A. WHITE.

FURNITURE JOINT.

APPLICATION FILED AUG. 30, 1918.

1,306,452.

Patented June 10, 1919.

2 SHEETS—SHEET 1.

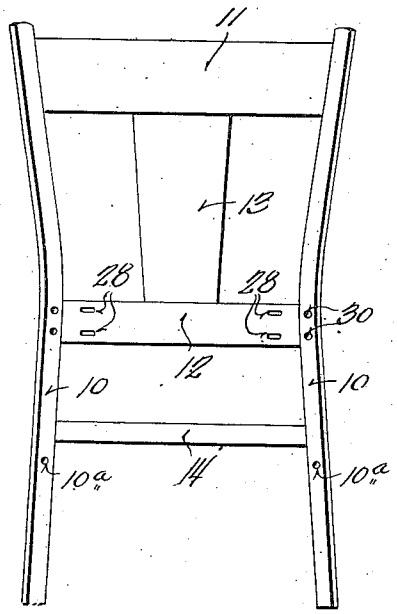
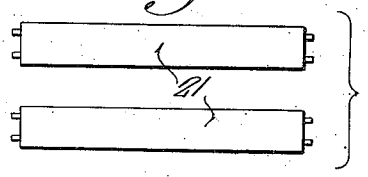


Fig. 1.

Fig. 3.



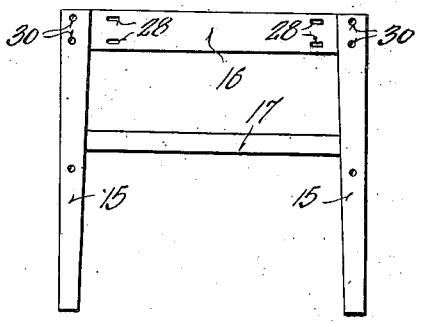


Fig. 2.

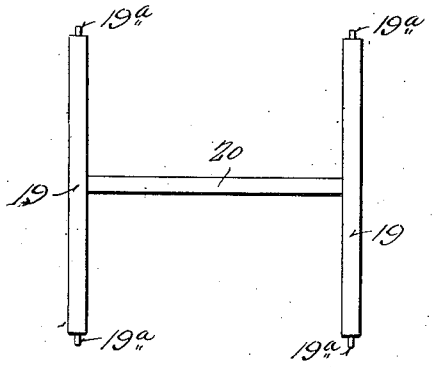


Fig. 4.

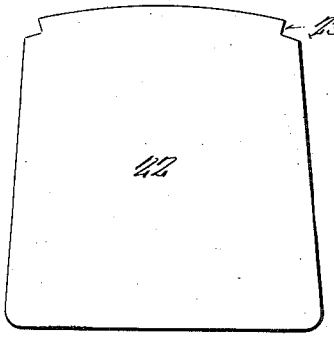


Fig. 5.

WITNESSES:

INVENTOR

Arthur White

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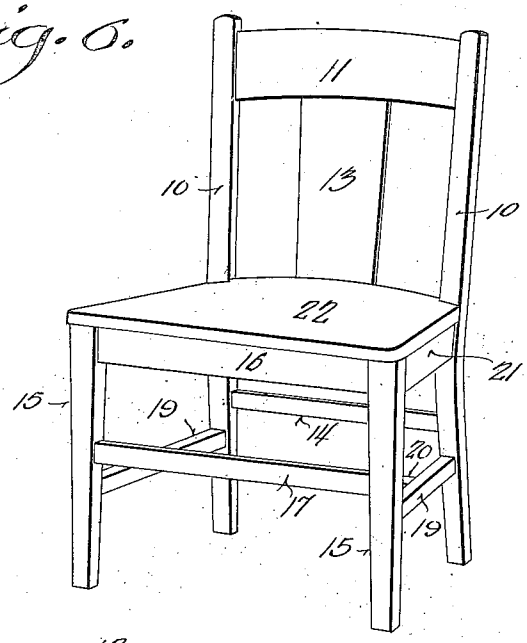
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2 SHEETS—SHEET 2.

Fig. 6.



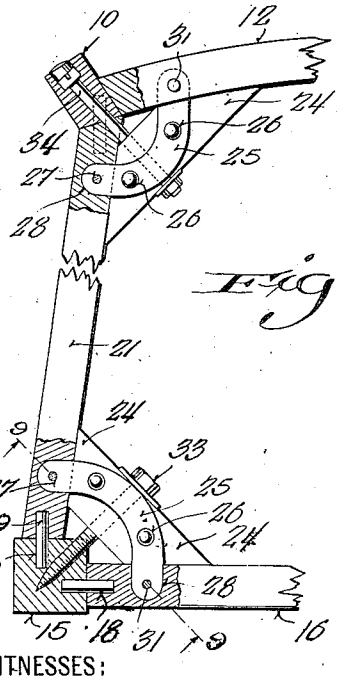


Fig. 7.

Fig. 8.

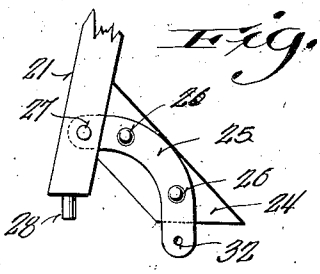
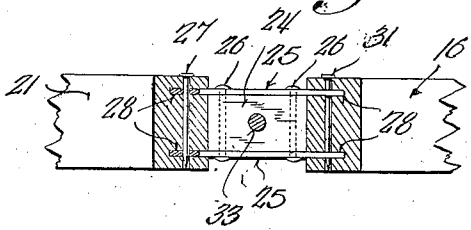


Fig. 9.



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UNITED STATES PATENT OFFICE.

ARTHUR WHITE, OF SHEBOYGAN FALLS, WISCONSIN.

FURNITURE-JOINT.

1,306,452. Specification of Letters Patent. Patented June 10, 1919.

Application filed August 30, 1918. Serial No. 252,104.

To all whom it may concern:

Be it known that I, ARTHUR WHITE, a citizen of the United States, and resident of Sheboygan Falls, in the county of Sheboygan and State of Wisconsin, have invented certain new and useful Improvements in Furniture-Joints; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in furniture structures of that type such as chairs and tables, wherein there is provided a box or frame on which the top member of the furniture article rests.

It is primarily the object of my invention to provide in a most economical manner, an improved connection between the box sills and the legs at the corners of the article of furniture, and it is more particularly an object to provide such a connection which lends itself most readily to use in a knock-down structure.

A further important object resides in the provision of an improved knock-down structure whereby, without adding materially to the bulk of the structure when packed for shipping, the leg members may be permanently connected with certain of their connecting members at the time of manufacture of the chair, so as to provide for a most simple assembling operation after shipping the article, and so as to conduce to a maximum firmness of parts.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of parts, as hereinafter described and defined by the appended claims.

In the accompanying drawings:

Figures 1 to 5 are detail views of the various assembling units of my improved knocked-down chair.

Fig. 1 is an elevational view of the back unit.

Fig. 2 is an elevational view of the front unit.

Fig. 3 is a view showing the two box frame units.

Fig. 4 is a plan view of the leg stretch unit, and

Fig. 5 is a plan view of the seat unit.

Fig. 6 is a perspective view of the assembled chair.

Fig. 7 is a plan view of one side of the box portion of the chair, with the corners of said box portion broken away.

Fig. 8 is a plan view of one of the disconnected box sills.

Fig. 9 is a sectional view on the line 9—9 of Fig. 7.

Referring now more particularly to the accompanying drawings, 10 designates each of a pair of leg and back bars, which are connected at their upper ends by a horizontal back board 11 and which are connected at their intermediate portions by the rear sill 12 of the chair box, a vertical back board 13 extending between and secured to the sill 12 and the top board 11. A rear stretch bar 14 also connects the lower portions of the legs, and in the manufacture of my chair, all of the parts heretofore described are permanently secured together to form a substantially flat assembling unit of my chair.

A second assembling unit of the chair is formed by the front legs 15 which are rigidly and permanently connected at their upper ends by the front sill 16 of the chair box, a front stretch bar 17 connecting the intermediate portions of the legs. The securement of each end of the box sill 16 to the leg 15 is effected by means of the usual dowel 18. A third assembling unit for the chair comprises a pair of side leg stretches 19 connected by an intermediate bar 20 and having their ends provided with dowels 19^a engaging in sockets 10^a in the chair legs upon assembly of the chair after shipping, the intermediate bar 20 being permanently connected with the leg stretch bars 19 at the time of manufacture. 21 designates each of the side sills of the chair box, and these sills carry means for securing them to the legs and the other box sills to thus assemble the chair. A seat member 22 is provided which is adapted to seat on the chair box and leg ends and to be secured thereto in any suitable manner, the rear corners of the seat member being cut out at 23 in the usual manner to receive the rear leg bars.

The securing means carried by each end of each box side sill 21 comprises a brace bar 24 projecting obliquely from the sill adjacent its end, said brace bar having its outer end face beveled to fit against the inner face of one of the leg-connected box sills in assembly of the chair. For securing this brace bar to the sills, bent plates 25 are secured on

the top and bottom faces of the brace bar by rivets 26 passing through the curved intermediate portions of the plates, and the ends of these plates are projected beyond the beveled ends of the brace bar. The ends of the plates adjacent the side sill 21 project transversely into the sill and are secured by a permanent fastening nail 27 passed through said plate ends and the sill, it being noted that the width of the sill is greater than the width of the brace plate. The other ends of the bars 25 project from the end of the brace bar and are adapted to engage in sockets 28 in the adjacent leg-connected box sill. Dowels 29 project from the end faces of the box side sills 21 and are engageable in sockets 30 in the leg members. It is noted that the side sills 21 may be, and in the present instance are, convergent toward the rear of the chair, and to facilitate assembly of the chair, the dowels 29 and the projected ends of the metal plates 25 are disposed in parallel relation to each other and in slightly oblique relation to the sill 21, whereby they may be properly engaged in the sockets of the leg units, all of the receiving sockets of each unit being parallel.

In the manufacture of the chair units, a pair of brace bars 24 are connected with each side sill 21, together with the plates 25, and thus an assembling unit is provided which may be most readily manipulated in the assembling operation to effect an exceedingly simple and convenient assembling operation.

In assembly, it is merely necessary to insert the dowels 29 and projected ends of the plate 25 in the corresponding sockets of the leg units heretofore described, the leg stretch unit including dowels 19^a, and comprising bars 19 and 20, being at the same time engaged in the sockets 10^a of the legs. Securing nails 31 are then driven through the end portions of the front and rear box sills 12 and 13, and through openings 32 in the plate ends which project into their recesses, it being noted particularly by reference to Fig. 9, that these nails are relatively heavy in character and have their ends beveled whereby as the ends of the nails pass through the openings 32, a drawing action is set up by reason of their bevel to effect a snug engagement of parts. The parts are further connected and clamped together by lag screws 33 passed through the central portion of the forward brace bars 24 and diagonally threaded in the front legs 15. Draw bolts 34 are similarly passed through the rear brace bars 24 and are passed transversely through the rear leg bars 10. The seat member 22 engages on the upper edges of the box sills and on the leg ends, and may be secured thereto in any manner, not pertinent to my invention.

A comparatively simple structure has thus been provided which may be set up in a most ready manner and without the aid of any special skill to provide a most substantial article. It is noted that the plates 25, in addition to providing the connecting projections for the ends of the brace bars 24, also serve to reinforce said brace bars and thus add materially to the strength of the structure the wooden brace bars 24 in addition to procuring an economy of manufacturing cost over metallic brace elements also affords ideal clamping surfaces engaging the sills whereby a maximum and most durable soundness of construction may be procured since there is avoided the tendency to wear and looseness which would be set up in connection with metallic clamping surfaces engaging the sills, due to the severe stresses imparted in the use of the chair.

While I have shown and described my invention in the embodiment of a chair, it may be readily appreciated that my invention may be as well associated with a knocked-down table structure, merely by increasing the proportions and using the member 22 as a table top, it being also understood that various changes and modifications of structure within the scope of the appended claims, may be resorted to, without departing in any manner from the spirit of my invention.

My invention has particular value in a chair structure inasmuch as, for the proportion of material which it contains, a chair is subjected more often to extraordinary strains than any other article of furniture, and inasmuch as glue has been mainly relied upon in chair construction to hold the parts snugly together, a considerable weakness is present in such ordinary constructions in view of the deterioration of the glue, particularly under continued stresses permitting looseness of parts and liability of breakage. By my improved construction I more than double the strength of the chair structure, as compared to ordinary constructions, without adding materially to the cost of manufacture, and in my construction a permanent strength is afforded the chair which is not possible in constructions relying upon glue to retain rigid connection of parts.

By my improved knock-down arrangement, permitting most ready assembly when desired, the bulk of knock-down chair structures is less than half of the ordinary set up structure, thus, in shipping permitting the most favorable railroad freight classification of "knock-down flat," the rate on shipments so classified being less than one-half of the freight rate on set up shipments, also in shipping chair structures formed of my readily assembled units, there exists a minimum liability of breakage or other damage.

What is claimed is:

1. A corner joint for furniture comprising

the combination with a pair of adjacent box sills of a brace block extending diagonally therebetween and abutting therewith, and a metallic plate secured to the block and having its ends directed laterally, each end of the plate projecting transversely into and secured in one of the box sills.

2. A corner joint for furniture comprising the combination with a pair of adjacent box sills of a brace block extending diagonally therebetween, metallic plates on the top and bottom faces of the block having their ends directed laterally from the block, securing members passed through said plates and blocks for securing them together, the lateral ends of said plates projecting transversely into said sills, and securing means passed through said sills and plate ends.

3. A knock-down furniture structure comprising pairs of legs, a pair of opposed box sill members permanently connected each with one of the pairs of legs, said sills and legs being provided with parallel transverse recesses, a second pair of box sills, brace bars extending obliquely from the ends of the second named pair of sills, and projections on the ends of said sills and brace bars extending in parallel relation and engageable in said parallel recesses of the legs and first named sills, and a seat engageable on said box sills.

In testimony that I claim the foregoing I have hereunto set my hand at Sheboygan Falls, in the county of Sheboygan, and State of Wisconsin.

ARTHUR WHITE.