Sept. 13, 1955 F. A. LISI 2,717,634

COLLAPSIBLE CHAIR

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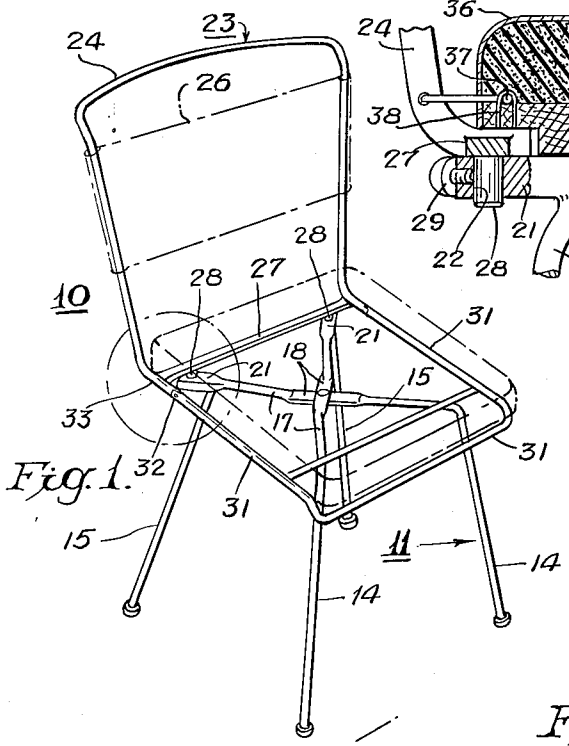


Fig. 1.

Fig. 5.

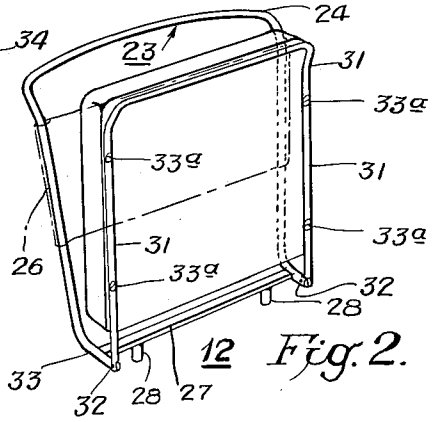


Fig. 2.

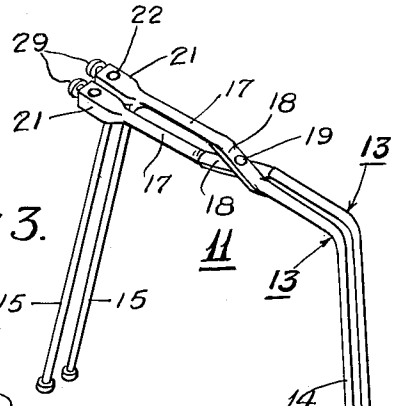


Fig. 3.

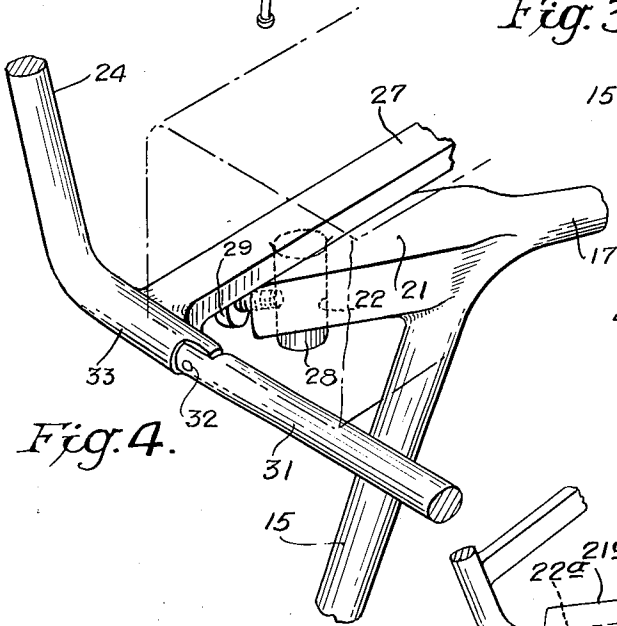


Fig. 4.

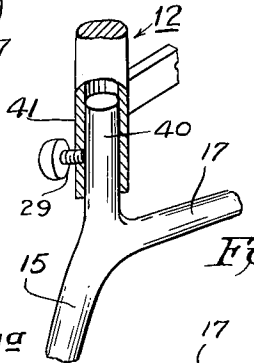


Fig. 6.

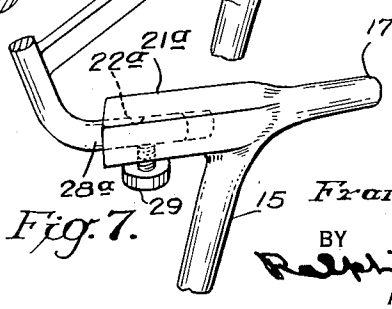


Fig. 7.

INVENTOR
Frank A. Lisi
BY
Ralph T. Franch
ATTORNEY

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COLLAPSIBLE CHAIR

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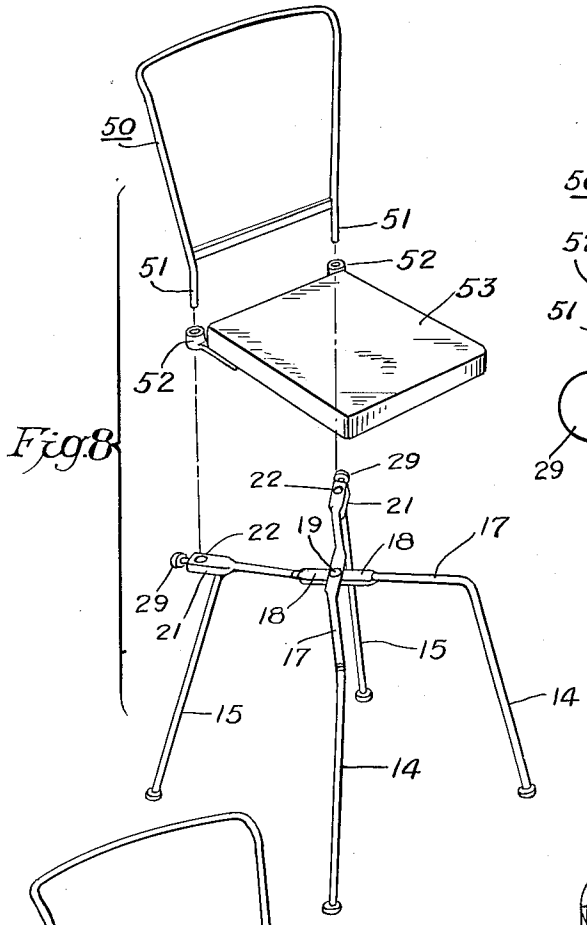


Fig. 8

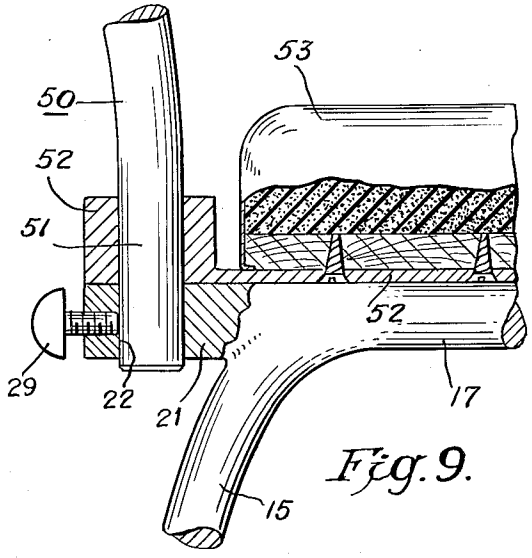


Fig. 9.

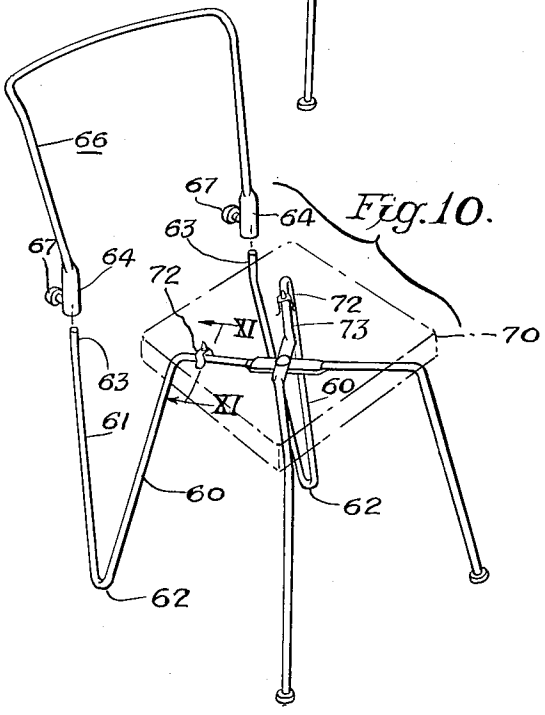


Fig. 10.

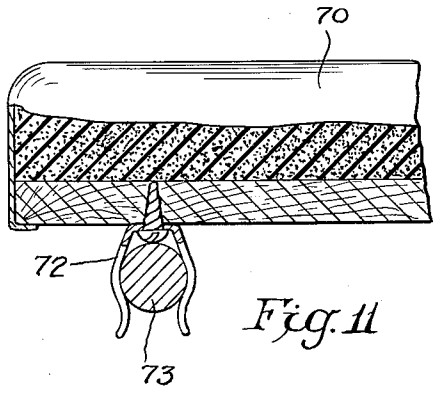


Fig. 11

INVENTOR
Frank A. Lisi
BY
Ralph T. French
ATTORNEY

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2,717,634

COLLAPSIBLE CHAIR

Frank A. Lisi, Philadelphia, Pa.

Application February 4, 1954, Serial No. 408,124

5 Claims. (Cl. 155—140)

This invention relates to furniture, more particularly to chairs, and has for an object to provide a chair which is easily assembled for use and easily collapsed for storage and/or transportation.

Another object of the invention is to provide a collapsible chair which will occupy a minimum of space when collapsed.

Yet another object of the invention is to provide a collapsible chair whose leg structure is separable as a unit from the back and seat structure, and is itself collapsible.

A further object of the invention is to provide, in a collapsible chair, a unitary leg and frame structure which is adjustable between collapsed and expanded positions.

Another object of the invention is to provide a novel mounting for the seat of a collapsible chair.

These and other objects are effected by the invention as will be apparent from the following description and claims, taken in accordance with the accompanying drawings forming a part of this application, in which:

Fig. 1 is a perspective view of a collapsible chair constructed in accordance with the present invention, portions of the structure being shown in phantom for the sake of clearness;

Fig. 2 is a perspective view of the back and seat assembly of the chair shown in Fig. 1, in collapsed position;

Fig. 3 is a perspective view of the leg and frame assembly of the chair shown in Fig. 1, in collapsed position;

Fig. 4 is an enlarged fragmentary perspective view of the circled portion of Fig. 1;

Fig. 5 is an enlarged fragmentary sectional view showing another means of pivoting the seat to the back structure;

Figs. 6 and 7 are enlarged fragmentary perspective views of alternate constructions for the interfitting connections between the back assembly and the leg and frame assembly;

Fig. 8 is an exploded perspective view of another form of the invention;

Fig. 9 is an enlarged fragmentary view, partially in section, of the assembled back, seat and frame of the chair shown in Fig. 8;

Fig. 10 is an exploded perspective view of a further form of the invention; and,

Fig. 11 is an enlarged sectional view, taken along the line XI—XI of Fig. 10, looking in the direction indicated by the arrows.

Referring now to the drawings in greater detail, the reference character **10** indicates, in its entirety, a collapsible chair comprising a leg and frame assembly **11** and a back and seat assembly **12**.

Referring to Figs. 1 and 3, it will be seen that the leg and frame assembly **11** comprises a pair of leg and frame structures **13** of inverted U shape, each structure **13** comprising front and rear legs **14** and **15**, respectively and a connecting horizontal frame member **17**. Preferably, the structures **13** are made of solid metal stock, such as, for example, wrought iron, aluminum or steel,

or of tubular material of the same or similar metals. However, it will be apparent that other metals may be utilized, as well as materials other than metal. The same choice of materials is available and desirable in connection with the back structure, to be hereinafter described.

The horizontal frame members **17** are flattened in horizontal planes at their central portions, as at **18**, with the two portions **18** offset vertically, one with respect to the other, so that when they are crossed, as shown, the remaining unflattened portions will be at the same level to evenly support the seat, as will be described later.

The flattened portions **18** are pivotally joined at their point of crossing, as at **19**, so that the leg and frame structures **13** may be adjusted between an operative position, shown in Fig. 1, and a collapsed position, shown in Fig. 3. In this latter figure it is also apparent that the central flattened portions **18**, are disposed at slight angles to adjacent unflattened portions of the horizontal frame members **17**, with the angle of one frame member opposed to that of the other frame member, so that, when in the collapsed position, the legs of one U-shaped frame structure are adjacent those of the other U-shaped leg and frame structure, with the result that the collapsed assembly occupies a minimum of storage space.

Each horizontal frame member **17** has a rear terminal portion **21** containing a generally vertical bore or socket **22** for supporting the back structure, in a manner to be hereinafter described.

Reference is now made to Figs. 1, 2 and 4 for disclosure of the structure of the back and seat assembly **12**. The back **23** may include a frame **24** provided with any suitable body-supporting structure, for example, a flexible strip **26** of fabric or other suitable material.

The lower ends of the frame **24** are joined by a crossbar **27** carrying a pair of widely-spaced downwardly-extending lugs or projections **28** adapted to mate with, and be closely received in, the bores or sockets **22** of the rear terminal portions **21** of the horizontal frame members **17**.

It will be apparent that the back, through its interengagement with the terminal portions of the horizontal frame members, retains the leg and frame assembly **11** in operative position with the legs widely spaced.

To prevent accidental separation of the back from the leg and frame assembly, the rear terminal portions are provided with suitable locking means, such as the set screws **29**, adapted to be turned into engagement with the depending lugs or projections **28**.

The seat may include a U-shaped frame **31** adapted, when in operative position, to rest on the frame members **17**, and having its rear terminal portions pivotally connected to the lower terminal portions **33** of the back frame, as at **32**. The seat cushion may be of any desired construction, suitably secured to the frame **31**, as by screws **33***a* (Fig. 2).

In Fig. 5 there is shown a modification wherein the seat frame **31** is omitted and the seat comprises a lower rigid supporting member **34** of plywood or other suitable material, carrying a pad **35** of sponge rubber or the like, covered with a suitable fabric **36**. The cushion assembly may be secured pivotally to the back frame **24** in any desired manner. As illustrated, a rod **37** extends lengthwise of the cushion assembly near the rear thereof, and adjacent the sides its terminal portions project rearwardly from the assembly and then laterally through aligned openings in the back frame **24**.

Staples **38** are utilized to retain the rod **37** in place between the plywood and the pad. It will be apparent that this construction permits the cushion to be pivoted upwardly parallel to the back when not in use. When the cushion is in use it rests upon the horizontal frame members **17**.

In Fig. 6 is shown a modification of the interfitting connection between the leg and frame assembly **11** and the back and seat assembly **12**, wherein the male member **40** is on the first-mentioned assembly and the female member **41** is on the latter assembly.

Fig. 7 shows yet another form of the connection, with the socket **22***a* opening rearwardly, and the lug **28***a* constituting a continuation of the back frame **24**.

Figs. 8 and 9 show another form of the invention, wherein the same leg and frame assembly as in the first-described form (Fig. 1) is associated with a back **50** whose lower terminal portions **51** pass through eyes **52** at the rear corners of a seat **53**, and then are secured in the sockets **22** of the frame rear extensions **21** by the setscrews **29**.

In Figs. 10 and 11 there is shown a further form of the invention, wherein the rear legs **60** have upward extensions **61** from their floor-engaging ends **62**. The upper terminal portions **63** of these extensions **61** are received in mating sockets in the lower terminal portions **64** of the back frame **66**, and are retained therein by the setscrews **67**.

The seat cushion **70** carries a pair of widely-spaced depending spring clips **72** adapted to frictionally engage the leg frame horizontal members **73**, thereby retaining the legs and their frame members in the correct operative position. In this form of the invention, as well as in that of Figs. 8 and 9, the back frame would be provided with a suitable body-supporting structure (not illustrated).

While the invention has been shown in several forms, it will be apparent that it is not so limited, but is susceptible of changes and modifications without departing from the spirit thereof.

What is claimed is:

1. In a collapsible chair, a pair of generally horizontal members disposed in crossed relation; a leg depending from each end portion of each of said horizontal members; means pivotally joining said pair of horizontal members at their point of crossing, whereby said crossed horizontal members may be pivoted between an operative position where the legs are widely spaced and an inoperative position where the legs of one member are positioned close to those of the other member; the rear portion of each of said horizontal members having a generally vertical opening therein; a back structure separable from the leg assembly and including a pair of depending lugs adapted to be removably-received in the openings of the horizontal member rear portions, whereby the back structure retains the horizontal members in operative position with the legs widely spaced.

2. Structure as specified in claim 1, including means for retaining the depending lugs of the back structure in the openings of the horizontal member rear portions.

3. In a collapsible chair, a pair of leg and frame structures of inverted U-shape, each structure comprising integral front and rear legs and a connecting horizontal frame member, said pair of U-shaped structures being arranged with their horizontal members crossed; means pivotally joining said frame members at their point of crossing, whereby said pair of U-shaped structures may be adjusted between an operative position in which the legs are widely spaced and a collapsed position in which the legs of one structure are positioned close to those of the other structure; a back structure including a pair of widely-spaced downwardly-extending projections; a rearward extension on each horizontal frame member, and said extensions and said projections interfitting, whereby the back structure is supported by said extensions and the pivotally-joined U-shaped leg and frame structures are retained in operative position by the back structure.

4. Structure as specified in claim 3, including a seat structure pivoted to the back structure and movable between an operative position where it rests on the frame members in a horizontal position, and a collapsed position where it is vertical and parallel to the back structure.

5. In a collapsible chair, a pair of leg and frame structures of inverted U-shape, each leg and frame structure comprising front and rear legs and a connecting horizontal frame member, and the frame member including a rear terminal portion having a socket therein, said pair of U-shaped structures being arranged with their horizontal frame members crossed; means pivotally joining said frame members at their point of crossing, whereby said pair of U-shaped structures may be adjusted between an operative position in which the legs are widely spaced and a collapsed position in which the legs of one U-shaped structure are disposed close to those of the other U-shaped structure; a back structure including a pair of widely spaced projections on the lower portion thereof and disposed in the sockets of the frame member rear terminal portions, whereby the U-shaped structures are maintained in operative position; and a seat structure secured to the back structure lower portion and supported on the horizontal frame members.

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