Sept. 2, 1969 B. B. NEVAI 3,464,565

SUPPORT STRUCTURE

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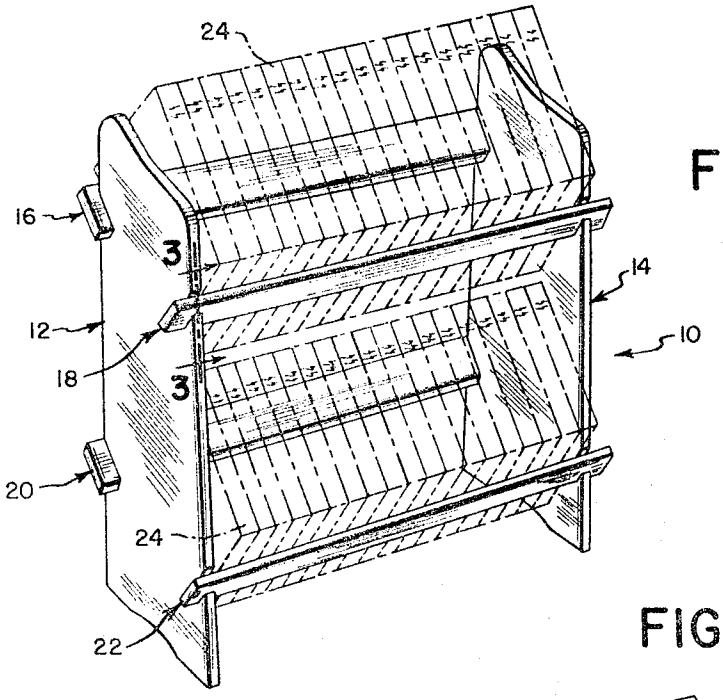


FIG. 1

FIG. 2

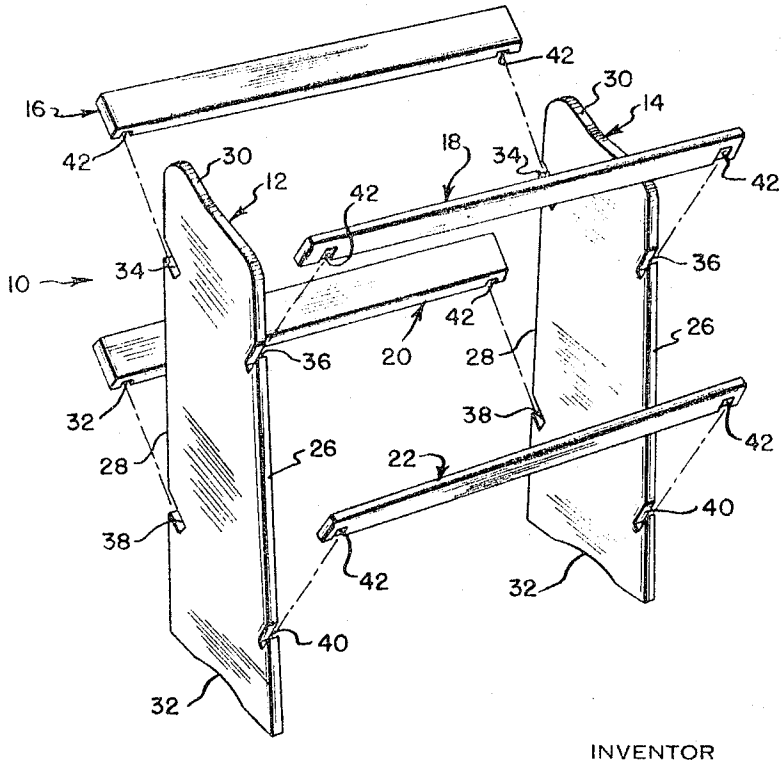
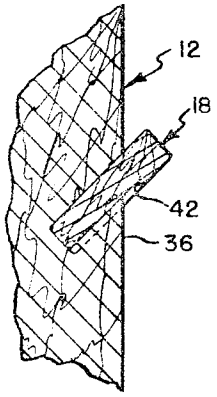


FIG. 3



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SUPPORT STRUCTURE

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U.S. Cl. 211—42 10 Claims

ABSTRACT OF THE DISCLOSURE

Support structure for one or more tiers of books which comprises a plurality of wooden members which may be readily and easily interengaged, without the use of tools or fasteners to provide a rigid, self-supporting structure.

This invention relates generally to support structures and more particularly to support structures adapted to support books. or the like constructed and arranged for easy assembly to define a completely rigid and self-supporting unit without requiring the use of tools and/or fasteners.

It is a primary object of the present invention to provide support structures for books, or the like, while permitting simple and easy removal and replacement of such books.

Another primary object of the present invention, in addition to the foregoing object, is to provide such support structures adapted to be utilized either on top of a table, desk, or the like, or to be disposed on a floor, or the like.

A further primary object of the present invention, in addition to the foregoing objects, is to provide such support structures adapted to display the bindings of such books in an orientation which enables ready reference thereto.

Still another primary object of the present invention, in addition to each of the foregoing objects, is to provide such support structures having a minimum number of component parts adapted to be readily assembled or disassembled without the necessity of glue, fasteners, tools, or the like.

It is also a primary object of the present invention, in addition to each of the foregoing objects, to provide such support structures which are economical to manufacture while yet being sturdy and durable in use.

The invention resides in the combination, construction, arrangement and disposition of the various component parts and elements incorporated in improved support structures constructed in accordance with the principles of this invention. The present invention will be better understood and objects and important features other than those specifically enumerated above will become apparent when consideration is given to the following details and description, which when taken in conjunction with the annexed drawing, describes, discloses, illustrates and shows a preferred embodiment or modification of the present invention and what is presently considered and believed to be the best mode of practicing the principles thereof. Other embodiments or modifications may be suggested to those having the benefit of the teachings herein, and such other embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claims.

In the drawing:

FIG. 1 is a pictorial illustration of a support structure constructed in accordance with the principles of the present invention and;

FIG. 2 is an exploded pictorial illustration of the support structure of the preceding figure showing details of construction thereof and the manner in which the structure is assembled.

FIG. 3 is an enlarged partial elevational cross-sectional view taken along line 3—3 of FIG. 1.

With reference to the drawing, there is shown and illustrated a support structure constructed in accordance with the principles of the present invention, and designated generally by the reference character **10**.

The support structure **10** comprises a plurality of vertically extending members **12** and **14** disposed in generally parallel relationship and a plurality of generally horizontally extending members **16, 18, 20** and **22** interconnecting the generally vertically extending members **12** and **14**. The horizontally extending members **16, 18, 20** and **22** provide generally vertical support to books, or the like, indicated generally by the reference character **24** and shown in phantom in FIG. 1. The generally vertically extending members **12** and **14** provide generally vertical support to the generally horizontally extending members **16, 18, 20** and **22** and provide lateral support for the books, or the like, **24** to retain the books, or the like, **24** disposed in supportive relationship upon the generally horizontally extending members **16, 18, 20** and **22**.

With continued reference now to FIG. 1, the generally horizontally extending members **16, 18, 20** and **22** support the books, or the like, **24** in a generally angular disposition, as shown. This angular disposition of the books, or the like, **24** provides ready reference to the printed material normally appearing on the bindings thereof, and especially on the backbone, and exposes the books, or the like, **24** in such a manner as to enable simple removal or replacement of an individual book, or the like, relative to the support structure **10**.

The generally vertically extending members **12** and **14** are of substantially identical configuration comprising a front edge portion **26**, a rear edge portion **28**, a top edge portion **30**, and a bottom edge portion **32**. While support structures may be constructed in accordance with the principles of the present invention having any desired number of tiers for receiving books, or the like, **24**, it is preferable that two tiers be provided, as shown, to enable the overall height of the support structure **10** to be such as to be suitable for either use upon the floor, or upon a desk, table, or the like. Accordingly, the generally horizontally extending members **16** and **18** define an upper tier and the generally horizontally extending members **20** and **22** define the lower tier.

The generally horizontally extending members **16, 18, 20** and **22** are positioned and supported relative to the generally vertically extending members **12** and **14** in generally inwardly and downwardly extending slots **34, 36, 38** and **40**, respectively, extending inwardly of the front and rear edge portions **26** and **28** of the generally vertically extending members **12** and **14**, as shown. The slots **34** and **38** are disposed generally vertically upwardly of the slots **36** and **40** and extend at generally right angle directions relative to one another. Accordingly, when the generally horizontally extending members **16, 18, 20** and **22** are associated therewith, the weight of the books, or the like, **24** will tend to retain the generally horizontally extending members **16, 18, 20** and **22** within the slots **34, 36, 38** and **40**.

Each generally horizontally extending member **16, 18, 20** and **22** is provided with a kerf or groove **42** adjacent each end portion thereof. Upon assembly of the generally horizontally extending members **16, 18, 20** and **22** with the generally vertically extending members **12** and **14**, the slots **34, 36, 38** and **40** will engage the kerfs or grooves **42** to preclude lateral movement between the generally horizontally extending members **16, 18, 20** and **22** and the generally vertically extending members **12** and **14**. The members **12** and **14**, as well as the members **16, 18, 20** and **22** may be fabricated of any conventional material, such as wood, plastic, metal, etc. but it has been found that

wood is a preferable material, being inexpensive, durable, and aesthetically appealing. Moreover, the frictional interaction of the members **12** and **14** with the members **16**, **18**, **20** and **22** results in a very rigid structure.

Furthermore, by appropriate selection of the width of the slots **34**, **36**, **38** and **40** and the depth of the kerfs or grooves **42**, so that the slots will be completely filled upon assembly, a substantially rigid structure will be provided without requiring the use of glue, cement, nails, screws, any other type of fasteners, or requiring the use of any tools either for the assembly or for the disassembly.

Furthermore, while the support structure **10** shown comprises only two generally vertically extending members, three or more such members may be utilized to provide a structure **10** of any desired length.

It is to be understood that terminology such as "upper," "lower," "front," "rear," "inwardly," "downwardly," as used in the preceding description and in the subjoined claims, along with other similar directional terminology, is to be construed and interpreted in its normal and accepted sense. However, such terminology is not to be construed or interpreted in a limiting sense either in the preceding description or the subjoined claims, since the same is used merely to facilitate an understanding of, and to clearly set forth and particularly define the present invention.

While the invention has been shown, illustrated, described and disclosed in terms of an embodiment or modification which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiment or modification herein shown, illustrated, described or disclosed.

What is claimed is:

1. Support structure for supporting books, or the like comprising, in combination, a plurality of generally vertically extending members and a plurality of generally horizontally extending members, said generally vertically extending members each being provided with a plurality of slots extending generally downwardly and inwardly from the front and rear edge portions thereof, said generally horizontally extending members each being provided with a plurality of spaced apart kerfs having a width substantially equal to the thickness of said vertical members and a depth sufficient that the thickness remaining is substantially equal to the width of said slots, said kerfs being engaged with said slots to securely and rigidly position said generally horizontally extending members between said generally vertically extending members in generally perpendicular relationship thereto only by interengagement and in the absence of any supplemental fastening therebetween to define tiers for supporting books, or the like, and wherein the weight forces developed due to the book loading tends to move the members towards tighter interengagement of said slots and kerfs.

2. Support structure defined in claim **1** wherein said rear slots are disposed generally vertically upwardly of said front slots.

3. Support structure defined in claim **1** wherein said front and rear slots are disposed generally perpendicular one another.

4. Support structure defined in claim **1** wherein there are provided two generally vertically extending members and four generally horizontally extending members defining two book-supporting tiers in generally vertically disposed relationship.

5. Support structure defined in claim **1** wherein each of said kerfs is disposed adjacent an end portion of the generally horizontally extending members.

6. Support structure defined in claim **1** wherein said members are fabricated of a material having the characteristics of wood.

7. Support structure defined in claim **1** wherein said slots extend generally inwardly of the vertically extending members a distance less than the width of the horizontal members.

8. Support structure defined in claim **1** wherein said kerfs extend only partially across said horizontally extending members.

9. Support structure defined in claim **8** wherein said kerfs are disposed extending inwardly of the lower surface of the horizontally extending members.

10. Support structure defined in claim **9** wherein said front and rear slots extend inwardly of said vertically extending members a distance substantially equal to the length of said kerfs, at generally right angles relative to one another and wherein said rear slots are disposed generally vertically upwardly of said front slots.

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