indicated in the edge 10 having width X (approximately 22 mm, for example). At the edge 10 having slots 11, the sheets 8 are mounted on the pin-shaped members 12 of the inner back element 13 (see fig. 4). After opening the album to the centremost page, the back element remains lying flat and the single crease causes the edge 10 to move slightly upwards through the slot 11 repeatedly, and in doing so, the lower edges 10 slide upwards stepwise, so that the bottom 24, 25 occupies a natural position of an isosceles triangle having base angles α of approximately 45 degrees, in which the creases 9, 16 will always abut one another. When leafing-through further, said inner back element 13 tilts along, as illustrated in figures 8, 9 and 10A and 10B, in which tilting is facilitated by the provision of hinges 20, 26.

[0021] The advantage of sliding up the edges 10 of the sheets 8 stepwise is that the creases 9 of two successive sheets 8 will always tightly and closely connect, almost seamless, which represents the essence of the invention and is clearly illustrated in figure 4.

[0022] Figures 5 and 6 show a modification of the sheet 14 together with an accompanying bent pin-shaped

member 15. Here too, the single crease 16 with the edge 17 and round holes 18 causes the creases to tightly and closely abut one another. Here, the inner back element 19 again has the usual U-shaped cross-section.

[0023] Figures 7A and 7B show a cross-section of the inner back element 13, 19 with back finishing element 21 being connected to the rather schematically shown cover plates 23 through pivot lines 22.

[0024] Figures 8A through 8C show an inner back element 13, 19 being connected to the cover plates 23 by a hinge 22.

[0025] Figure 9 illustrates a perspective view of an axially pivoting suspension of the inner back element 2, 13, 19, which is a suitable way of tilting.

[0026] Finally, it should be emphasized, that preferred embodiments of the invention have been described above and that further modifications and the like are possible without leaving the scope of the invention.

Claims

1. Album, such as a photo album, comprising a composite back element, element, composed of a U-shaped inner back element (2, 13, 19) having pin-shaped members (6, 12, 15) for receiving sheets (1, 8, 14), which to that end has provisions for this along one side, and an additional back finishing element (21) being present, said composite back element being connected to jacket or cover sheets by means of hinges (22), **characterized in that** said provisions at one side of the sheets (8, 14) comprise a narrow crease (9, 16) situated at a certain distance from the edge, thus producing one single pivoting edge (10, 17) at said sheets (8, 14), said pivoting edge (10, 17) having recesses (11, 18) for positioning said sheets (8, 14) on the pin-shaped members (12, 15) in the inner back element (13, 19), in which on opening the album, the lower side (24, 25) of the edges (10, 17) as well as the creases (9, 16) constitute a stepped stacking across an certain angle, the bottom of the inner back element (13, 19) being mounted on said back finishing element (21).
2. Album according to claim 1, **characterized in that** said pin-shaped members (12, 15) are formed by straight bush screws with end screws, said recesses (11, 18) in the pivoting edge (10, 17) being slot-shaped, rounded recesses (11) having a given width (B) and a given length (L).
3. Album according to claim 1, **characterized in that** said inner back element (13, 19) is fastened to the remaining portion of said composite back element by an axial hinge (20).
4. Album according to claim 1, **characterized in that** said back finishing element (21) has a rounded

cross-section turned outwards.

5. Album according to claim 1, **characterized in that** said back finishing element (21) is connected to the cover plates (23) by hinges (22). 5
6. Album according to claim 1, **characterized in that** said pin-shaped members (15) are bent pins with threading and bolt for fastening to said inner back element (19), said recesses (18) in the edges (17) having a round shape. 10
7. Album according to claims 1 and 6, **characterized in that** said provisions at one side of the sheets comprise a binding strip adhered to it. 15
8. Album according to claim 1, **characterized in that** said distance (X) is between 20 and 45 mm, the preferred distance being related to the thickness c.q the number of sheets and being approximately 23 mm. 20
9. Album according to claim 2, **characterized in that** the width (B) of the slot-shaped recesses can be approximately 6 mm, for example, and said length L can be approximately 14 mm for example, with the usual albums having net sheet surfaces of approximately 400 x 400 mm, for example, which, due to closely abutting creases (9, 16) of the two adjacent sheets (8, 14) can bear a projected photographic image of 400 x 800 mm, for example. 25
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10. Album according to claim 1, **characterized in that** for a double edge at one side of the sheets, one single crease is provided at a certain distance (X) and a dual distance (2X), a coverable adhesive layer being provided between said two creases, for folding back and adhering the outer edge, whereupon the dual thickness layer is provided with said recesses (11, 18). 35
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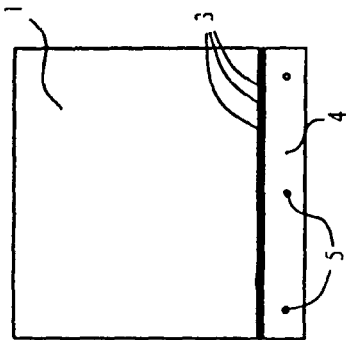


FIG. 1.

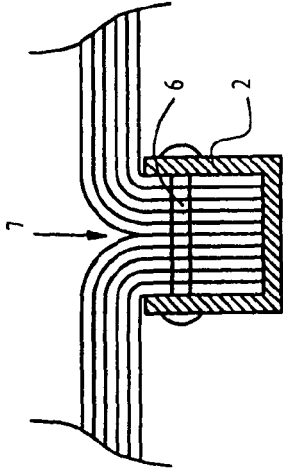


FIG. 2.

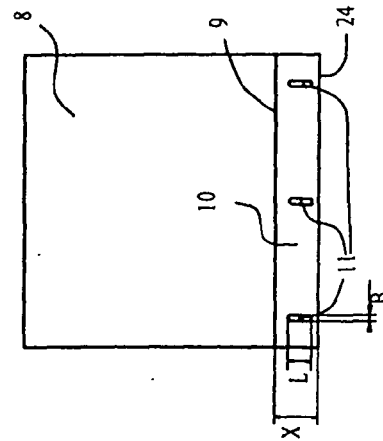


FIG. 3.

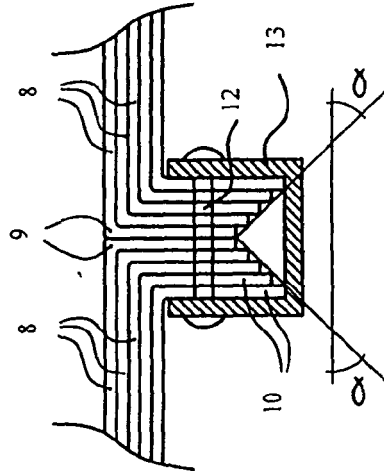


FIG. 4.

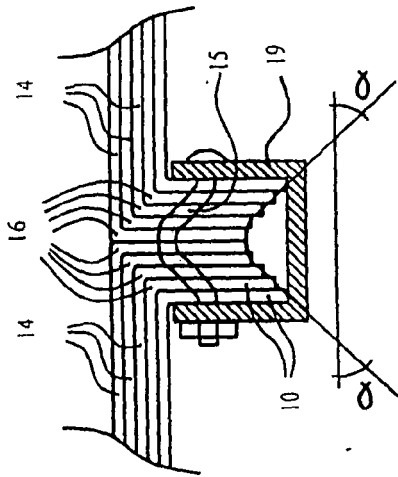


FIG. 6.

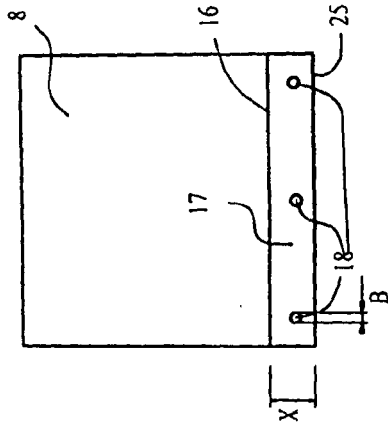


FIG. 5.

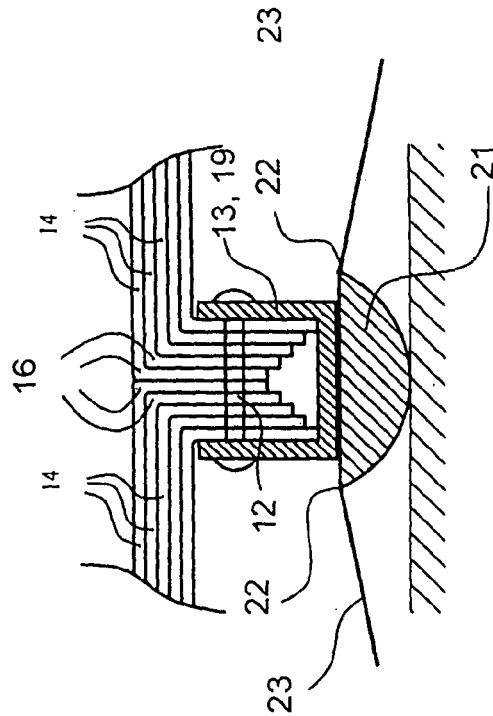


FIG. 7A.

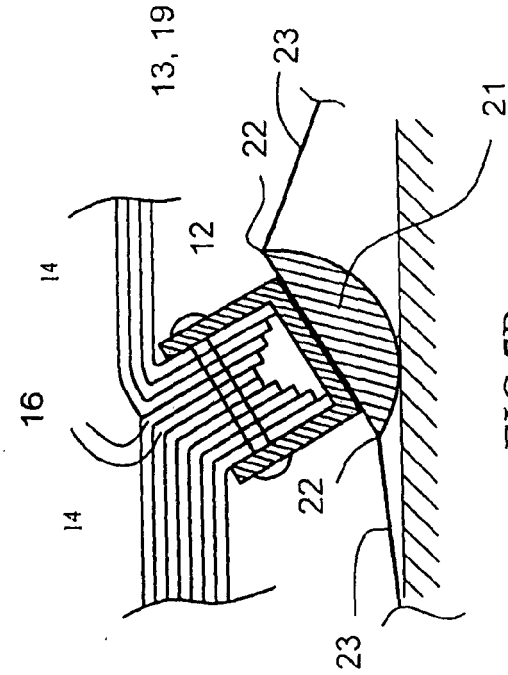
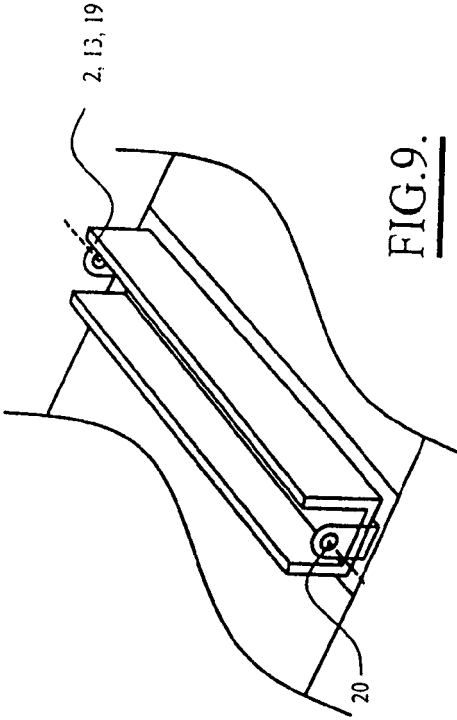
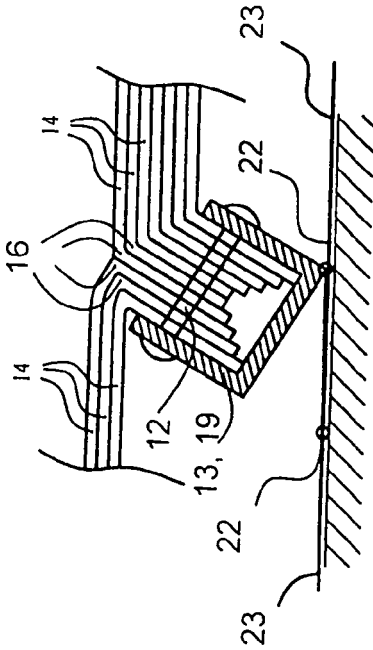
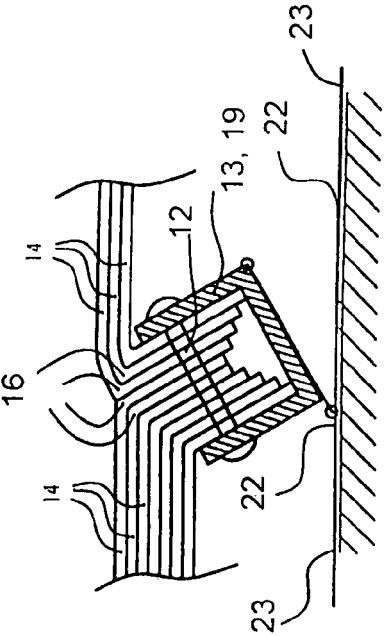
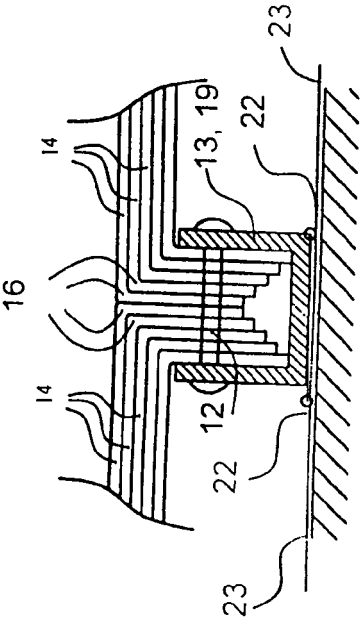


FIG. 7B.





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 07 07 6083

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A	----- GB 125 897 A (BETTS FARRON SMITH [US]) 1 May 1919 (1919-05-01) * page 1, line 30 - page 2, line 13 * * page 2, line 33 - line 44 * * page 2, line 54 - line 57; figures 1,2 *	1-10	
A	----- GB 183 903 A (JOHN MCDONALD HATTERSLEY) 26 July 1922 (1922-07-26) * page 2, line 85 - line 88 * * page 3, line 37 - line 56 * * page 3, line 88 - line 105; figures 1-3 *	1-10	
A	----- US 1 962 407 A (PIERCE BENJAMIN F) 12 June 1934 (1934-06-12) * page 1, line 17 - line 45 * * page 3, line 9 - line 20; figure 9 *	1-10	TECHNICAL FIELDS SEARCHED (IPC) B42D B42F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 June 2008	Examiner Sigurd, Karin
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 (P04/C01)

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

EP 07 07 6083

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11-06-2008

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