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FORM FITTING METAL SPRING SEAT

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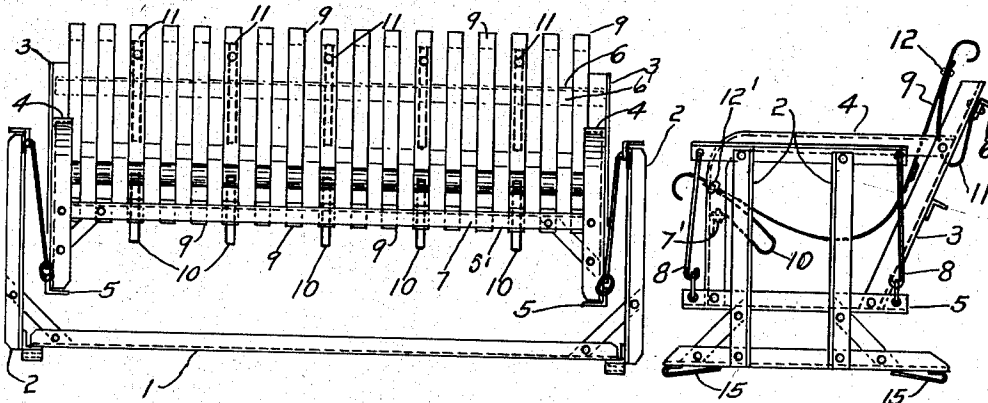


Fig. 1.

Fig. 2.

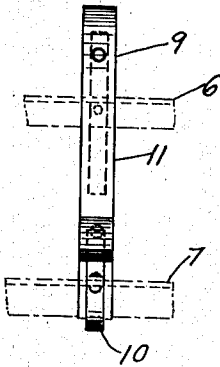


Fig. 4.

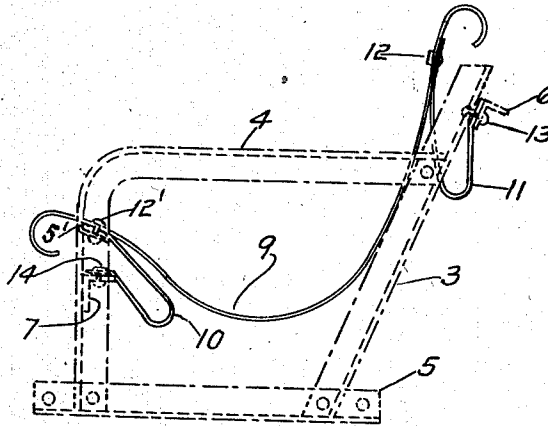


Fig. 3.

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FORM FITTING METAL SPRING SEAT

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9 Claims. (Cl. 155—53)

This invention relates to certain new and useful improvements in porch furniture, such as gliders, chairs and the like, and is characterized by the provisions of a novel seat assembly and a distinctive arrangement of U-shaped springs to

yieldingly support such assembly. My invention contemplates a spring assembly of parallel flexible metallic straps, bent to conform to the shape of the seated human body, and preferably terminating in reversely rolled ends so as to afford comfortable extensions to be engaged by the head and legs of the user.

A further distinctive feature of my invention is the utilization of U-shaped springs mounted on a swinging frame carrying the seat assembly and disposed with their free ends extending in opposite directions to engage the ends of the straps, comprising the seat assembly, so as to provide a strong and yet readily adjustable spring support for the flexible seat.

My invention is further characterized by the connecting of the component strap elements of the seat assembly by longitudinal strips which allow relative flexibility lengthwise of a glider seat, so that it will better adjust itself to several occupants.

My invention further comprises the novel details of arrangement and the assembly of parts which in their preferred embodiment only are illustrated in the accompanying drawing, and the distinctive features of which are pointed out in the appended claims.

According to the drawing—

Fig. 1 is a front elevation of my invention as embodied in a glider.

Fig. 2 is an end elevation of Fig. 1.

Fig. 3 is a view showing the swing frame in dotted outline with the seat assembly and its spring supports shown in enlarged end elevation.

Fig. 4 is a fragmental view in front elevation of one of the spring seat straps of the seat assembly, as shown in Fig. 3.

Similar reference numerals refer to similar parts throughout the drawing.

In the preferred embodiment of my invention illustrated, I show a glider but it will be understood that by reducing the length of its frame it will be adapted for use as a swinging porch chair.

The rigid supporting frame comprises a base frame 1 comprising longitudinal and transverse angle irons suitably connected and the latter carrying foot rests 15. Attached, and suitably braced to, the end angles are the upright end supports 2

the base frame both against lateral and front to rear stresses and are rigidly connected overhead at each side by an angle having overhung ends which support the hanger links 8. These links 8 are connected by suitable eyes to the front and rear ends of angles 5 forming the swinging supports for the seat member. To each of the supports 5, as will be seen more clearly in Fig. 3, I rigidly attach and brace a rearwardly inclined back support 3, which in turn is connected to an arm rest member 4 having a forward downturned end that is bolted or otherwise rigidly connected and braced to the front end of its respective support 5. This forms a rigid end frame for the swing and these end frames are rigidly connected by the members 6 and 7. These cross members are preferably angles, the bar 6 being attached to the back of the supports 3 near their upper ends and the bar 7 being attached and braced to the downturned ends of the arm rest members 4 at a point approximately midway of their height. These elements 3, 4, 5, 6 and 7 form a rigid frame in which are mounted the seat assembly and its spring supports which will now be described.

The seat assembly, as illustrated, is made up of a series of parallel, spaced metallic members or straps 9, which are preferably flat spring straps shaped in their intermediate portion to conform to the outline of the human body in seated posture and having their opposite ends bent reversely outwardly and then inwardly to provide rounded upper and lower ends. These several straps are formed into a seat assembly by being connected to parallel strips of metal 5' and 6' secured to their under and rear faces opposite the main positions of support for the legs and back of the occupant of the glider or chair. The spring strip 5' is attached under the leg supporting end of the straps 9 and the strip 6' is attached near the curved top ends of the back supporting ends of the straps 9.

Flat stout springs, bent to U-shape, are utilized to support the spring assembly from its rigid swing frame. In the preferred arrangement any desired number of these U-springs 10 have their under ends rigidly attached to the lower front cross brace 7 of the swing frame and their upper end extending upwardly and forwardly and riveted to the spring assembly preferably through the strip 5'. Somewhat similar spring supports 11 are employed at the back, their rear ends being attached to the back frame member 6 while their free ends are upwardly directed towards, and attached to the upper portion of the seat assembly, preferably by being connected by rivets

12 to the upper back strip 6'. It will be noted that the strip 5' is disposed, in its preferred position, above and in line with the swing frame member 7 so that under extra heavy load it is free to come to rest thereon after applying full compression to the springs 10. In doing so, however, the lower curved ends of the straps 9 are held free to swing down clear of the member 7 and so they always afford a rounded, comfortable support for the legs. The disposition of the U-springs 10 and 11, and their arrangement with reference to the seat and back loads that will be imposed on them, enables them to provide a yielding and very comfortable support for the legs and back while at the same time, by reason of the reverse disposition of their ends that engage the seat assembly I set them most efficiently to oppose the load imposed in the center of the assembly and obtain for the spring seat a very stout and yet yieldable support or suspension.

In effect the seat assembly floats on these spring members 10 and 11 which will yield in practically any direction that will enable the seat assembly to most comfortably accommodate itself to different body positions of the occupant of the glider or chair.

It is further important to note that as the seat swings the thrust of the body on the seat assembly is correspondingly shifted forwardly and rearwardly, and that these springs 10 and 11 provide all necessary play for the spring assembly to enable it to accommodate itself to the changes in body posture and at the same time to form a stout and effective yet yieldable spring support for the occupant's weight.

While I have described my invention more particularly for porch glider furniture customarily made of metal, it will be obvious that the novel features of construction are applicable to other types of seats, chairs and swings, and that a variety of materials may be selected for their production.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

I claim:

1. In a seat, in combination, an assembly of flat springs shaped to conform approximately to the human body in sitting position, a back support from which the rear end of said assembly is suspended, and a front support for said assembly comprising a horizontal member, a series of U-shaped springs having their under legs attached to said member and their upper legs forwardly disposed in the direction of, and made fast to, the forward portion of said spring assembly to provide a spring suspension therefor.

2. A seat according to claim 1, in which the spring assembly overhangs forwardly beyond said horizontal front member and said U-shaped springs are attached to said assembly substantially above said member.

3. A seat according to claim 1, in which the flat springs are reversely curved at their forward ends

to provide downwardly curved leg supports which overhang forwardly beyond said horizontal front member and beyond the transverse line of attachment to said U-springs.

4. A seat comprising upright end frames having a rigid front seat brace and a rigid upper back brace cross connecting them in assembled relation, a transverse series of seat forming flat spring straps each shaped to provide a concave body reversely curved at its seat end to form a leg support, transverse members connecting said straps together along their seat and back portions to form an assembly, U-shaped springs each having its under leg rigidly connected to said seat brace and its upper leg inclined upwardly and forwardly towards and connected to the leg supporting end of said strap assembly to mount the latter in forwardly overhung relationship above and beyond said seat brace, and spring means to support the back portion of said seat assembly from said back brace.

5. A seat according to claim 4, in which the back supporting spring means are U-shaped springs with the rear leg of each mounted fast on the back brace and the forward leg of each upwardly inclined towards and connected to back supporting end of said strap assembly.

6. A seat according to claim 4, in which the U-shaped springs are disposed in line with and below seat straps and with their upper legs disposed and adapted to engage and brace the overlapping strap.

7. A seat comprising end frames and rigid seat and back braces connecting them in assembled relation, parallel flexible seat straps each comprising a concave body reversely curved at its ends to form leg and head supports, transverse bars connecting said straps together along their seat and back portions to form an assembly, and means to support said strap assembly from said braces comprising U-shaped springs having one leg rigidly mounted on their respective brace in position to present its free leg inclined toward the adjacent end of said assembly, and means to connect said free legs to said assembly.

8. A seat comprising end frame members, and a lower front, and a higher rear, cross brace to connect said members, a plurality of parallel, flexible seat straps with bodies bent in concave form and with ends bent reversely to form curved leg and head supports, transverse members respectively connecting said straps along their seat and back portions and two sets of U-shaped springs, means to mount the springs of one set by connecting their under legs rigidly to the forward cross brace and their upper legs to the strap assembly in position to form a forwardly directed spring support for its seat portion, and means to connect the springs of the other set to the rear cross brace and to the strap assembly to form an upwardly directed spring support for its back section.

9. A seat according to claim 8, in which the transverse members are flexible and the front set of U-springs is less in number than the straps and is connected to the strap assembly through the front flexible transverse members.

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