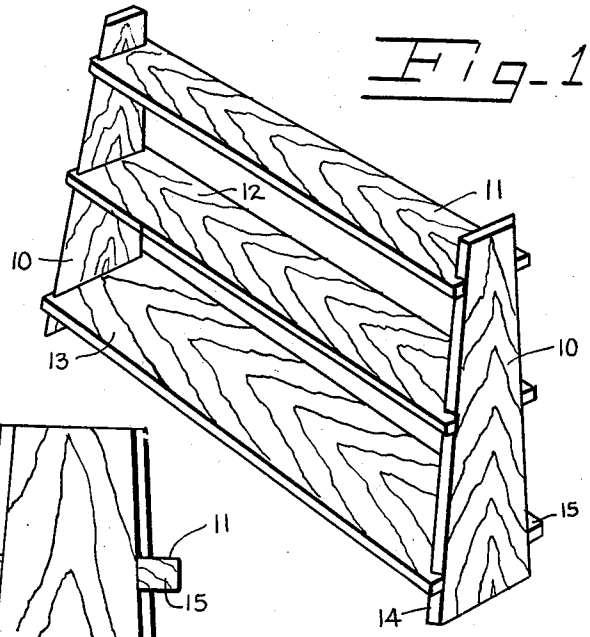
March 15, 1960 R. B. HYDE 2,928,554

KNOCKDOWN SHELF STRUCTURE

Filed July 26, 1957

2 Sheets-Sheet 1

Fig-1



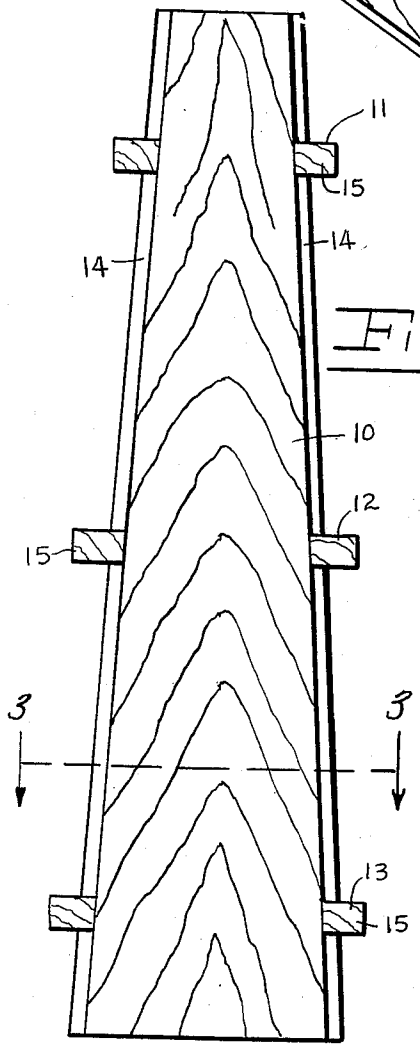


Fig-2

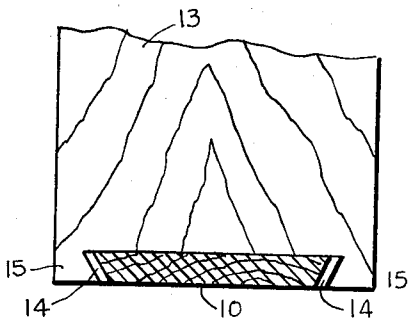


Fig-3

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KNOCKDOWN SHELF STRUCTURE

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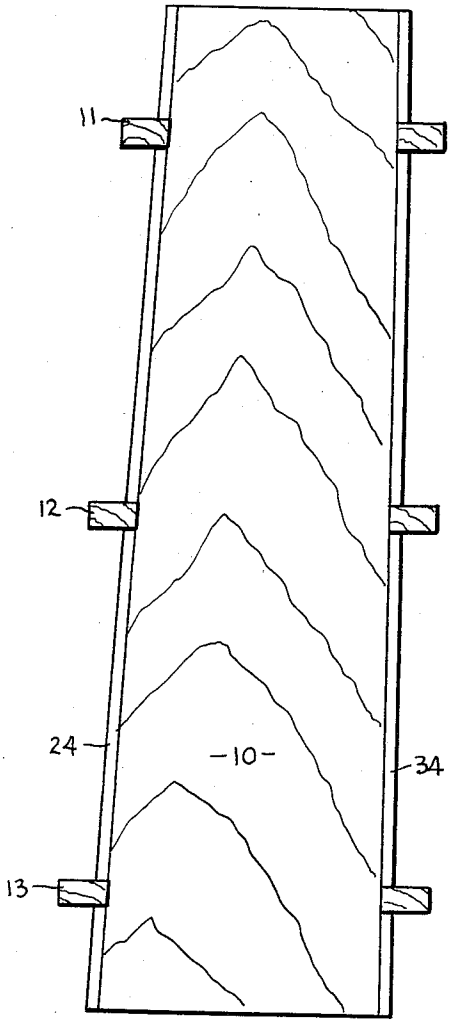


Fig-5

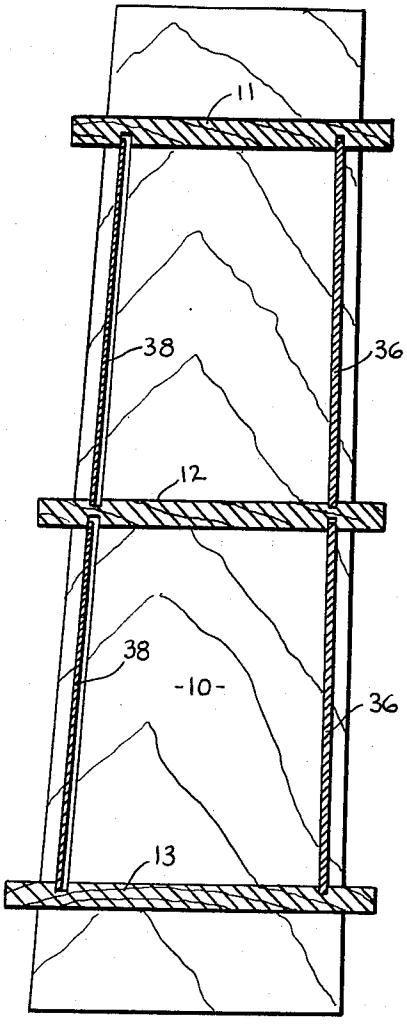


Fig-6

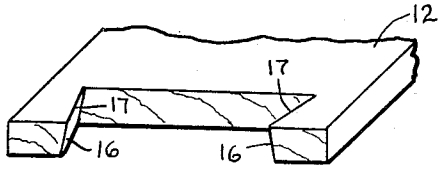


Fig-4

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KNOCKDOWN SHELF STRUCTURE

Robert B. Hyde, Syracuse, N.Y.

Application July 26, 1957, Serial No. 674,367
3 Claims. (Cl. 211—148)

This invention relates to construction of articles of furniture and the like.

The invention has as an object an article of furniture, the component parts of which are formed in a most economical manner and embody a construction by which the parts are quickly assembled without the use of any tools, or fastening means, to provide a rigid article which, in like manner, can also be quickly disassembled without the use of tools.

The invention is particularly adapted for the economical construction of knock-down articles of furniture, such as bookcases, cabinets, table top supporting pedestals, display stands, etc. The component parts of the article are individually formed from separate straight pieces of material, such as boards, or turned members, which can be compactly packaged for transportation and subsequently assembled by any customer without the exercise of any skill or effort. The abutting or joining component parts of the article are connected together wedge fashion into a rigid assembly. Because of the joining together of the parts by the wedging construction, no fastening means, such as nails, screws, glue, etc., are employed, all whereby the parts may be readily disassembled and compactly repackaged for the convenient moving or transporting of the article.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings:

Figure 1 is a perspective view of the invention in the embodiment of a bookcase.

Figure 2 is an enlarged end view of the structure shown in Figure 1.

Figure 3 is a view, taken on line 3—3, illustrating one end member in cross section and the contiguous portion of a cross member or shelf.

Figure 4 is a perspective view of the end portion of one of the shelf members.

Figure 5 is an end elevational view of a form of the construction in which one side edge of the end member extends perpendicular to the shelf members.

Figure 6 is a vertical sectional view of the arrangement shown in Figure 5 wherein front and back closure members are employed to form a cabinet construction.

In Figures 1 to 4, the construction is shown in the form of a bookcase, the components of which are formed from flat pieces of material and consist of a pair of vertically disposed end members **10**. These end members are of tapered formation—that is, these end members are of greater width at the bottom than at the top, whereby the side edges **14** converge upwardly. In Figures 1 and 2, both side edges of the end members extend at an angle to the floor, or supporting surface on which the article is positioned. However, the tapered formation may be provided by forming only one side edge to extend on an angle of less than 90° to the vertical, and having

the other side edge of the end member extending vertically, as is shown in Figures 5 and 6.

The construction further includes a series of cross members, illustrated in the drawings as shelves **11**, **12** and **13**, disposed horizontally between the end members **10**, the shelves being supported at their ends by the supporting end members. The side edges **14** of the end members are also beveled so that they converge outwardly from the shelves **11–13**.

The end portion of each of the shelves is provided with spaced apart projections **15**, preferably formed integral with the shelves to provide a notch formation, and the confronting surfaces or side edges of these projections are formed on compound angles **16**, **17**, complemental to the tapered and beveled formations respectively of the side edges **14** of the end members **10**. Preferably, the end members **10** are of complemental formation dimension-wise, and in such case, the spacing between the projections **15**, at one end of a shelf, is the same as the spacing between the projections **15** at the opposite end of that shelf.

The parts are assembled by positioning the end members **10** between the projections **15** on the shelves, and then moving the shelves in a lengthwise direction downwardly relative to the end pieces **10**. The spacing between the projections **15** on the ends of the shelves determines the point, or position, at which the projections wedge onto the tapered side edges **14** of the end members and therefore, the vertical spacing between the shelves.

Due to the fact that the confronting surfaces of the projections **15** are angled, as at **17**, complemental to the bevel of the edges **14**, the end members **10** become rigidly affixed to the ends of the shelves and are restrained from moving outwardly therefrom. It will be apparent that any downward pressure on the shelves effects a tighter wedging engagement between the shelves and the end members **10**, this being brought about by the tapered formation of the end members and the bevel on the edges thereof, in combination with the compound angle on which the confronting surfaces of the projections are formed, whereby no additional fastening means are needed to effect the rigid joinder of the component parts of the article. On the other hand, upward pressure on the shelves will dislodge them from the wedging engagement with the end members, whereby the parts can be readily disassembled and without any damage or marring of the parts. It is apparent the component parts of the construction may be formed of various materials, such for example as sheet metal. Such materials could be advantageously used in articles as stands for the display of merchandise in stores.

The confronting surfaces of the shelves **11**, **12**, **13**, may be formed with grooves, or the equivalent, for the reception of the panel members and/or sliding doors for the construction of a cabinet or, as will be apparent, the construction can take the form of a pedestal for supporting desk and table tops. For example, in the arrangement shown in Figures 5 and 6, the edge **24** of the end members **10** is inclined to converge upwardly toward the side edge **34** which extends vertically. This provides the tapered form so that the shelves detachably interlock wedge-fashion, as in the arrangement shown in Figures 1 and 2. Also, in this arrangement, the confronting surfaces of the shelf members are formed with grooves in which back members **36**, formed of sheet material, may be positioned. Sliding door members **38** may also be used in like manner to form a cabinet or the like.

It will be apparent, the invention may be used with obvious modifications. For example, the projections **15** may be of greater length than the thickness of the end member so the projections **15** extend outwardly beyond the end members. Also, the tapered side edges **14**, **24**, **34**,

need not be continuous from one end of the end members to the other end. It is only necessary the tapered arrangement exists at the locations wherein the shelves are to be positioned. The intervening areas of the side edges may involve some desired shape to effect a certain design for the article.

It will also be apparent, the end member may be in the form of tapered legs or posts, in which event the end portions of the cross members, or shelves, are formed with apertures tapered complemental to the posts to receive the same, the parts being assembled in the same wedge fashion without the use of tools, or fastening means.

Inasmuch as the construction consists of component parts formed from separate straight pieces of material, it will be obvious that these parts may be compactly packaged for handling in shipment and, if it is desired to move an assembled article, it may be quickly disassembled and repackaged compactly for convenient transportation.

What I claim is:

1. A knockdown article of furniture comprising a pair of vertically disposed end members and a series of horizontally disposed cross members, detachably interlocked at their ends, wedge fashion, to said end members, said end members having their side edges converging upwardly, said side edges being also beveled to converge in a direction outwardly from said cross members, said cross members being formed at each end with projections spaced apart transversely of the cross member to provide a notch formation for receiving an end member, the side edges of said notch formation converging in a direction outwardly from the cross members on an angle complemental to the bevel of the edges of said

end members, the spacing between said side surfaces of said notch formations being such as to engage the beveled side edge surfaces of said end members.

2. A knockdown article of furniture comprising a pair of vertically disposed end members and a series of horizontally disposed cross members detachably interlocked, wedge fashion, at their ends to said end members, said end members being of tapered formation with their side edges converging upwardly, said side edges being also beveled to converge in a direction outwardly from said cross members, said cross members being formed at each end with a notch, the side edges of said notches converging in a direction outwardly from the cross members on an angle complemental to the beveled edges of said end members and said side edges of said notches also converging in a direction upwardly complemental to the tapered formation of said end members, the spacing between said side edges of said notches being such as to engage the beveled side edge surfaces of said end members.

3. An article of furniture as defined in claim 1 wherein the spacing between the side edges of the notches of each cross member vary from the spacing between said side edges on the other cross members, whereby said cross members are supported by said end members in vertically spaced-apart relation.

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