Jan. 20, 1970 J. A. PERKINS ET AL 3,490,394

FOLDING TABLE

Filed April 3, 1968 2 Sheets-Sheet 1

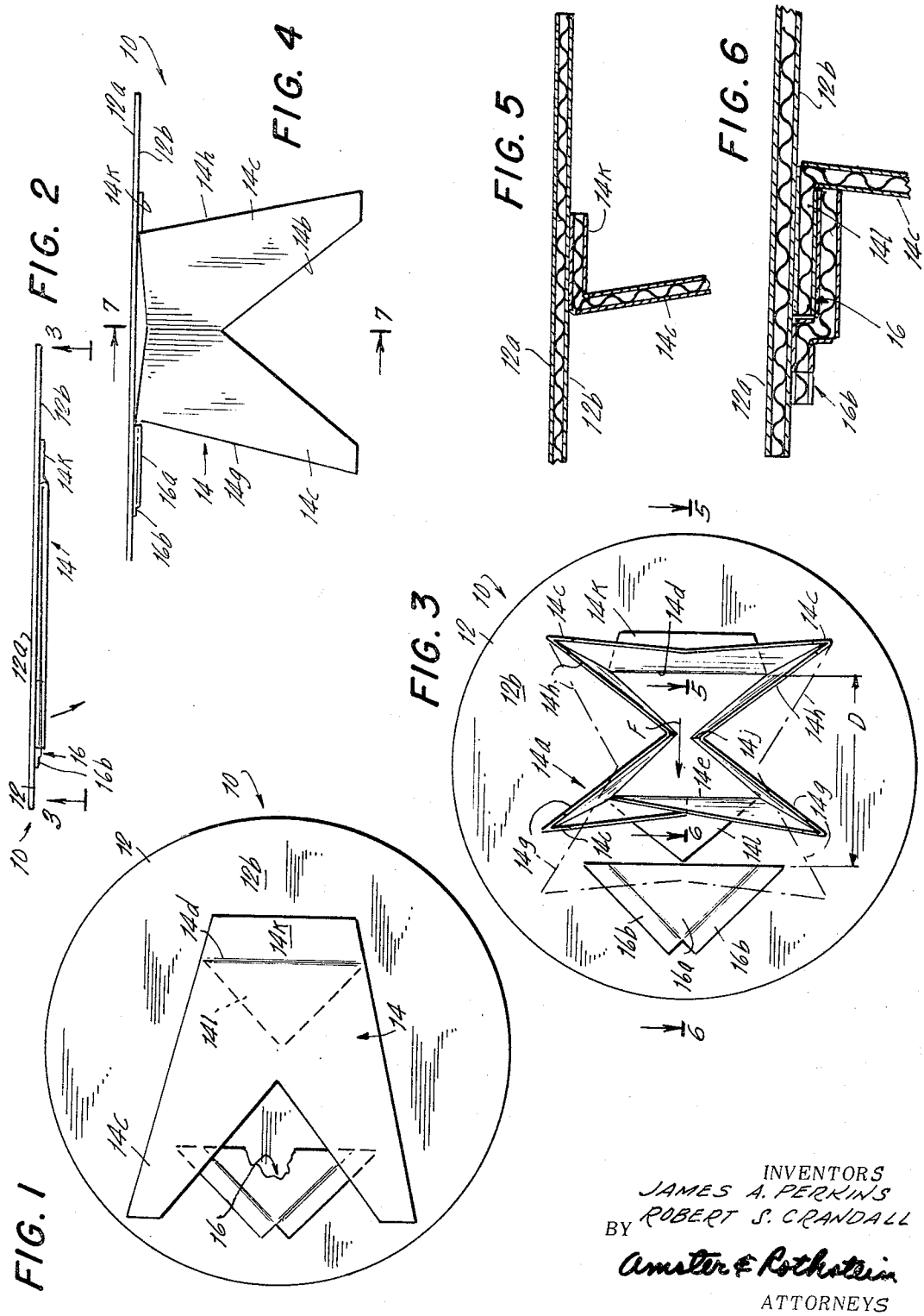


FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6

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Filed April 3, 1968 2 Sheets-Sheet 2

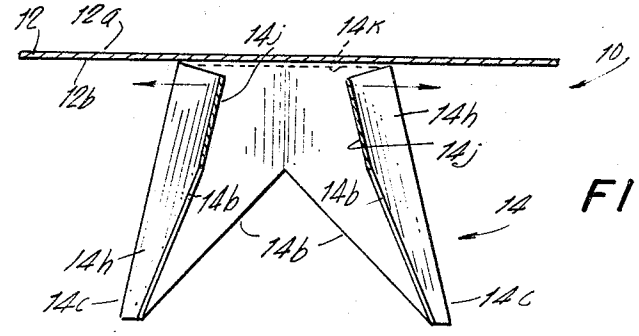


FIG. 7

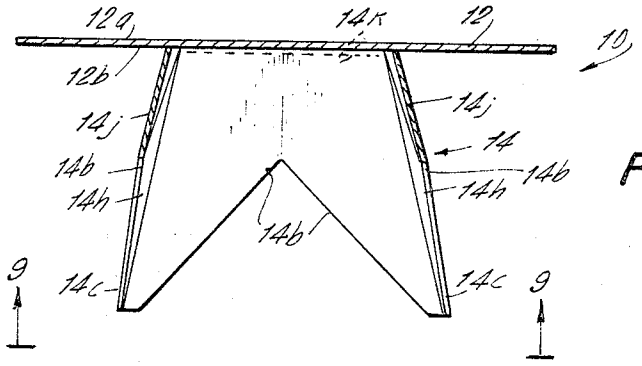


FIG. 8

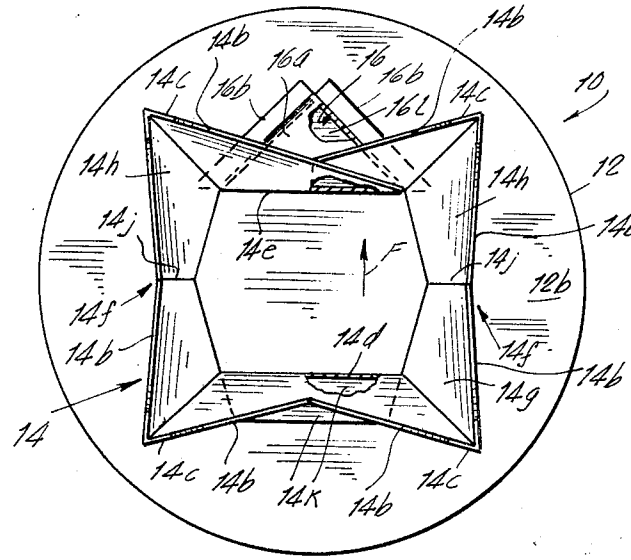


FIG. 9

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FOLDING TABLE

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ABSTRACT OF THE DISCLOSURE

A table having a compact, folded storage condition and an erect, unfolded standing condition comprising a table support member having a top and a bottom surface, and an unfolding standing base including an accordion fold body.

The present invention relates generally to furniture, and more particularly to improvements in folding tables.

There are already numerous well known models of tables which can be folded into a compact condition to facilitate storage and also tables of the folding type which are intended to be fabricated of board, cardboard or similar material to obtain, among other advantages, an economically mass produced product. Exemplary of these prior art tables is the table of U.S. Patent 2,240,024 issued on Apr. 29, 1941. This and other known folding cardboard tables, however, leave much to be desired because of the difficulty of satisfying all objectives, several of which are contradictory or in conflict. As an abvious example, while the use of cardboard as the construction material for the table greatly contributes to its low cost, facilitated manufacture, and other desired ends such as foldability and the like, this material is not as strong as wood, plastic or similar traditional table construction materials, and therefore, the cardboard is either reinforced or otherwise adapted to withstand the forces and stress of normal use of the table. Thus, in the aforementioned patent, the cardboard legs are achieved by a triangular configuration which undoubtedly is effective, but at a sacrifice in the simplicity of construction of the product.

Broadly, it is an object of the present invention to provide an improved folding table overcoming the foregoing and other shortcomings of the prior art. Specifically, it is an object to provide a simply constructed folding table which retains its simplified construction even though fabricated of cardboard or other economical construction material and which therefore constitutes a noteworthy economically mass produced product.

A folding table demonstrating objects and advantages of the present invention includes the usual table support member or table top and an accordion fold standing base having two degrees of unfolding movement. First, it unfolds from a flush condition against the underside of the table into a position extending perpendicularly thereof. Second, it then unfolds or opens about its accordion folds into a stand for the table top, thereby efficiently providing support to the table top even when fabricated of board, cardboard or similar economical construction material.

The above brief description, as well as further objects, features and advantages of the present invention,

will be more fully appreciated by reference to the following detailed description of a presently preferred, but nonetheless illustrative embodiment in accordance with the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a bottom plan view of a folding table according to the present invention in its compact, folded condition;

FIG. 2 is a side elevational view of the table;

FIG. 3 is a bottom plan view, similar to FIG. 1, but illustrating the standing base of the table in its unfolded condition and at a position of movement partway along its direction of unfolding preparatory to functioning as a standing base for the table;

FIG. 4 is a side elevational view illustrating the table in its erect, unfolded condition;

FIG. 5 is a side elevational view on an enlarged scale, taken in section on line 5—5 of FIG. 3, illustrating structural features at the stationary end edge of the standing base;

FIG. 6 is a sectional view similar to FIG. 5, taken on line 6—6 of FIG. 3, but illustrating structural features of the movable end edge of the standing base;

FIG. 7 is an elevational view, in section taken on line 7—7 of FIG. 4, illustrating further structural features of the accordion fold body of the standing base of the table;

FIG. 8 is an elevational view in section, similar to FIG. 7, but illustrating the accordion fold body in its outwardly extended condition; and

FIG. 9 is a bottom plan view, similar to FIG. 3, but illustrating the standing base in its final position of movement along its direction of unfolding.

Reference is now made to the drawings illustrating a folding table, generally designated **10**, which according to the present invention has a compact, folded condition convenient for storing the table, as illustrated in FIGS. 1 and 2, and also an erect, unfolded standing condition, as illustrated in FIG. 4. In addition to having the obvious advantages which result from being convertible between the two conditions depicted in FIGS. 1, 2 and 4, the construction of the table **10**, as will become more apparent from the detailed description which follows, readily lends itself to being fabricated of inexpensive materials of construction, as for example an E-fluted cardboard, so that table **10** is readily economically mass produced. Not only is the use of cardboard or such similar economical and readily available construction material within the contemplation of the present invention, but also the contemplated method of attaching together the various parts of the table **10** as by gluing this construction material also greatly contributes to the production of the table **10** as an economically massed produced item.

The table **10** includes the usual table top or support member **12** having a top surface **12***a* and a bottom surface **12***b* and may be circular in shape, as illustrated, although it will be understood the other shaped support members may be used. The other significant part of the table **10** consists of a standing base, generally designated **14**, having the previously noted folded condition wherein it is flush against the table surface **12***b* as when the table **10** is being stored, and also being readily unfoldable therefrom into an operative standing condition, as depicted in FIG. 4, when it is desired to use the table.

As is perhaps best illustrated by FIGS. 3 and 9 in conjunction with FIG. 4, the standing base **14** includes an

upper accordion fold body **14***a* formed by four sides and each side of which has a V-shaped notch **14***b* removed from its lower portion and thereby providing four legs **14***c*. Specifically, the accordion fold body **14***a* as is best shown in FIG. 9 is bounded at its upper end, when in its unfolded condition, by an opposing pair of operative edges, to wit, a first end edge **14***d* and a second edge **14***c*, and by a pair of facing, identically constructed folding sides **14***f*. Each side **14***f* is formed by adjacent walls **14***g* and **14***h* joined along a fold line **14***j*. Thus, the accordion fold body **14***a*, assuming as will be explained subsequently that the edge **14***d* is held stationary, is unfoldable in a direction of unfolding F for a theoretical distance or extent of unfolding which is equal to the combined sizes of the walls **14***g* and **14***h*. In practice, however, the accordion body **14***a* is confined to a distance of unfolding which is less than this theoretical distance for reasons now to be explained.

First, it will be noted that provided along the edge **14***b* is a tab **14***k* which is appropriately attached, as by gluing, to the table surface **12***b*. Thus, the end edge **14***d* is stationary and, further, as best illustrated in FIG. 1, it occupies an outer position with respect to the table support member **12** when the standing base **14** is in its folded position against the table surface **12***b*. As a consequence, the standing base **14**, when in its folded condition against the table **12**, does not have to project in an unsightly manner beyond the periphery of the table support member **12**. Naturally, the foregoing will depend upon the particular dimensions of the various table parts **12** and **14** but, as illustrated herein, it can be satisfied by a great number of parts which are properly proportioned and scaled to serve as a table. One such exemplary embodiment is a table support member **12** having a twenty-two inch diameter and used with a standing base **14** which measures twelve inches from the fold line **14***d* to the bottom edge of the legs **14***c*, and which standing base, in its folded condition flush against the table surface **12***b*, is contained entirely within the periphery of the twenty-two inch diameter table support member **12**, all as is clearly illustrated in FIG. 1.

To erect the table **10**, the standing base **14** is pivoted or swung about the fold line **14***b* into a position extending substantially perpendicularly of the table bottom surface **12***b*. The accordion fold body **14***a* is then unfolded in the direction of unfolding F as a result of movement of the edge **14***e* away from the stationary edge **14***d*. Formed integrally along the edge **14***e* is a triangular shaped attaching tab **14***l* which, in practice, is inserted within an enclosure **16** formed between a member **16***a* and the table bottom surface **12***b*, the member **16***a* being appropriately adhered only along its marginal edges **16***b* to the table bottom surface **12***b*. As clearly illustrated in FIG. 3, the enclosure **16** is located in the path of the direction of unfolding F and at a predetermined distance D from the stationary portion **14***d*, **14***k* of the accordion fold body **14***a* which distance D will be understood to be slightly less than the previously noted theoretical maximum extent of unfolding that can occur in the accordion fold body **14***a*. As a consequence, and as illustrated in phantom perspective in FIG. 3, after placement of the attaching tab **14***l* within the enclosure **16**, the accordion fold walls **14***g*, **14***h* are in a slightly inwardly folded condition. These walls **14***g*, **14***h* are then snapped into the slightly outwardly folded condition illustrated in FIG. 9 which is effective to prevent inadvertent collapsing of the same while the base **14** is functioning as a stand for the table **10**.

The foregoing movement of the unfolding sides of the accordion fold body **14***a* can perhaps be better understood from a comparison of FIGS. 7 and 8. The plane of the cross section of FIG. 7 is along the fold line **14***j* and illustrates the position of each fold line when each side is in its previously noted slightly inwardly folded condition. FIG. 8, on the other hand, illustrates the position of the fold lines **14***j* after movement outwardly of the same which results from forceably moving or snapping the sides into an outwardly projection position. As a consequence of this positioning of the old lines **14***j* not only are the sides held against inadvertent collapsing but it will also be noted that the upper edges of the walls **14***g*, **14***h* of each of the sides of the accordion fold **14***a* are brought nto supporting contact against the table bottom surface **12***b*. Thus, the standing base **14** provides support for the table member **12** along the four edges **14***d*, **14***e* and also along the opposite edges **14***m*.

The support provided by the stand **14** has been found to be adequate for normal use of the table **10** even when the table parts **12** and **14** are not made of plastic, wood or other such traditional materials of construction, but rather is fabricated even of cardboard which, however, is of a grade or of a fluted construction so as to withstand a certain amount of force and stress. As described herein, the table **10** thus has an advantage of a compact condition convenient for storage, is readily placed into an erect condition in which it efficiently functions as a table, and is adapted, when fabricated of fluted cardboard or the like, to be economically mass-produced.

A latitude of modification, change and substitution is intended in the foregoing disclosure and in some instances some features of the invention will be employed without a corresponding use of other features.

What is claimed is:

1. A table of the type having a compact, folded storage condition and an erect, unfolded standing condition comprising a table support member having a top surface and a bottom surface, an unfolding standing base for said table support member including an accordion fold body having a facing pair of first and second operative end edges and an intermediate facing pair of unfolding sides which are each formed by at least two walls on opposite sides of a fold line and are each adapted to unfold through a direction of unfolding for a theoretical distance of unfolding which is a function of the combined sizes of said two walls, said accordion fold body being attached along said first operative end edge to said bottom surface and having an attaching tab on said opposite second operative end edge, and a tab-receiving enclosure on said bottom surface located along said direction of unfolding and at a distance from said first operative edge which is slightly less than said theoretical distance of unfolding to thereby initially position said facing sides of said accordion fold body in a slightly inwardly folded condition, whereby said facing sides are adapted to be snapped into a slightly outwardly folding condition preparatory to functioning as a standing base for said table support member.

2. A table as defined in claim **1** wherein said standing base, while in said folded condition thereof, is foldable along said attached first operative end edge into a compact storage condition against said bottom surface of said table support member.

3. A table as defined in claim **2** wherein said table support member and said standing base are fabricated of fluted cardboard.

4. A table of the type having a compact, folded storage condition and an erect, unfolded standing condition comprising a table support member having a top surface and a bottom surface, an unfolding standing base for said table support member including an accordion fold body which is unfoldable through a direction of unfolding, said accordion fold body having an outer first operative edge attached to said bottom surface, an inner second operative edge having an attaching tab thereon located adjacent to and free of attachment to said bottom surface such that said attaching tab is operatively movable through said direction of unfolding along said bottom surface, and an intermediate facing pair of unfolding sides which are each formed by at least two walls on opposite sides of a fold line and are each adapted to unfold through said direction of unfolding or a theoretical distance of unfolding which is a function of the combined sizes of said two walls, and a

tab-receiving enclosure on said bottom surface located along said direction of unfolding and at a distance from said first operative edge which is slightly less than said theoretical distance of unfolding to thereby initially position said facing sides of said accordion fold body in a slightly inwardly folded condition, whereby said facing sides are adapted to be snapped into a slightly outwardly folded condition preparatory to functioning as a standing base for said table support member.

5. A table as defined in claim 4 wherein said table support member and said standing base are fabricated of fluted cardboard.

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