Feb. 9, 1943. I. WEINGER 2,310,722

PHOTOGRAPH ALBUM

Filed Oct. 10, 1942

Fig. 1

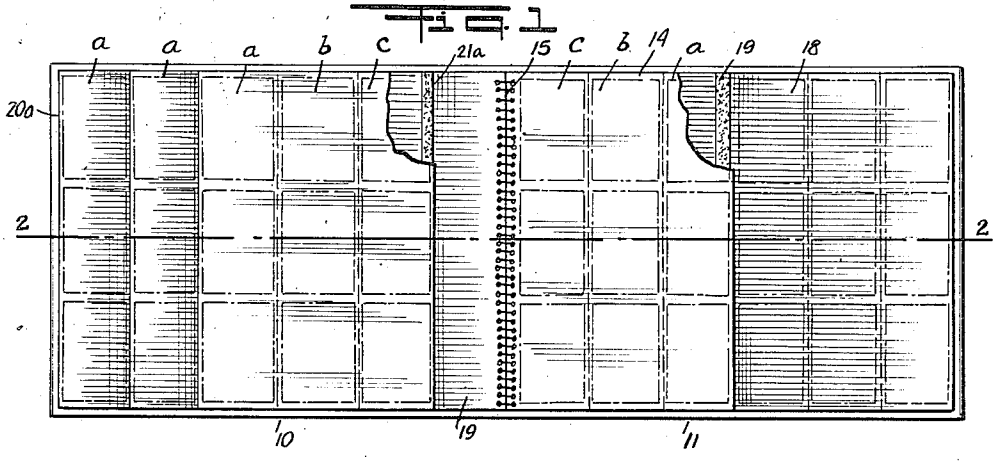


Fig. 2

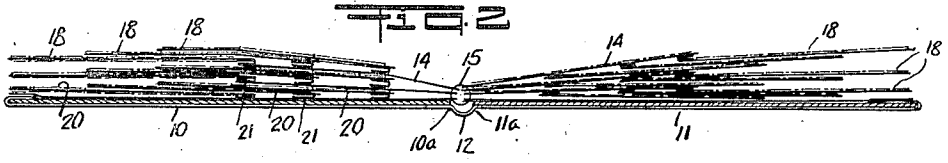
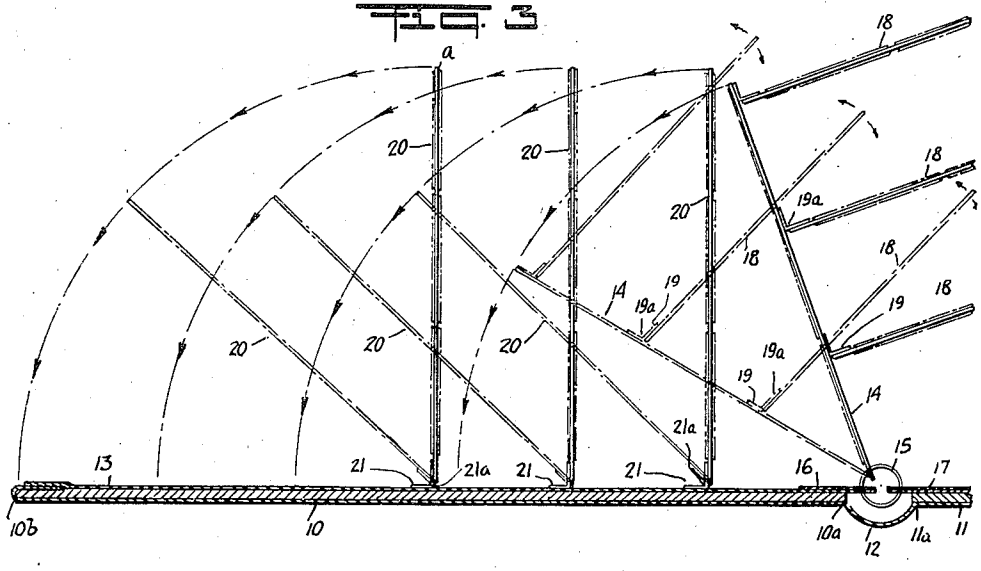


Fig. 3



INVENTOR.

Irving Weinger

BY

Irving Weinger

ATTORNEY

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PHOTOGRAPH ALBUM

Irving Weinger, New York, N. Y., assignor to J. Widder & Co., New York, N. Y., a copartnership comprised of Samuel Widder and William Widder

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6 Claims. (Cl. 281—22)

This invention relates to book construction and is more particularly directed to a method and means of producing so-called display books, as photographic albums and those employed for exhibiting sample color cards and items of a similar nature, to which my invention is especially applicable.

While my invention, as will become manifest, may be utilized in constructing books for various uses, for the purposes of this disclosure, I have elected to present it as it may be practiced in producing a novel and improved type of photographic album, for use in the commercial exhibition of photographs, as well as in the home. This, however, is merely illustrative and is not to be construed in any sense as a limitation of the scope of utility of my invention to this specific use.

As is well known, the conventional photograph album corresponds generally to the standard book construction, in that the leaves are associated with the backbone of the shell for relative hinged movement, the photographs being mounted on both pages of each leaf, to be viewed as the leaves are turned in sequence on their hinge connections. When a leaf is turned, all of the photographs carried on the leaf which it overlies are concealed while only those on the laterally opposite page are visible conjointly with the photographs on the uppermost page of the inverted or turned leaf. Assuming that each page carries four photographs, when the album is opened, the photographs on the first page only will be visible and as the leaf is turned to expose the reverse surface, the four photographs of such surface, together with the like number of photographs on the laterally opposite page will be viewable, those on all of the other pages being concealed by the overlying topmost leaves.

The primary object of this invention is to provide a method and means of constructing books for the display of photographs and other card-like articles mounted on the leaves thereof; my construction providing a system of leaf hinging whereby new and novel results in the display or exhibition of photographs, for example, for commercial purposes and in the home, may be attained; my construction providing for simultaneously exposing the photographs mounted on registering pages of a multiplicity of leaves disposed in partially superimposed relation longitudinally of the open book shell.

Another object of my invention is to provide a means of constructing a photograph album, in which a series of leaves are supported from one or both cover sections of the shell and a second series of leaves are hinged in juxtaposition to the shell backbone, each of the latter leaves having other leaves hinged thereto for relative movement, the latter leaves constituting a third series, all of the leaves being adapted for preselected relative disposition when the shell is opened, to simultaneously render viewable objects or photographs mounted on leaves of each of the series.

It is also an object of this invention to provide a book for simultaneously displaying a plurality of related or non-related objects, as color cards, photographs and the like, mounted on a multiple number of leaves in a preselected arrangement, as may be determined by such arrangement, my improved display book construction embodying a plurality of series of leaves hingedly mounted within the shell, certain of the leaves being hinged to leaves connected to the shell structure in the zone of the backbone thereof, for disposition in association with their supporting leaves in superimposed relation thereto, whereby objects mounted on said leaves may be viewed in combination.

My invention further contemplates a book construction, as aforesaid, which may be of a permanent or detachable or loose-leaf type, whereby provision may be made for adding a plurality of leaves to a book conforming to my invention, by the simple expedient of hinging one set of leaves to the shell in the zone of the backbone by rings or similar loose-leaf mountings, thereby materially increasing the range of utility of display books and their period of usefulness, it being obvious that undesired leaves may be removed with the same facility with which a new leaf is entered in the construction.

Other objects and advantages flowing from the practicing of my invention will become manifest as the description proceeds.

In the accompanying drawing, I have shown a preferred form of my construction as it may be employed in the production of a photograph album, in which the prints are adhesively secured to pages of the leaves in three rows of three prints each. However, my invention may take other forms and the arrangement of the objects to be displayed in the manipulation of the leaves may be varied as may be desired in carrying my invention into effect.

In the drawing:

Figure 1 is a plan view of a photograph album produced in accordance with my invention, in open condition.

Figure 2 is a longitudinal sectional view on the line 2—2 of Figure 1.

Figure 3 is an end elevation of the backbone and one of the cover sections of the shell, in open condition, with the leaves of the several sets poised in various positions, from which they are movable as indicated by the arrows and the dot and dash lines.

Referring now to the drawing in detail, in which like characters of reference are employed to designate similar parts in the several views, the book construction includes the usual and preferably stiff cover sections 10 and 11, connected by the flexible backbone 12 for relative arcuate movement on the hinge lines 10*a*, 11*a*, the shell components being faced with a suitable lining 13, as in the conventional book structure.

Three sets of leaves of flexible material, as a heavy paper, preferably of uniform width are hingedly mounted for disposition of the leaves of one set in several associated arrangements with those of the other sets, when the book is in open condition, and in response to the manipulation of leaves of the respective sets as hereinafter described.

The leaves 14 of one set are mounted in the zone of the backbone 12, for hinged movement on the wire rings 15, supported in juxtaposition to the backbone in longitudinally spaced relation, between the laterally spaced edges of the perforate strips 16, 17, the edges of the leaves 14 being reinforced and perforated for the reception of the rings, as in the standard loose-leaf constructions. These leaves 14, since they are hinged in the backbone zone, hereinafter will be referred to as the main leaves. Obviously any desired number of main leaves, within the capacity of the rings 15, may be hingedly associated with the backbone of the shell.

Other leaves 18, three in number in the present showing, are hinged to each of the main leaves, in laterally spaced relation, by the flexible strips 19, each of which is creased intermediate its longitudinal edges to form a hinge line 19*a*, the portions on either side thereof being adhesively secured to the surface of the main leaf 14 and to the edge of a leaf 18, the relative spacing of the leaves 18 on the supporting main leaf 14, providing for the exposure of marginal portions thereof, when the leaves 18 are in superimposed relation to the main leaf to which they are hinged, as will be described, the width of such marginal portions being fixed by the spacing of the hinge mounting of the leaves 18. To differentiate from the main leaves 14 and other leaves 20 hinged to the cover section 10, the leaves 18 will hereinafter be termed wings.

The aforesaid leaves 20 are hingely connected to the cover section 10 in laterally spaced relation by the hinging strips 21 corresponding to the strips 19, for movement on the hinge lines 21*a*, between the outer free edges of the cover section 10*b* and the hinged connection 10*a* thereof, the hinge position of the outermost leaf 20 being spaced inwardly of the free outer edge of the cover section a distance approximately equivalent to the width of said leaf 20, so that when such outermost leaf is superposed in a flat position upon the cover section 10, the free edge 20*a* of such leaf will lie adjacent the outer edge 10*b* of said cover section 10. As shown, there are three leaves 20 hinged to the cover section, the spacing between the hinge strips whereby they are attached thereto, as in the case of the wings 18, providing for the exposure of marginal sections of the first and second leaves and the complete third leaf when the set of cover section hinged leaves are turned to the left, as indicated by the arrows in Figure 3, to a position in superimposed relation on the cover section 10. Marginal sections of the second and third leaves and the entire first leaf are exposed, when the leaves 20 are similarly oppositely disposed to overlie the main leaves and the wings 18, when said wings are compacted upon the main leaves to which they are hinged in superposed relation to the opened shell components.

The innermost of the leaves 20, as will be noted, is hinged to the cover section 10 in spaced relation to the hinge line 19*a*, connecting the cover section to the backbone 12, leaving a blank space 19, between the free edge of said leaf and the inner edge of the cover section when the three leaves 20 are in their latter described position, as shown in Figure 1. The leaves 20, hinged to the cover section 10 for the purposes of this description hereinafter will be termed the cover leaves.

Each leaf of the several series is proportioned to admit of the mounting thereon of a plurality of photographic prints of predetermined dimensions, in a symmetrical arrangement. In the present showing, the prints are arranged in three rows extending from the top to the bottom of a leaf, with three prints to the row, or a total of nine prints to the page, the term page being employed to designate one surface of a leaf. Each of the cover leaves carries eighteen prints, nine on each page thereof, the same being true as to the wings 18, while only nine prints are mounted on the one available page-forming surface of each main leaf 14, the wings being supported from the opposite surface of the main leaf, as described. The several rows of prints will be designated as print positions, the row adjacent the free edge of each leaf being identified as position *a*, while the intermediate row and the last row will be referred to as positions *b* and *c*, respectively.

Now, assuming that the book is opened, as shown in Figure 1, it will be observed that due to the hinge locations of the cover leaves 20, when these leaves are superimposed upon the cover section 10, the print position *a* of the uppermost page of the intermediate leaf will be in juxtaposition to the print position *a* of the outermost cover leaf, all of the print positions *a*, *b*, *c* of the topmost page of the third leaf being exposed, with the print position *a* of the latter leaf in juxtaposition to the corresponding print position of the intermediate leaf 20, as shown at the left hand side of Figure 1. Obviously, the reversal of the positions of these cover-supported leaves 20 in an opposite rotative movement will reverse the relative order of the print positions, with all of the print positions on the uppermost page of the first or outermost cover leaf being exposed to view.

When the leaves 20 are in the position shown in Figure 1, as just described, all of the print positions on the single print bearing page of the first of the main leaves 14 will be exposed, together with all of the print positions on the wing 18 hinged to such main leaf in the outermost position, the wing being disposed as a virtual extension of the main leaf to which it is connected.

Now, when this first main leaf 14 is rotated in the direction of the arrow of Figure 3, from the position just described, to superimpose it upon

the cover section 10, it will overlie and conceal the print positions *b* and *c* of the innermost cover leaf 20. In this position of the main leaf 14, the first of the wings 18 hinged thereto is superposed on said main leaf, with all of its print positions exposed, the respective print positions *a* of the two other wings carried by the rotated main leaf 14 projecting one beyond the other outwardly of the free edge of the first and completely exposed wing page.

The first wing 18 may now be rotated on its hinge line, to the left, to overlie and conceal the print positions of the three cover leaves 20, superimposed upon the cover section 10, to completely expose all of the print positions on the uppermost page of said wing, all of the print positions on the uppermost page of the second wing laterally spaced from the first wing, likewise, being exposed, the second wing concealing all of the print positions on the third wing, except position *a*, which is disposed in juxtaposition to the print position *a* on the second wing, the *a* print position of the third wing being spaced inwardly of and exposing the corresponding print position of the second main leaf 14. Obviously, the several print positions of the first wing of the second main leaf are now visible therebeyond in the manner explained in connection with the description of the disposition of the first main leaf 14.

The rotative movement of the second wing 18 supported by a main leaf 14, locates its print position *a* in juxtaposition to the corresponding print position of the first wing, to completely expose the entire page of the second wing and that of the third, the *a* print position of the third wing remaining in the same relation to the print position *a* of the exposed page of the main leaf 14.

The succeeding movement of the third wing 18 to a position in superimposed relation to its main supporting leaf 14 and the associated wings, exposes the entire uppermost page of such third wing, its print position *a* being in juxtaposition to the print position *a* of the intermediate wing, the print position *a* of the first wing being similarly disposed outwardly of the free edge of said intermediate wing. With the three wings hinged to the first main leaf 14, disposed in superposed relation to the cover section 10, as just explained, the hinged edge of the third of said wings is laterally spaced from the hinge connection of the main leaf 14 to the rings 15. The uppermost page of the second main leaf disposed in flat condition on the opposite side of the hinge line constituted by the rings 15, is now entirely exposed as is the alined page of the first of the wings attached to such second main leaf, so that except for the blank space, corresponding to the previously described space 10 between the rings 15 and the hinge line of the third wing of the set carried by the first main leaf 14, the print positions extend from end to end of the opened book.

Obviously, the opposite individual actuation of the wings will render the reverse pages thereof and the print positions thereon, visible in inverse order, it being apparent that all of the wings of a set may be rotated in one direction or the other, by the movement of the first or third wings of the set, as the case may be; likewise, that all of the wings of a set may move with and in hinged relation to the main leaf 14 to which they are connected, in the disposition of the main leaf to the left or to the right of the hinge line defined by the rings 15.

By utilizing a system of hinged leaves actuatable as described, with provision for nine prints on each page, when the first main leaf 14 is superimposed upon the cover leaves 20, in the manner explained, to completely expose the first wing hinged to such main leaf and the *a* print positions of the intermediate and third leaves, all print positions beyond the free edge of the third wing also being visible, so that a total of thirty-six prints will be spread before the eye of the observer, extending from end to end of the album. In other words, as each main leaf 14 and the wings hinged thereto are rotated to the left on the hinge line defined by the rings 15, as a unit, the aforesaid number of prints are simultaneously presented to view, while in other relative movements of the leaves of the sets, as described, a minimum of thirty-three prints is exposed at all times. When the book is initially opened, as in turning the cover section 10 to the left, as in Figure 2, the print position visible on the three cover leaves, the first main leaf and on the first of the main leaf wings total twenty-seven.

In closing the book, it will be manifest that the cover leaves will automatically progress to a position in superimposed relation to the main leaves and the wings hinged thereto, the free edges of all of the leaves of the three sets being in registration between the closed cover sections, just inwardly of their outer edges 10*b*, so that the external appearance of the closed album corresponds to that of a standard album or book construction.

As will be evident, in lieu of photographs, color cards or other material may be mounted at the various print stations on the respective pages or surfaces of the leaves of the several sets. Also, any preferred or practical arrangement of the print positions dictated by the use to which the construction may be applied, may be followed, in attaining the objectives to which my invention is directed, in the manner hereinbefore pointed out. In lieu of the rings 15, other means for hinging the main leaves in proximity to the backbone 12 may be employed while the cover leaves and the wings may be variously hinged to their respective supporting surfaces, all of these departures from the structure or arrangement shown being within the spirit and scope of my invention.

I claim:

1. A book construction, including a flexible backbone and cover sections hinged thereto for relative movement, a plurality of sets of leaves of uniform width hingedly mounted within said shell, one set of leaves being hinged in the zone of said backbone, a second set of leaves being hinged to one of said cover sections in laterally spaced relation, and a third set of leaves hinged in laterally spaced relation to each of the leaves of said first set hinged in the zone of said backbone, the hinged axis of the leaves of the respective sets being arranged parallel to each other, the leaves of the respective sets of leaves being rotatable relative to their supporting surfaces for disposition in relative positions to expose predetermined portions thereof in proximate association.

2. A book construction, including a flexible backbone and cover sections hinged thereto for relative movement, a plurality of sets of leaves of uniform width hingedly mounted within said

shell, one set of leaves being hinged in the zone of said backbone, a second set of leaves being hinged to one of said cover sections in laterally spaced relation, and a third set of leaves hinged in laterally spaced relation to each of the leaves of said first set hinged in the zone of said backbone, for relative movement, said leaves of said third set being conjointly movable with their supporting leaf, for disposition in relation to leaves of the second set to conceal predetermined portions of the leaves of the second set in proximate association with the leaves of said second set, the hinged axis of the leaves of the respective sets being arranged parallel to each other, whereby the exposed portions of all of the associated leaves will present a virtually continuous exposition of material carried thereby.

3. A book construction, including a flexible backbone and cover sections hinged thereto for relative movement, a plurality of sets of leaves of uniform width hingedly mounted within said shell, one set of leaves being hinged in the zone of said backbone, a second set of leaves being hinged to one of said cover sections in laterally spaced relation, and a third set of leaves hinged in laterally spaced relation to each of the leaves of said first set hinged in the zone of said backbone, for movement relative to said leaf hinged in the zone of the backbone and to each other, the hinged axis of the leaves of the respective sets being arranged parallel to each other, the conjoint movement of said third set of leaves with their supporting leaf, superimposing all of said leaves on said second set of leaves, to expose marginal portions only of the leaves of said second set in juxtaposition, and completely expose one of the leaves of the third set and marginal portions of the other thereof in association with the free edge of the completely exposed leaf.

4. A book construction, including a pair of cover sections and a flexible backbone, said cover sections being connected to said backbone for relative hinged movement, a plurality of main leaves of the same width hinged to the construction adjacent the backbone for movement toward and from the cover sections disposed on either side of the backbone, a series of leaves of the same width hinged to one of the cover sections in laterally spaced relation, the hinge station of the outermost leaf connected to the cover section being spaced inwardly of the free edge of the cover section in an amount equal to the width of such outermost leaf, the spacing between each of the remaining leaves hinged to the cover section being of a width to provide a staggered relationship of the free ends thereof when said leaves are superimposed and a plurality of wings hinged to one surface of each of the leaves connected to the construction in the backbone zone, in laterally spaced relation for movement relative to the wing-supporting leaf and to each other and for movement with said wing-supporting leaf, the spacing between said wings likewise being a staggered relationship of the free ends thereof when said wings are superimposed, the hinged axis of the leaves and wings being arranged parallel to each other, the several leaves of the sets being variously movable to one another for simultaneously exposing to view objects mounted on the complete pages of certain of said leaves and in marginal sections of others thereof, the marginal exposure being determined by the mounting positions of certain of said leaves, as aforesaid.

5. A book construction, including a pair of cover sections and a flexible backbone, said cover sections being connected to said backbone for relative hinged movement, a plurality of leaves of uniform width, certain of said leaves being hinged to the shell in the zone of the backbone thereof, one surface of each of said latter leaves being adapted for mounting photographs or other objects thereon, a series of leaves hingedly connected in laterally spaced relation to the opposite surface of each of said latter leaves and other leaves hinged to one of said cover sections in laterally spaced relation for relative movement, the hinged axis of the leaves being arranged parallel to each other, both surfaces of the respective leaves of the latter series and of the leaves hinged to the cover section being adapted for the reception of photographs or the like arranged in parallel rows thereon extending from top to bottom of the leaf, the lateral spacing of the hinged leaves of the series and of the leaves hinged to the cover corresponding in width to the width of a row of photographs or the like positioned upon a leaf, whereby in the movement of the various leaves from one position to another, various arrangements of the photographs grouped on each page may be simultaneously viewed, with all of the photographs on certain of the pages being visible with juxtaposed photographs in marginal positions on adjacent leaves, the area of marginal exposure of a leaf being fixed by its hinged connection with its supporting surface with relation to the hinge connection of the superimposed leaf.

6. A book construction, including a shell comprising cover sections and a flexible backbone, the cover sections being hinged to the backbone for relative movement, a plurality of leaves of uniform width and a series of hingedly mounted leaves disposed for angular movement about parallel axes within the area of the shell whereby certain of the leaves are hingedly supported from others thereof hinged to the shell in the zone of the backbone, other leaves hinged to a cover section, the hinged axes of all of the leaves being arranged parallel to each other, the leaf-supported leaves and the cover section-supported leaves being hinged in laterally spaced relation to their respective supporting surfaces, the leaves of the structure being individually and conjointly rotatable in various combinations and disposable relative to one another to render complete areas and marginal sections thereof simultaneously viewable in different arrangement, as determined by the relative positions of the free edges of superimposed leaves, the width of the marginal sections exposed being fixed by the hinged spacing of the leaves cooperating in a specific arrangement.

IRVING WEINGER.