March 4, 1958 M. B. RUBENSTEIN 2,825,101

JOINT CONSTRUCTION

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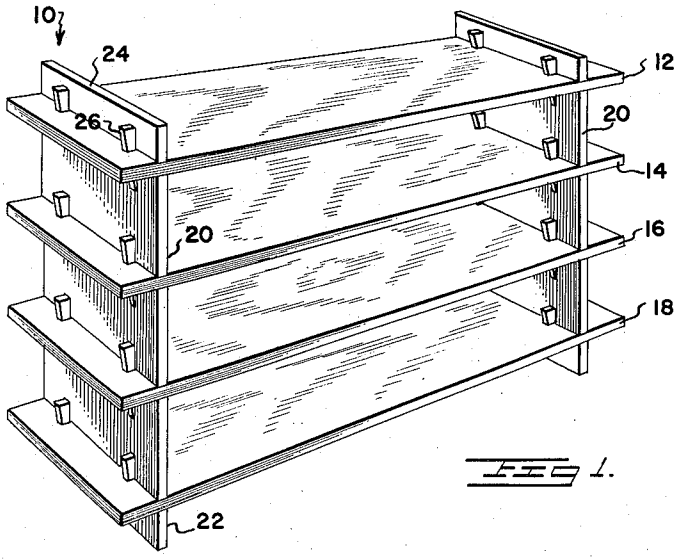


Fig 1.

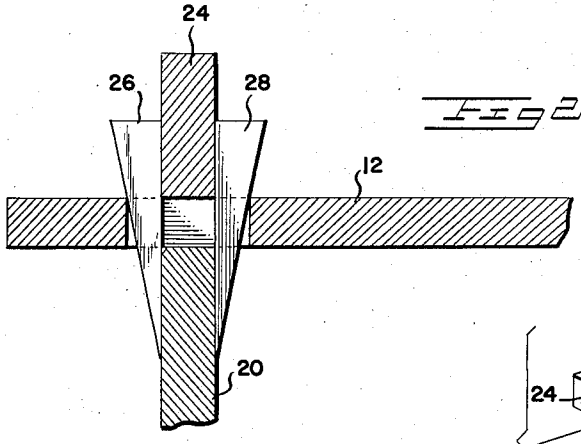


Fig 2.

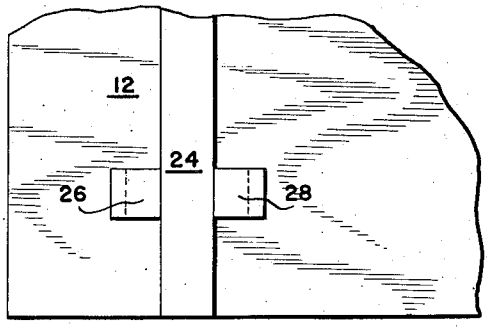


Fig 3.

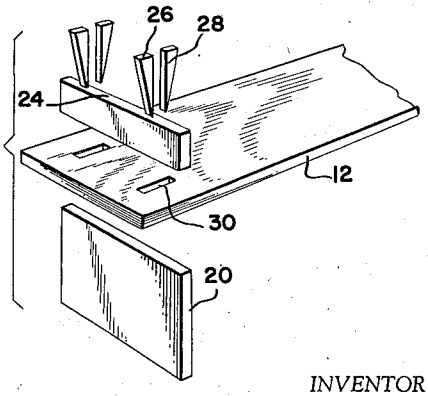


Fig 4.

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JOINT CONSTRUCTION

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8 Claims. (Cl. 20—92)

This invention relates to joint constructions and more particularly to an easily assembled and disassembled friction joint which does not require the use of fastening means such as nails, screws, glue, pegs or dowels, or the use of special tools.

The joint construction of the invention is particularly adapted for use in making knock-down furniture and will be described as embodied in furniture construction, but may also be used in other types of construction or articles in which it is advantageous to have members connected in easily assembled and disassembled relation.

The use of the joint construction of the invention permits economical manufacture of attractive and high-quality furniture of modern style. A further advantage of the joint construction is that it permits the construction of furniture which may be easily stored and shipped in knocked-down condition and which may be quickly and easily assembled when received into sturdy and attractive articles of furniture. Furniture which can be readily assembled and disassembled in the manner possible using the joint construction of this invention is of great utility, particularly for people who frequently move from place to place, such as Armed Service personnel, and also for people who live in mobile homes and other places where space is at a premium.

Accordingly, it is an object of this invention to provide a joint construction particularly useful in furniture and the like which permits the construction of jointed articles without the use of fastening means such as nails, screws, glue, pegs, or dowels and without special tools.

It is a further object of this invention to provide a joint construction particularly useful for constructing furniture and the like which permits the construction and assembly of articles of the knock-down type which may be easily assembled and disassembled.

Further objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawing in which:

Fig. 1 is a perspective view of an article of furniture constructed in accordance with the invention;

Fig. 2 is a view in vertical section illustrating details of the joint construction of the invention;

Fig. 3 is a fragmentary top plan view of the device of Fig. 1; and

Fig. 4 is an exploded view illustrating the relation of the elements forming the joint construction.

Referring now to the drawing, there is shown a shelf structure generally indicated at **10** including a plurality of horizontal shelf members **12**, **14**, **16** and **18**. Each pair of adjacent shelf members are spaced apart by vertically extending wall members **20**, a pair of vertical members **20** being positioned adjacent opposite ends of each pair of spaced shelves. A pair of oppositely disposed vertical members **22** of shorter height than the vertical members **20** are positioned beneath the undersurface of the bottom shelf **18** and serve to support the shelf structure on the floor. A pair of oppositely disposed short

vertical members **24** also extend upwardly from the top surface of the uppermost shelf **12**.

In accordance with the invention, all of the elements of shelf structure **10** are held in assembled relation by the use of wedges such as those indicated at **26** and **28** in Fig. 2. The joint construction of the invention will be described as embodied in the joint between horizontal shelf **12** and aligned vertical members **24** and **20**. Members **20** and **24** are symmetrical about a common vertical axis lying in a plane perpendicular to the plane of shelf **12**, and the corresponding side surfaces of members **20** and **24** also lie in common planes perpendicular to and intersecting the plane of shelf **12**. Only one joint will be described, it being understood that similar joints are used throughout the shelf structure. Thus, in the illustrated embodiment, two joints are used at each end of each shelf, adjacent the forward and rear edges, respectively, of the shelf.

In order to permit the wedged connection of the members **12**, **20** and **24** at the joint, shelf member **12** is provided with a longitudinally extending slot **30** extending transversely of the plane in which members **20** and **24** lie when the joint is completed. The slot is made of sufficient length to extend on either side of the opposite surfaces of the respective members **24** and **20**.

Members **12**, **24** and **20** are joined together in the assembled relationship shown in the drawing by positioning members **20** and **24** in perpendicular contact with the upper and lower surfaces, respectively, of the member **12** intermediate the length of slot **30**. Wedges **26** and **28** are then driven into position through slot **30** adjacent the opposite surfaces of the respective members **20** and **24**. The wedges finally assume the position shown in Figs. 1, 2 and 3 of the drawing, in which each of the respective wedge members tightly engages the opposite surfaces of both members **20** and **24** and also the surface of shelf member **12** to securely hold members **20** and **24** in assembled relation with respect to each other and with respect to member **12**. Thus, the use of wedges **26** and **28** passing through slot **30** permits the connection of members **20** and **24** on opposite sides of an intermediate member **12** in rigidly assembled relation with respect to each other and also with respect to the intermediate member. Each of the members **20** and **24** is positioned entirely on one side of member **12** and is held in frictional engagement with member **12** due solely to the wedging engagement of wedges **26** and **28**.

If desired, one of the elements **26** or **28** need not be a wedge, but instead may be a stop member disposed in the same position as the wedge member which it replaces and engaging the surfaces of members **12**, **20** and **24**. However, at least one of the elements **26** or **28** must be a wedge. Furthermore, one of the elements **20** or **24** may be merely a stop member, serving only to maintain the wedged joint tightly engaged, without serving a structural function in the jointed article. In such event, the stop member substituted for either member **20** or **24** is disposed between wedges **26** and **28** in engagement therewith, and also preferably in engaged relation with member **12**.

It can be seen from the foregoing that the joint construction hereinbefore described has great practical utility in the construction of many types of articles, and particularly furniture and the like, in which it is desirable that the article be capable of easy assembly and disassembly. Furniture using the joint construction of the invention can be shipped and stored in knock-down condition and quickly and easily assembled when required.

While there has been shown and described a particular embodiment of the invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the

invention and, therefore, it is aimed to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as my invention is:

1. A joint construction comprising separable first, second and third joined members each having opposed planar surfaces, said second and third members being aligned with each other along an axis substantially perpendicular to said first member, said second and third members respectively engaging opposite surfaces of said first member, said first member having a slot therein extending transversely of said axis and projecting beyond the opposite surfaces of the respective second and third members on either side of said axis, and separate wedge means extending through said slot on opposite sides of said axis and frictionally engaging said first, second and third members to hold said members in assembled relation.

2. A joint construction comprising separable first, second and third joined members each having planar surfaces, said second and third members being aligned in a common plane perpendicular to the plane of said first member and respectively engaging opposite surfaces of said first member, said first member having a slot therein extending transversely of said common plane and projecting beyond the opposite surfaces of the respective second and third members bounding said common plane, and separate wedge means extending through said slot on opposite sides of said common plane and frictionally engaging said first, second and third members to hold said members in assembled relation.

3. A joint construction comprising separable first, second and third joined members, each having planar surfaces, said second and third members being aligned in a common plane intersecting the plane of said first member and respectively engaging opposite surfaces of said first member, said first member having a slot therein extending transversely of said common plane and projecting beyond said second and third members on opposite sides of said common plane, a first wedge member extending through said slot on one side of said common plane and frictionally engaging said first, second and third members on said one side of said common plane, and a second wedge member extending through said slot on an opposite side of said common plane and frictionally engaging said first, second and third members on said opposite side of said common plane.

4. A joint construction for furniture and the like comprising a panel-like first member, and second and third members having opposed planar surfaces and respectively engaging opposite surfaces of said first member, said second and third members being aligned with each other along an axis substantially perpendicular to said first member, said first member having a slot therein extending transversely of said axis and projecting beyond the opposite surfaces of the respective second and third members on either side of said axis, and separate wedge means extending through said slot on opposite sides of said axis and frictionally engaging said first, second and third members to hold said members in assembled relation.

5. A joint construction for furniture and the like comprising a panel-like first member lying in a horizontal plane, and second and third members having opposed planar surfaces and respectively engaging opposite surfaces of said first member, said second and third members being aligned with each other along a vertical axis substantially perpendicular to said first member, said first

member having a slot therein extending transversely of said axis and projecting beyond the opposite surfaces of the respective second and third members on either side of said axis, and separate wedge means extending through said slot on opposite sides of said axis and frictionally engaging said first, second and third members to hold said members in assembled relation.

6. A joint construction comprising separable first, second and third joined members each having planar surfaces, said second and third members being aligned in a common plane intersecting the plane of said first member and respectively engaging opposite surfaces of said first member, said first member having a slot therein extending transversely of said common plane and projecting beyond opposite bounding surfaces of said common plane, stop means engaging said first member and extending through said slot in engagement with corresponding surfaces of said second and third members on one side of said common plane, and wedge means engaging said first member and extending through said slot in engagement with corresponding surfaces of said second and third members on an opposite side of said common plane, said stop means and said wedge means cooperating to hold said first, second and third members in assembled relation.

7. A joint construction comprising separable first and second joined members, each having opposed parallel planar surfaces, said first and second members lying in mutually perpendicular planes, an edge of said second member engaging a surface of said first member intermediate the length of said surface, said first member having a slot therein extending transversely of the plane of said second member and projecting beyond the opposite surfaces of said second member bounding said plane, a separate wedge member engaging said first member and extending through said slot on each side of the plane of said second member, each wedge member respectively engaging an opposite surface of said second member, and a stop means lying in a common plane with said second member and interposed between the wedge members adjacent an opposite surface of said first member than that engaged by said second member.

8. A joint construction comprising separable first, second and third joined members each having opposed planar surfaces, said second and third members being aligned in a common plane intersecting the plane of said first member and respectively engaging opposite surfaces of said first member, said first member having a slot therein extending transversely of said common plane and projecting beyond opposite surfaces of said second and third members bounding said common plane, and separate friction members extending through said slot on opposite sides of said common plane and frictionally engaging said first, second and third joined members to hold said members in assembled relation, at least one of said friction members being a wedge.

References Cited in the file of this patent

UNITED STATES PATENTS

417,055	Logan	Dec. 10, 1889
2,366,676	Rosenthal	Jan. 2, 1945

OTHER REFERENCES

"Complete Home Workshop Cyclopedia," p. 166, July 15, 1948.