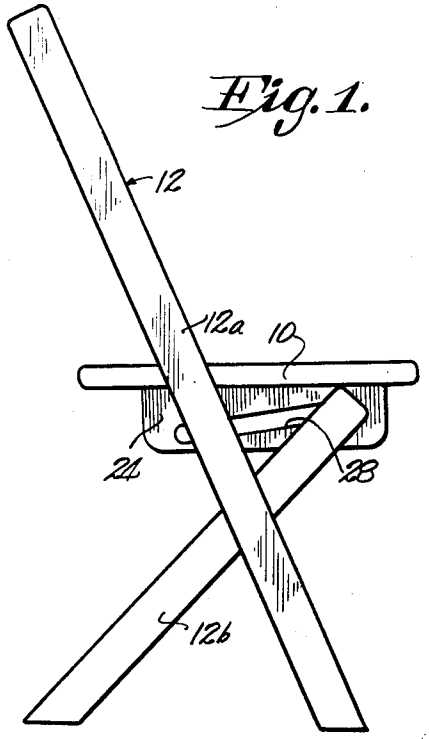
Aug. 18, 1953 O. B. MARSHALL ET AL 2,649,141

COLLAPSIBLE FURNITURE

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Fig. 1.



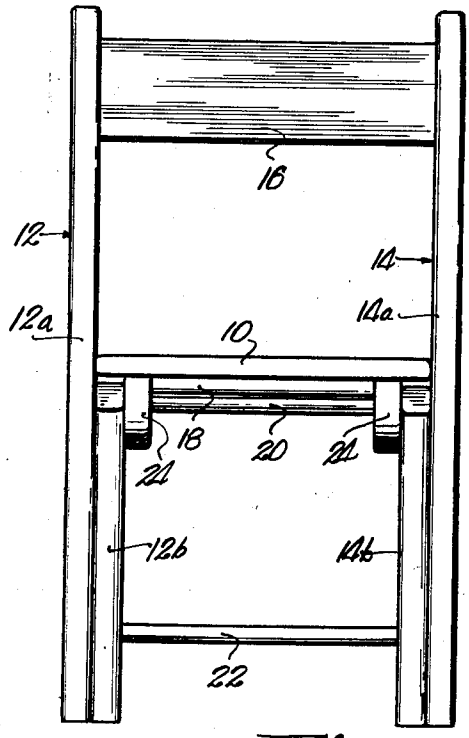


Fig. 2.

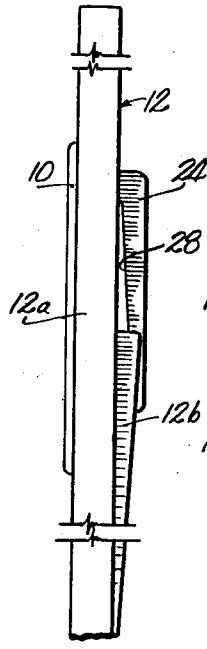


Fig. 3.

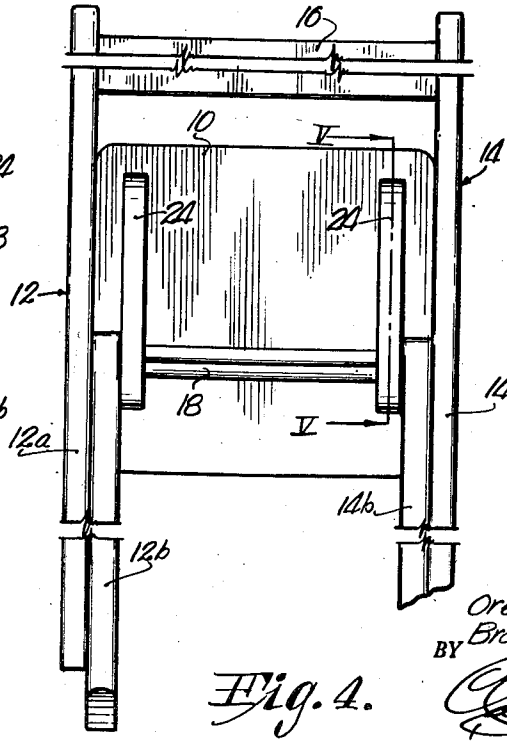


Fig. 4.

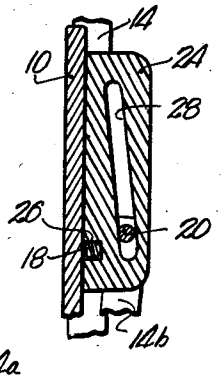


Fig. 5.

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COLLAPSIBLE FURNITURE

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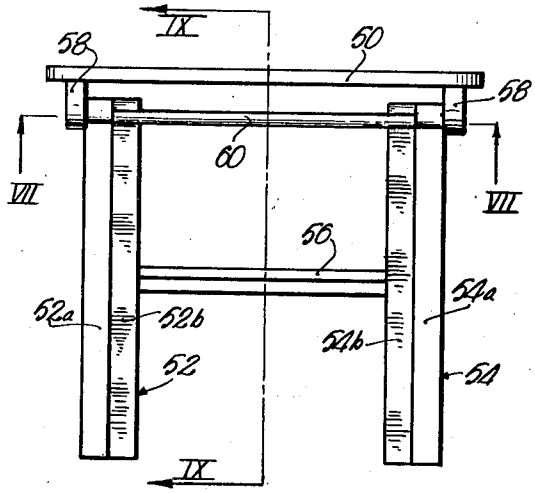


Fig. 6.

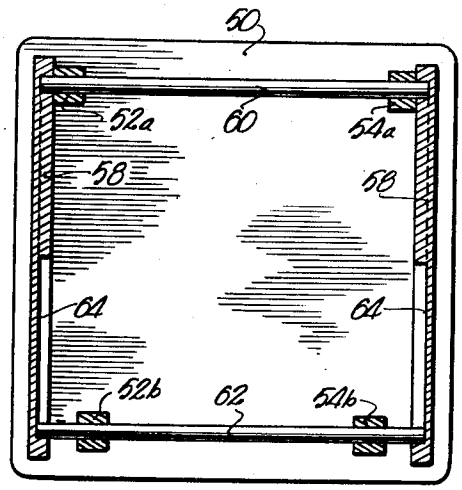


Fig. 7.

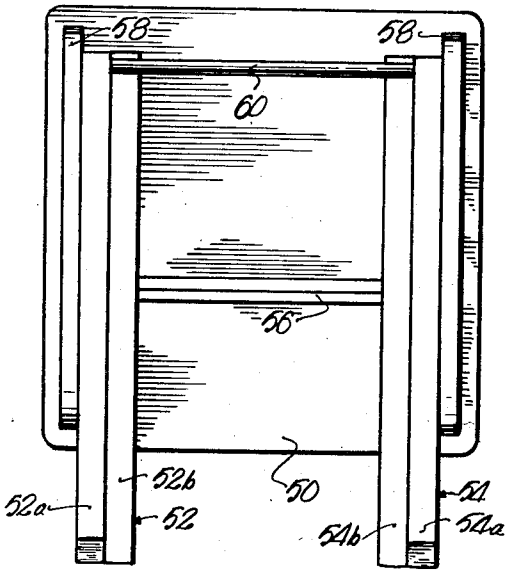


Fig. 8.

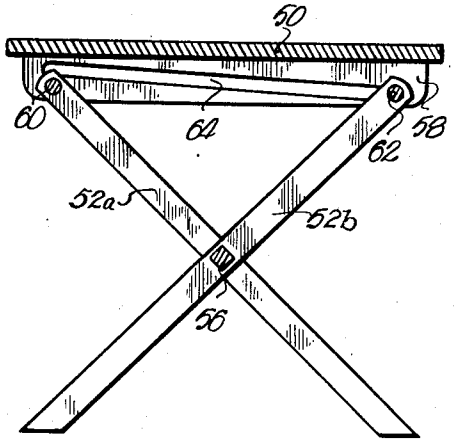


Fig. 9.

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COLLAPSIBLE FURNITURE

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3 Claims. (Cl. 155—143)

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This invention relates to articles of furniture, the primary object being to provide for complete collapsibility so as to minimize the space required for storing or packaging the same when in a collapsed condition, and to at the same time present structure that is extremely strong as compared with other types of conventional collapsible furniture.

It is the most important object of the present invention to provide a collapsible article of furniture that includes a normally horizontal panel and two pairs of pivotally interconnected crossed legs, the legs in turn being pivotally and slidably secured to the panel through the medium of depending members thereon that have elongated slots for receiving an interconnected cross member for the pairs of legs.

Another object of this invention is to provide in collapsible furniture, sliding interconnection between the legs and the top panel thereof formed by angularly disposed, elongated slots that permit disposition of the legs when collapsed relatively close to and in substantially flat engagement with the lowermost face of the panel thereof.

Other objects include the way in which the legs of the collapsible furniture are joined to the panel so as to afford added strength, together with many details of construction of equal importance, all of which will be made clear or become apparent as the following specification progresses, and in the drawings:

Figure 1 is a side elevational view of an article of furniture made pursuant to one form of our present invention.

Fig. 2 is a front elevational view thereof.

Fig. 3 is a side elevational view showing the same in a collapsed condition.

Fig. 4 is a plan view showing the lowermost face of the article of furniture in a collapsed condition.

Fig. 5 is a fragmentary, detailed, cross-sectional view taken on line V—V of Fig. 4.

Fig. 6 is an elevational view of an article of furniture made according to a modified form of the present invention.

Fig. 7 is a cross-sectional view taken on line VII—VII of Fig. 6 looking in the direction of the arrows.

Fig. 8 is an inverted plan view of the article illustrated in Figs. 6 and 7 in a collapsed condition; and

Fig. 9 is a vertical, cross-sectional view taken on line IX—IX of Fig. 6.

In the embodiment of the present invention shown in Figs. 1 to 5 inclusive, there is shown a chair that includes a substantially horizontal panel 10 forming the seat thereof, together with

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two pairs of crossed legs 12 and 14. Each pair of legs 12—14 includes relatively long legs 12*a* and 14*a* respectively, and shorter legs 12*b* and 14*b* respectively. These pairs of legs 12—14 are pivotally interconnected at their point of crossing by short dowel pins (not shown), and the legs 12*a*—14*a* are interconnected by a back-rest 16. The long legs 12*a*—14*a* are also joined by a cross member 18 that underlies the panel 10. Short legs 12*b*—14*b* are interconnected by parallel, cross-members 20 and 22.

It is noted that the upper ends of the short legs 12*b*—14*b* are beneath the panel 10 and between the legs 12*a*—14*a*. A pair of spaced-apart, elongated members 24 depend from the panel 10 to which they are rigidly secured in any suitable manner and the members 24 are in parallelism between the uppermost ends of the legs 12*b*—14*b*.

A notch 26 in each member 24 respectively, clears the cross member 18 for free rotation of the latter within the notches 26 and an elongated slot 28 is formed in each depending member 24 respectively for slidably and rotatably receiving the cross member 20. Slots 28 extend substantially the entire length of the elongated members 24 at an angle with respect to the panel 10, one end of the notches 28 being adjacent to and spaced from the proximal notch 26. In other words, the longitudinal axes of the slots 28 and the lower face of the panel 10, diverge as that end of the members 24 adjacent notch 26, is approached.

When the chair is in the operative position illustrated in Figs. 1 and 2 of the drawings, the panel 10 is supported directly by the cross member 18 through engagement therewith as shown in Fig. 5. Cross member 20 bears against that end of the slot 28 remote from notches 26 and thereby also serves to support the panel or set 10.

When the chair is folded or collapsed, the legs 12*b*—14*b*, by virtue of their pivotal connection with the legs 12*a*—14*a*, swing to a position substantially parallel with the legs 12*a*—14*a* in the manner illustrated in Figs. 3 and 4. During such relative movement of the legs, the cross-member 20 moves or slides along the slots 28 toward the notches 26 and assumes a position relative to the members 24 substantially as shown in Fig. 5. Thus, the panel 10 swings into a plane parallel with the longitudinal axes of the legs 12*a*—12*b*. In the folded condition, panel 10, cross-members 18, 20 and 22, legs 12*b* and 14*b*, and the members 24, are all positioned substantially between the long legs 12*a*—14*a* below back-rest 16 as is clear in Figs. 3 and 4.

It is also notable that in the folded condition,

the uppermost ends of the legs 12b—14b move to a position overlapping and only slightly spaced from the cross-member 18.

Figs. 3 and 5 of the drawings clearly show the relatively flat nature of the entire article when collapsed, facilitating tremendously the problem of packing or storing when not in use.

In the embodiment of the present invention shown in Figs. 6 to 9 inclusive, a table having a top panel 50, is supported by two pairs of crossed legs 52 and 54 and comprising outermost legs 52a and 54a, and innermost legs 52b and 54b. A cross-member 56 is interposed between the legs 52b and 54b for holding the same in spaced-apart relationship and cross-member 56 extends through the legs 52b and 54b and into the legs 52a and 54a in the form of dowels not shown, for pivotally joining the pairs of legs 52 and 54.

A pair of elongated members 58 depend from the tabletop 50 to which they are affixed, members 58 being in parallelism and being joined at one end thereof by a cross member 60 that also passes through the outermost legs 52a and 54a at the uppermost ends thereof for pivotally connecting these last mentioned legs to the member 58. The inner legs 52b and 54b are joined at the uppermost ends thereof by cross-member 62 that extends beyond the outermost faces of the legs 52b and 54b and into elongated slots 64 formed in the members 58. One end of the slots 64 is disposed between the cross-member 60 and the panel 50 as illustrated in Fig. 9 and the slots 64 are angularly disposed in converging relationship with the panel 50 as the member 60 is approached.

It is seen that in the operative position, tabletop 50 is supported by both of the cross-members 60 and 62, the latter being against one end of the slots 64 opposite to the cross-member 60 as shown in Figs. 7 and 9. In collapsing the table, legs 52b and 54b are caused to swing relative to the legs 52a and 54a as the cross-member 62 slides along slots 64 toward the cross-member 60. During the initial swinging movement of the inner legs 52b and 54b, the outer legs 52a and 54a swing away from the panel 50 on the cross-member 60, but as soon as the member 62 approaches that end of the slot 64 adjacent cross-member 60, the pairs of legs 52 and 54 may be swung simultaneously toward the panel 50 as the legs 52a and 54a pivot on member 60 and as the uppermost ends of legs 52b and 54b, together with cross-member 62, move to a position between panel 50 and the cross-member 60. Thus, in the collapsed condition, the four legs 52—54 and the three cross-members 56, 60 and 62, are all disposed between the parallel members 58 as shown in Fig. 8 rendering the entire thickness of the collapsed table equal to that of the thickness of panel 50 and the width of the members 58.

It is only through the angularity of the slots 28 or 64 as the case may be, that the collapsible furniture hereof is capable of assuming such flat condition and, further, it is notable that in each of the two modifications, the arrangement and formation of the various parts provides an extremely strong structure and tests have proved that the panels 10 or 50, as the case may be, are capable of supporting a relatively great amount of weight when the devices are placed in operative use.

Accordingly, while details of construction may be varied from that above set forth, it is desired to be limited only by the spirit of the invention as defined by the scope of the appended claims.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A collapsible article of furniture comprising a normally horizontal panel; a number of elongated, parallel strips depending from said panel, each having a longitudinally extending slot formed therein; two pairs of crossed legs, the legs of each pair being pivotally joined at the point of crossing thereof; a first cross-bar pivotally securing one leg of each pair thereof to said strips; and a second cross-bar joining the other leg of each pair thereof and slidable in said slots, said cross-bars being parallel, said slots each converging with said panel as one end of the slots is approached.

2. A collapsible article of furniture comprising a normally horizontal panel; a number of elongated, parallel strips depending from said panel, each having a longitudinally extending slot formed therein; two pairs of crossed legs, the legs of each pair being pivotally joined at the point of crossing thereof; a first cross-bar pivotally securing one leg of each pair thereof to said strips; and a second cross-bar joining the other leg of each pair thereof and slidable in said slots, said first cross-bar being spaced from the panel, presenting a clearance for receiving the legs joined by the second cross-bar when the legs are collapsed against the panel, said slots each converging with said panel as one end of the slots is approached.

3. A collapsible article of furniture comprising a normally horizontal panel; a number of elongated, parallel strips depending from said panel, each having a longitudinally extending slot formed therein; two pairs of crossed legs, the legs of each pair being pivotally joined at the point of crossing thereof; a first cross-bar pivotally securing one leg of each pair thereof to said strips; and a second cross-bar joining the other leg of each pair thereof and slidable in said slots, said first cross-bar traversing the panel and bearing thereagainst for supporting the panel when the legs are operatively extended, said slots each converging with said panel as one end of the slots is approached.

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