

[72] Inventor **Karen R. Stiglitz**
4804 Chevy Chase Blvd., Chevy Chase,
Md. 20015
 [21] Appl. No. **16,350**
 [22] Filed **Mar. 4, 1970**
 [45] Patented **May 11, 1971**

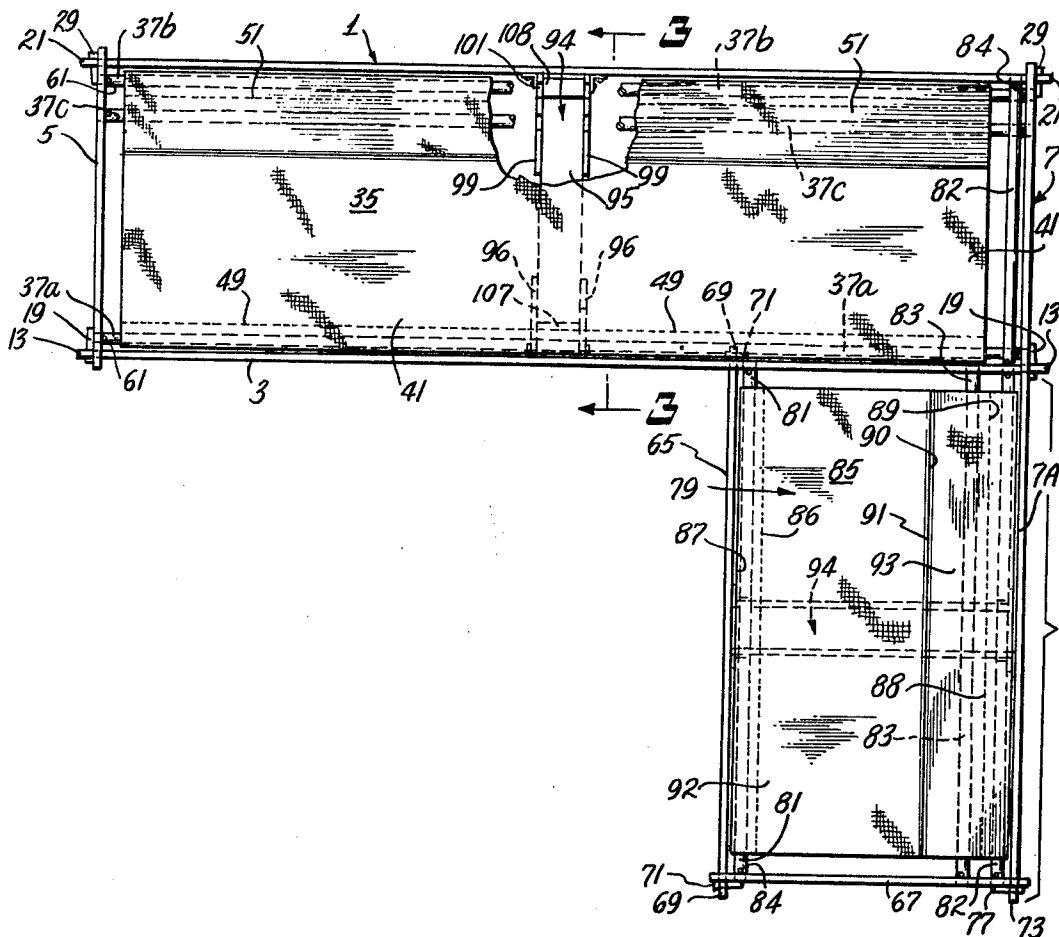
[56] **References Cited**
UNITED STATES PATENTS
 2,829,707 4/1958 Liebson..... 297/440X
 3,186,758 6/1965 Wanzenfied..... 297/118
 3,241,885 3/1966 Deaton..... 297/440
 3,379,474 4/1968 Schwarz, Jr. 297/441X
 3,380,777 4/1968 Bennett..... 297/440
 3,455,604 7/1969 Turcksin 297/441

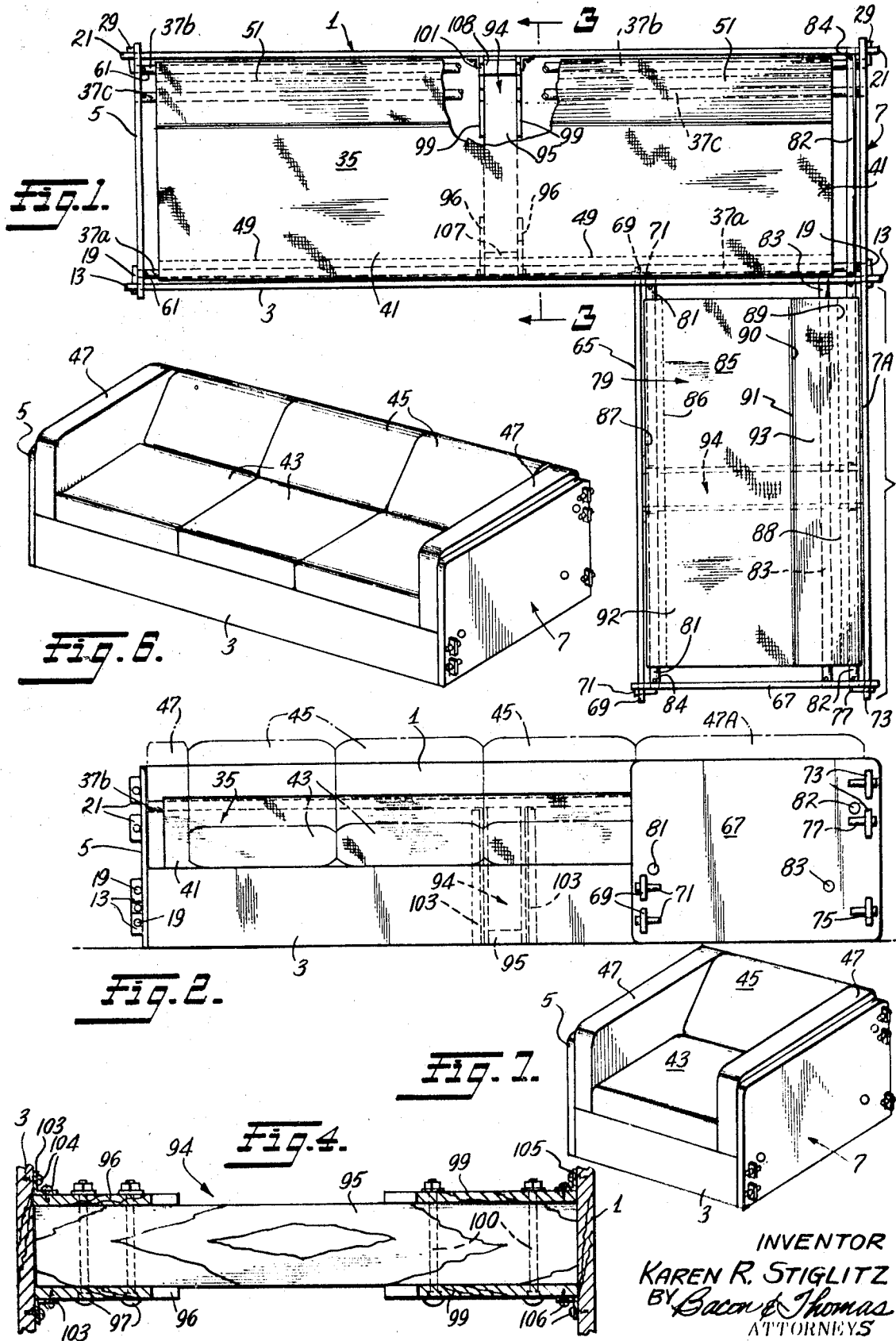
Primary Examiner—Casmir A. Nunberg
Attorney—Bacon & Thomas

[54] **DEMOUNTABLE SOFA OR CHAIR**
CONSTRUCTION
 11 Claims, 7 Drawing Figs.

[52] U.S. Cl..... 297/440,
 5/8
 [51] Int. Cl..... A47c 17/40,
 A47c 4/02
 [50] Field of Search..... 297/118,
 218, 219, 232, 248, 440, 416, 441, 442, 445, 457;
 5/8, 9

ABSTRACT: The outer rigid frame is demountably fastened together by pins inserted in transverse openings formed in the outer exposed ends of tongues which are rigid with the ends of the front and back walls of the frame and which protrude through openings formed in the sidewalls of the outer frame. The cushion support is formed of strong fabric detachably connected to three parallel, elongated dowels removably mounted on the sidewalls of the frame.





INVENTOR
KAREN R. STIGLITZ
BY *Bacon & Thomas*
ATTORNEYS

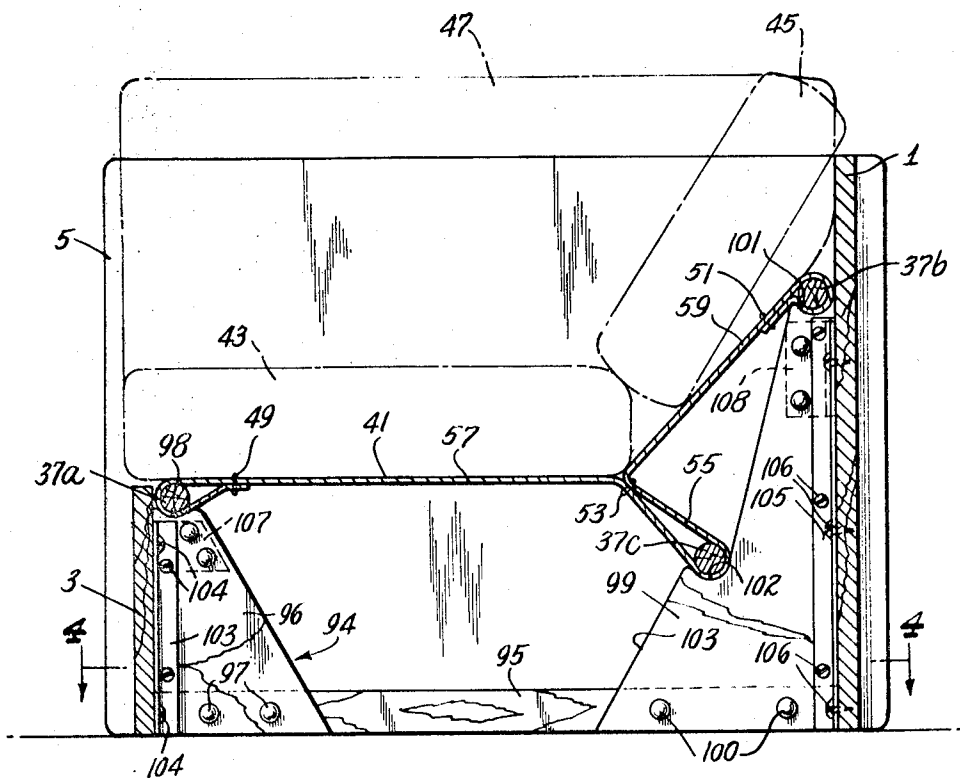


FIG. 3.

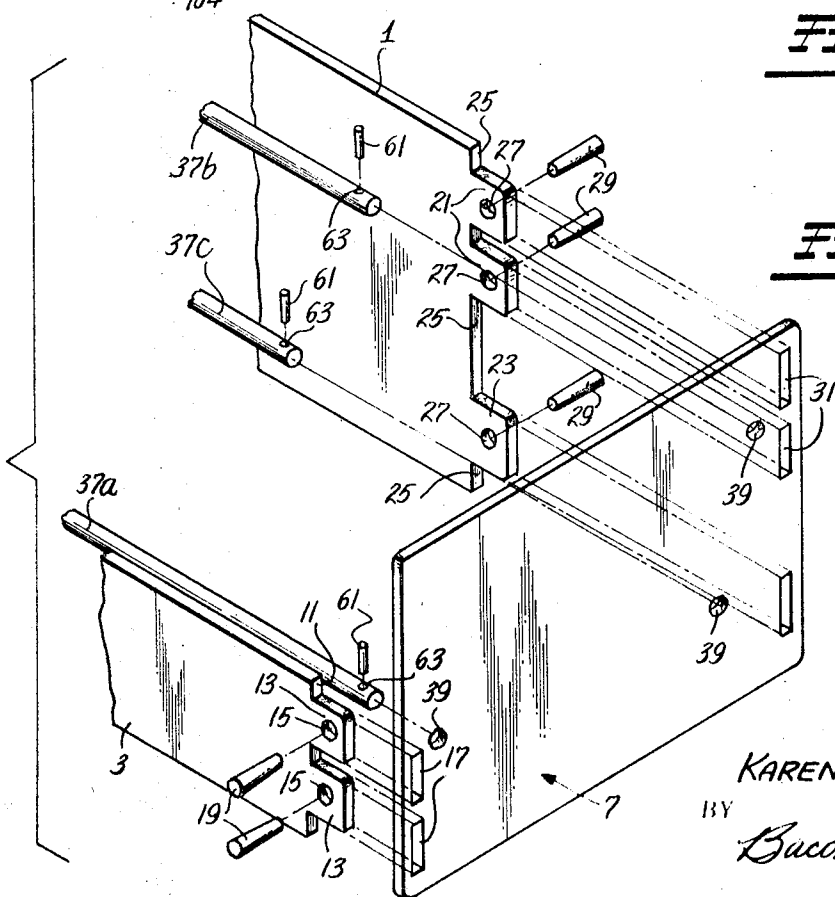


FIG. 5.

INVENTOR
KAREN R. STIGLITZ
BY
Bacon & Thomas
ATTORNEYS

1

DEMOUNTABLE SOFA OR CHAIR CONSTRUCTION

The invention is directed to a demountable sofa or chair construction and includes an outer frame which is rigid when assembled and which may be readily demounted into its component parts. Within this rigid outer frame, is removably mounted an inner support upon which the seat cushions and the back cushions rest.

It is an object of the invention to provide a demountable sofa or chair having component parts which may be readily manufactured in large numbers and the component parts required for a sofa or chair quickly assembled into a rigid and sturdy piece of furniture.

Another object of the invention is to provide articles of furniture which may be assembled from various preformed parts into individual chairs or sofas of varying width.

A further object of the invention is to provide demountable furniture which is of rugged construction, of pleasing appearance and inexpensive to manufacture.

These and other objects and advantages of the invention will become more apparent upon considering the following specification and claims in the light of the drawings in which:

FIG. 1 is a plan view of a demountable L-shaped sofa according to the present invention with parts thereof shown broken away for purposes of clarity and with the sofa cushions omitted;

FIG. 2 is a front elevational view of the sofa of FIG. 1 with the sofa cushions shown in phantom lines;

FIG. 3 is an enlarged, transverse, sectional view taken from the line 3-3 of FIG. 1;

FIG. 4 is a horizontal sectional view through the median support taken on the line 4-4 of FIG. 3;

FIG. 5 is a fragmentary, exploded, isometric view of one side of a sofa or chair showing the arrangement of the rigid structural elements;

FIG. 6 is a perspective view of a conventionally shaped sofa constructed according to the invention; and

FIG. 7 is a perspective view of a chair with cushions constructed according to the present invention.

Sofas and chairs constructed according to this invention include a high, substantially rigid backwall member 1 and a low, substantially rigid front wall member 3. The back and front wall members are detachably connected at one end to a substantially rigid sidewall member 5 and at the other end to a sidewall 7 which, in the form of the invention shown in FIGS. 1 and 2, forms a sidewall for the horizontally extending portion of the sofa and an extended portion 7A which forms a backwall for the vertically disposed portion of the sofa as it is viewed in FIG. 1. As shown in FIGS. 6 and 7, the sidewall 7 is of the same size and construction as the sidewall 5 and does not include an extended portion. While the lower edge of the front, back and side walls are shown resting on the surface of a floor or the like, obviously legs, not shown, could be provided on certain of the walls in order to space the lower edge of the walls above the floor, if desired.

The particular manner in which the back and front wall members 1 and 3 are demountably connected with sidewall members 5 and 7 of the sofa is best shown in FIG. 5. While only one end of the backwall member 1 and of a front wall member 3 is shown in FIG. 5, it will be understood that both ends of the back and front wall members are constructed in the same manner for attachment to the adjacent sidewalls. As shown, the front wall 3 is of less height than the backwall 1 and is notched or cut away at each end so as to form aligned, vertically extending shoulders 11 and a pair of outwardly extending keys or tongues 13 provided with transverse openings 15. When the front wall member 3 is assembled with the adjacent sidewall 7, the tongues or keys 13 extend through openings 17 formed in the sidewall 7 and locking pins 19, which preferably are tapered, are inserted through the openings 15 in order to rigidly secure the front wall member 3 to the sidewall 7. The openings 15 in the key members 13 are located with respect to the shoulders 11 so that, when the shoulders 11 are in abutment against the inner surface of the sidewalls the outer surface of the pins 19 frictionally engage

the outer surface of the sidewalls and a rigid connection is provided between the front wall and the sidewalls.

The backwall 1 is also notched or recessed at each end as explained in connection with the front wall member 3 and includes a pair of tongues or keys 21 located a short distance below the top edge of the backwall member and a single key 23 located a short distance above the bottom edge of the backwall. The keys 21 and 23 extend outwardly from the vertically aligned shoulder portions 25 and are formed with transverse openings 27 through which the locking pins 29 extend. When the keys 21 and 23 are inserted through the key-receiving openings 31 formed in the sidewall 7 and the shoulder portions 25 are in engagement with the inner surface of the sidewall, the locking pins 29, inserted in the openings 27, frictionally engage the outer surface of the sidewall 7 thus forming a rigid connection between the backwall 1 and the sidewall 7. Although the keys 13, 21 and 23 are disclosed as being integral with the front and back wall members, it is to be understood that said keys may be formed separately and subsequently made rigid with the front and back wall members.

It will thus be seen that the front and back wall members and the sidewall members may be quickly and easily formed into a rigid outer frame merely by inserting the key members formed on either end of the front and back wall members through the openings provided in the sidewall members and then inserting the locking pins through the transverse openings formed in the keys.

An inner cushion support 35 is demountably supported within the outer rigid frame and includes three elongated cylindrical dowel members 37a, 37b and 37c which extend between the sidewalls 5 and 7 and parallel with the front and back wall members 1 and 3. One of the elongated dowel members 37a is disposed adjacent the inner surface at the upper edge of the front wall member 3, a second elongated dowel member 37b is disposed adjacent the inner surface near the upper edge of the backwall member 1 and a third elongated dowel member 37c is disposed horizontally below the first elongated dowel 37a and is spaced a short distance inwardly from the inner surface of the backwall member 1. In order to support the dowel members 37a, 37b and 37c on the sidewall members 5 and 7, openings 39 are formed in the sidewall members 5 and 7 in axial alignment with the dowel members and the ends of the dowels are inserted with a close fit in these openings 39.

The dowels are preferably cylindrical as viewed in cross section and of uniform diameter throughout their entire length so that they may be inserted and removed through the openings 39 formed in the sidewalls 5 and 7. However, the end portions of the dowels which are mounted in the openings 39 may be smaller in diameter than the remainder of the dowels so as to provide shoulders on the dowels in place of the pins 61 for engaging the inner surface of the sidewalls 5 and 7. The length of the dowels is arranged so that the outer ends of the dowels will be flush with the outer surface of the sidewall members 5 and 7 when the inner cushion support is mounted within the outer rigid framework.

A flexible sheet 41 of heavy material such as canvas or the like extends between the sidewalls 5 and 7 and is removably attached to the dowel members 37a, 37b and 37c to provide surfaces on which the seat cushions 43, the back cushions 45 and the side cushions 47 are supported.

The front edge of the fabric sheet 41 extends over the dowel member 37a and is doubled back upon itself and stitched from side to side as at 49 to form an open-ended hem which loosely encloses the dowel member 37a so that it may be readily inserted and withdrawn from the hem. The back edge of the fabric sheet 41 extends in like manner over the dowel member 37b and is folded back upon itself and stitching from side to side as at 51 to form a hem having open ends into which the dowel member 37b may be readily inserted and removed.

The sheet of fabric material 41 is folded back upon itself along a line parallel with the hems which enclose the dowel members 37a and 37b and at a point about two-thirds of the

distance from the dowel member 37a—to the dowel member 37b and is stitched from side to side as at 53 to form an elongated open-ended hem 55 in which the dowel member 37c is inserted. The line formed by the stitching 53 is disposed at an elevation above the dowel member 37c and toward the front edge of the sofa with respect thereto, the hem 55 being disposed at an angle of approximately 45° to a horizontal plane passing through the dowel member 37c.

The sheet of strong flexible fabric material 41 is so dimensioned and the hems are so arranged and stitched that when said fabric is mounted in position on the dowels 37a, 37b and 37c and the dowels are mounted in the openings 39 of the sidewalls 5 and 7 of the outer frame, the fabric material 41 provides a taut horizontal surface 57 extending from the front edge of the sofa or chair to the stitched seam 53 for supporting the seat cushions 43 and a taut inclined surface 59 extending from the stitched seam 53 to the rear dowel member 37b for supporting the back cushions 45. The side cushions may be designed so as to be supported by both surface 57 and 59. The dowels 37a, 37b and 37c may be maintained in position against axial movement by pins 61 which extended through transverse openings 63 formed in the dowels adjacent the ends thereof. The outer surface of the pins 61 engage or are contiguous to the inner surface of the sidewall members 5 and 7.

The demountable sofa or chair described above relates to the sofa shown in FIG. 6, the chair is shown in FIG. 7 as well as to the horizontally extending portion of the L-shaped sofa shown in FIG. 1. Thus it will be seen that by constructing the front wall 3 and the backwall 1 of the outer frame of the desired length and by forming the dowels 37a, 37b and 37c and the flexible sheet 41 of the cushion support of suitable dimensions for mounting in said outer frame, the width of chairs and sofas constructed according to this invention may be varied as desired.

In FIGS. 1 and 2, the L-shaped sofa includes a low front wall member 65 similar in construction to the front wall 3 and connected at one end thereof with the front wall 3 and at the other end thereof with the sidewall 67 in the same manner that the front wall 3 is connected with the sidewalls 5 and 7. That is, the front wall 65 is formed at each end thereof with a pair of keys 69 which extend through openings formed in the front wall 3 and in the sidewall 67. The pins 71 are inserted in transverse openings, formed in the portion of the keys which project beyond the inner surface of the front wall 3 and beyond the outer surface of the sidewall 67, for rigidly securing the walls 3, 65 and 67 together.

The portions 7A of the sidewall 7 forms the backwall for the portion of the sofa which extends vertically as shown in FIG. 1 in the same manner that the wall 1 forms the backwall for the portion of the L-shaped sofa which extends in a horizontal direction. The outer end of the wall portion 7A is provided at the upper part thereof with a pair of outwardly extending keys 73 and a single outwardly extending key 75 at the lower part thereof in the same manner that the backwall 1 is provided with keys 21 and the key 23. The keys 73 and 75 extend through openings formed in the sidewall 67 and tapered pins 77, inserted through transverse openings formed in the portion of the keys which projects outwardly beyond the outer surface of the sidewall 67 and frictionally engage said outer surface, rigidly secured to the sidewall 67 to the outer end of the portion 7A of the sidewall 7.

The detachable cushion support 79 for the L-shaped sofa is similar to the one already described and includes a first elongated dowel member 81 which extends parallel with and adjacent the upper inner edge of the front wall 65 and is mounted with the ends thereof inserted in openings formed in the front wall 3 and in the sidewall 67. A second elongated dowel member 82 disposed adjacent the inner surface and near the upper edge of the sidewall 7 and its extended portion 7A is mounted with the ends thereof inserted in openings formed in the backwall 1 and in the sidewall 67. A third elongated dowel member 83 extends parallel with the dowels 81 and 82 and is disposed a short distance inwardly from the

inner surface of the extended portion 7A of the sidewall 7 and a short distance horizontally below the dowel 81. The ends of the dowel 83 are mounted in openings formed in the front wall 3 and in the sidewall 67. The horizontally extending dowels may be secured against axial displacement by the pins 84 inserted in transverse openings formed near the ends of the dowels in the manner described above in connection with the dowels 37a, 37b and 37c and pins 61.

A sheet of a, flexible material 85, such as canvas or the like, extends from adjacent the sidewall 67 to adjacent the front wall 3 and is removably attached to the dowels 81, 82 and 83 in the same manner that the flexible sheet 41 is removably attached to the dowels 37a, 37b and 37c and, a sectional view taken through the portion of the L-shaped sofa which extends in the vertical direction in FIG. 1 would show the cushion support dowels and fabric to be the same as that illustrated in FIG. 3.

The front edge of the fabric 85 is doubled back and stitched along the line 86 forming an open-ended hem 87 in which the dowel 81 is mounted. The back edge of the fabric 85 is likewise doubled back and stitched along the line 88 forming an open-ended hem 89 in which the dowel 82 is mounted. The dowel 83 is mounted in an enlarged, open-ended hem 90 formed by doubling the fabric 85 back upon itself and stitching it along the line 91. The fabric 85 thus forms a taut horizontal surface 92 for supporting seat cushions and a taut, inclined back surface 93 for supporting back cushions. A side cushion 94, FIG. 2, rests on the fabric 85 and against the sidewall 67.

In sofa construction in particular, a median support strut 94 is positioned below the middle portion of the dowels and extends from the inner surface of the front wall 3 or 65 to the inner surface of the backwall 1 or portion 7A of the wall 7. Since the median support struts 94 are alike in structure and function, only the one disposed between the front and back walls 3 and 1 of FIGS. 1, 3 and 4 will be described.

The median support strut 94 includes a member 95, such as a piece of 2 inch x 4 inch wood, which extends from the inner surface of the front wall 3 to the inner surface of the rear wall 1 with the bottom surface of the support strut flush with the bottom edge of the front and back walls.

A pair of generally triangular-shaped, rigid brace members 96 are fixed at the lower ends thereof to the end of the member 95 which is adjacent the front wall 3 by the bolts 97. The upper end of each of the brace members 96 is formed with a concave recess 98 and the height of the brace members 96 is such that the dowel member 37a rests in the recesses 98 thus supporting the dowel 37a against downward deflection when weight is placed on the sofa cushion support.

A second pair of generally triangular-shaped rigid brace members 99 are fixed at the lower ends thereof to the end of the member 95 which is adjacent the rear wall 1 by the bolts 100. The upper end of each of the brace members 99 is formed with a concave recess 101 and the height of the brace members 99 is such that the dowel member 37b rests in the recesses 101 and is supported thereby.

A second concave recess 102 is formed in the inclined edge 103 of each of the brace members 99 and the height of the recess 102 is such that the dowel member 37c rests therein and is supported thereby. Thus the support strut provides saddle means on which the dowels rest.

In order to fasten the support strut 94A to the front and back walls 1 and 3 to maintain it in position and to prevent the front and back walls from bending or flexing outwardly away from the ends of the support strut, the angle iron brackets 103 are fastened to the brace members 96 and to the front wall 3 by the screw fasteners 104 while the angle iron brackets 105 are fastened to the brace members 99 and to the backwall 1 by the screw fasteners 106. A 4-inch block 107 fastened between the brace members 96 adjacent the upper ends thereof maintains them in parallel spaced-apart relation and a second block 108 maintains the brace members 99 in parallel spaced-apart relation.

5

If desired or necessary, a plurality of spaced-apart support struts may be employed along the length of the dowel members in order to provide adequate support for them and to prevent downward bending or flexing of the dowels when they are subjected to a heavy load such as might occur when a number of heavy persons are seated on a long sofa.

The various component parts of the sofa, except for the flexible sheet of heavy material, may be formed of wood, plywood, plastic, metal or other suitable substantially rigid or composite material. While the preferred forms of the invention have been disclosed herein, such obvious changes and alternations as may occur to one skilled in the art are to be considered within the purview of this invention as fall within the scope of the appended claims.

I claim:

1. A sofa or chair having a readily demountable rigid outer frame and an inner cushion support removably mounted within the outer frame, the outer frame comprising: a pair of rigid, spaced-apart sidewall members, a rigid backwall member and a rigid front wall member, and means demountably securing the back and front wall members and the sidewall members together; and the inner cushion support comprising: first, second and third parallel elongated members extending horizontally between the sidewall members and parallel with the front and back wall members, the first elongated member being disposed adjacent the inner surface at the upper edge portion of the front wall member, the second elongated member being disposed adjacent the inner surface near the upper edge of the backwall member, and the third elongated member being disposed a short distance inwardly from the inner surface of the backwall member, means for removably supporting the ends of the first, second and third elongated members on the sidewall members adjacent thereto, and fabric means extending between the sidewall members and detachably fastened to the three elongated members arranged to provide a substantially horizontal seat cushion support surface extending rearwardly from the first elongated member to adjacent the third elongated member and a back cushion support surface extending downwardly from the second elongated member to adjacent the third elongated member.

2. A sofa or chair according to claim 1 in which the means for removably supporting the ends of the first, second and third elongated members comprises openings formed in each of the sidewall members in axial alignment with the ends of the three elongated members, the end portions of each of the elongated members being removably mounted in the respective openings in the sidewalls.

3. A sofa or chair according to claim 2 in which the first, second and third elongated members are cylindrical.

4. A sofa or chair according to claim 3 in which the first, second and third elongated members are of substantially uniform diameter from end to end.

5. A sofa or chair according to claim 2 including means for removably securing the end portions of the first, second and third elongated members in said openings.

6. A sofa or chair according to claim 1 including support strut means disposed intermediate the sidewall members and extending between the front and the rear wall members, means fixedly securing the support strut means to the front and to the rear wall members, and three upwardly facing bearing surfaces formed on the support strut means for supporting the first, second and third elongated members, each of said elongated members resting on a different one of the bearing surfaces.

7. A sofa or chair according to claim 1 wherein the fabric means comprises a unitary sheet of heavy flexible material formed at the front edge thereof with a hem through which the first elongated member extends and at the back edge thereof with a hem through which the second elongated member extends, the sheet of flexible material being formed intermediate

6

the front and back edges with an elongated hem through which the third elongated member extends.

8. A sofa or chair according to claim 1 wherein the means demountably securing the back and front wall members and the sidewall members together comprises key means rigid with and extending outwardly from each end of the backwall and from each end of the front wall, said key means extending through cooperating tongue receiving opening formed in the adjacent sidewalls and projecting a short distance beyond the outer surface of the sidewalls, the projecting portion of the key means having a transverse opening formed therein, and pin means removably mounted in the transverse openings and engaging the outer surface of the respective sidewall.

9. An L-shaped sofa having a readily demountable rigid outer frame and a pair of inner cushion supports removably mounted within the outer frame, the outer frame comprising: a first section having a rigid backwall and a rigid front wall, a sidewall at one end of the front and back walls, and an elongated wall at the other end of the front and back walls, said elongated wall forming a sidewall for the first section and having a portion thereof extending for a substantial distance outwardly beyond the front wall forming the backwall member for a second section of the sofa which is disposed normal to the first section, means demountably securing the back and front walls to the sidewall and to the elongated wall, said second section including a front wall member extending outwardly from said front wall and parallel with said backwall member, a sidewall member disposed at the outer end of the front wall member and of the elongated wall, means demountably securing the sidewall member to the front wall member and to the elongated wall, and means demountably securing the front wall member to said front wall, each of the inner cushion supports comprising, a plurality of spaced-apart parallel elongated members, and flexible sheet means detachably fastened to the elongated members arranged to provide a taut cushion support, means removably mounting one of the cushion supports on the outer frame and within the first section thereof, and means removably mounting the other of the cushion supports on the outer frame and within the second section thereof.

10. A sofa of L-shaped configuration having a readily demountable rigid outer frame and a pair of inner cushion supports removably mounted within the outer frame, the outer frame comprising, a pair of backwall members disposed normal to each other, a pair of front wall members disposed normal to each other, a sidewall member disposed at the outer ends of the back and front wall members, and means demountably fastening the back, front and sidewall members together to form an L-shaped rigid outer frame, the inner cushion supports being disposed normal to each other and each comprising a plurality of spaced-apart, parallel, elongated members, fabric means detachably fastened to the elongated members to provide a taut cushion support surface, and means for removably supporting the elongated members of each of the inner cushion supports on the rigid outer frame.

11. A sofa or chair having a readily demountable rigid outer frame and an inner cushion support removably mounted within the outer frame, the outer frame comprising: a pair of rigid, spaced-apart sidewall members, a rigid backwall member and a rigid front wall member, and means demountably securing the back and front wall members and the sidewall members together; and the removably mounted inner cushion support for seat and back sofa cushions comprising a plurality of spaced-apart, parallel, elongated members extending horizontally between the sidewall members and parallel with the front and backwall members, means for removably supporting the ends of the elongated members on the sidewall members adjacent thereto, and flexible sheet means extending between the sidewall members and detachably fastened to the elongated members.