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SAFETY CHAIR FOR AIRPLANES

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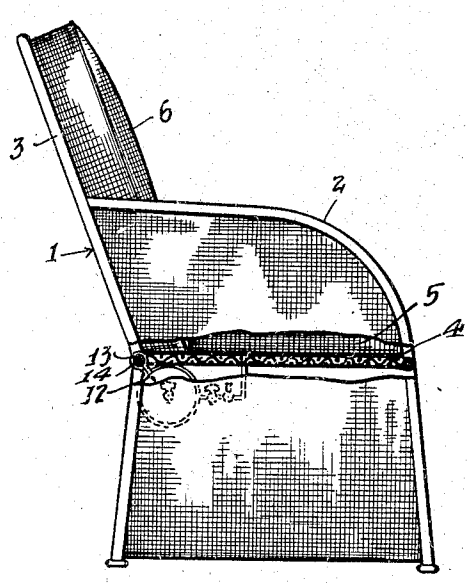


Fig. 1

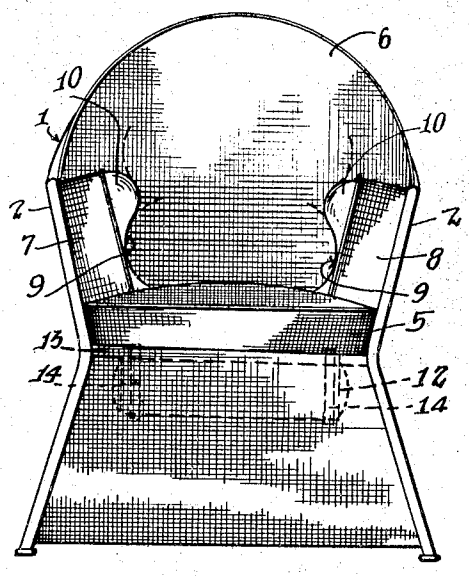


Fig. 2

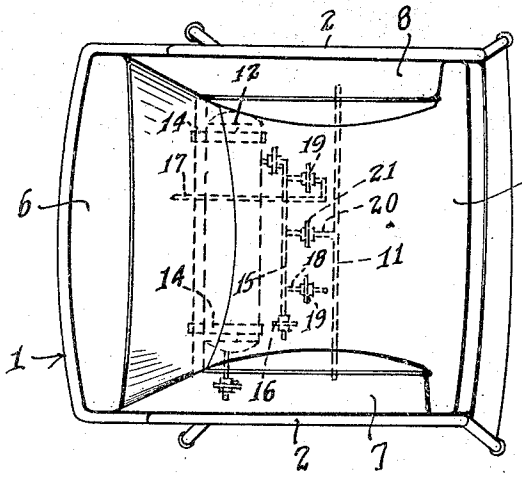


Fig. 3

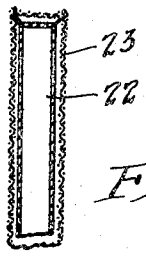


Fig. 4

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SAFETY CHAIR FOR AIRPLANES

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4 Claims. (Cl. 155—2)

This invention relates to a safety chair for airplanes. While traveling on an airplane, passengers sometimes experience difficulty in maintaining themselves comfortably in their seats due to irregular movements of the airplane. Such seats are usually provided with cushions, but are not so constructed as to enable the cushions to maintain the passenger comfortably in the chair so as to prevent his moving about in the chair when sudden, irregular movements of the airplane occur.

The general object of this invention is to provide a seat or chair for an airplane, which is so constructed that a yielding cushion is provided at each side of the thighs of the passenger in the seat or chair, and located at each side; also to construct the cushions in such a way that they will yieldingly engage the thighs of the person in the chair, and in such a way as to assist in retaining him on the seat of the chair, as well as tending to prevent lateral movements of the passenger in the chair.

A further object of the invention is to provide a chair with pneumatic side cushions capable of being inflated, and operating to engage against the thighs and partially over the upper sides of the thighs of a person seated in the chair; also to provide means for increasing the yielding resiliency of the side cushions when the passenger in the chair attempts to move laterally in either direction against one of the cushions.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combination of parts to be described hereinafter, all of which contribute to produce an efficient safety chair for airplanes.

A preferred embodiment of the invention is described in the following specification, while the broad scope of the invention is pointed out in the appended claims.

In the drawing:

Figure 1 is a side elevation in partial section through a chair embodying our invention.

Fig. 2 is a front elevation of the chair illustrated in Fig. 1, and illustrating the outline of the side cushions when they are engaging the sides of the thighs, and partially projecting over the same to maintain the passenger comfortably and yieldingly in the chair.

Fig. 3 is a plan of the chair illustrated in Figs. 1 and 2, and illustrating in dotted lines an arrangement of piping for supplying the cushions of the chair with air under pressure, to maintain them in their inflated condition.

Fig. 4 is a vertical section through the upper portion of one of the side cushions in a collapsed condition.

While our improvement may be embodied in the construction of any seat or bench, in the present specification the invention is illustrated as applied to a chair having a frame 1 of any suitable form, and this frame preferably includes side arms 2 and a back 3 extending upwardly in a rearwardly inclined direction. The frame 1 preferably supports a seat 4 of heavy fabric or similar material on which the seat cushion 5 is placed, said seat cushion being preferably in the form of a pneumatic cushion. The back 3 of the chair is also preferably provided with a pneumatic cushion 6.

Supported in the frame and preferably under the side arms 2, we provide two pneumatic side cushions 7 and 8. These side cushions are of considerable size, and when a passenger is sitting on the seat, they are inflated with air to such an extent as will enable the inner faces 9 of the cushions to engage the sides of the thighs of the person on the seat, and the cushions have considerably more depth in a general vertical direction than the thighs, so that the upper portion of the inflated cushion at each side develops a bulge 10 that projects more or less over the upper side of the adjacent thigh. The seat cushion 5 and the back 6 are preferably inflated with air, and maintained at a constant condition of inflation. But the cushions 7 and 8 are supplied with air whenever necessary, to insure that they will engage firmly with the sides of the thighs and bulge over them in the manner illustrated in Fig. 2. By reason of the fact that these side cushions 7 and 8 are preferably capable of this very considerable expansion, they are capable of engaging the thighs of persons of different sizes, and the degree of inflation in practice would be adapted to the size of the person seated in the chair. In other words, the pressure of the cushions against the thighs and over the thighs, would be such as would maintain the passenger held comfortably but yieldingly on the seat. At the same time, it would be evident that if a sudden turn of the airplane tends to cause a shifting of a passenger toward either of the cushions, this cushion can yield so as to resist the momentum of the passenger in that direction without giving him any discomfort.

In order to increase the yielding nature of the pressure of the side cushions 7 and 8, we prefer to have these two side cushions 7 and 8

connected together by a tube or hose 11 indicated in dotted lines in Fig. 3. This hose or tube 11 is always open so that if the pressure against one of the cushions is unusually great, the air can flow from this cushion over to the opposite cushion. The small diameter of this tube would, of course, influence the action of the cushions in this respect. If a stiffer and yet less yielding action of the cushions is desired, the diameter of this tube 11 would, of course, be made smaller, and vice versa.

All of the cushions of the chair may be inflated if desired, with a small hand pump, but in practice we prefer to provide the chair with a small reservoir 12 carrying compressed air under low pressure, and this reservoir may be hung if desired, from the rear seat bar 13 of the chair on suitable hangers 14, indicated in dotted lines in Fig. 2. The reservoir may be charged from time to time with compressed air through an inlet hose 15, and this hose is provided with a valve 16 for confining the air in the reservoir. This hose or inlet pipe 15 may also be provided with pipe connections 17 and 18, respectively, carrying valves 19 for controlling admission of air to the back cushions 6 and to the seat cushion 5.

There is also a pipe connection 20 which may lead from the inlet pipe 15 to the cross pipe 11 that connects the side cushions, and this connection 20 should carry a valve 21 for regulating the admission of air to the side cushions.

The seat cushion 5 and the back cushion 6 may consist of rubber bags inflatable in covers of any suitable cloth, which will limit their expansion and give shape to the inflated bag within the same.

The side cushions as illustrated in Fig. 5, preferably comprise an inner bag 22 of rubber or similar material, which will retain the air, and this bag is mounted in an expansible cover 23 which is preferably formed of any suitable cloth, which is capable of stretching considerably, and which will not unduly limit the expansion of the side cushions 7 and 8 in performing their functions properly, as illustrated in Fig. 2.

It is understood that the embodiment of the invention described herein is only one of the many embodiments this invention may take, and we do not wish to be limited in the practice of the invention, nor in the claims, to the particular embodiment set forth.

What we claim is:

1. In a chair of the kind described, the combination of a frame, a seat supported thereby, a pneumatic cushion located at each side of the seat and operating to engage the thighs of a person sitting in the seat, said cushions having means for inflating the same at will to different extent, said cushions operating to maintain themselves in contact with the person's thighs, and cooperating to hold the occupant of the chair yieldingly in position in the seat.

2. In a chair of the kind described, the combination of a frame, a seat supported thereby, a pneumatic cushion located at each side of the seat and operating to engage the thighs of a person sitting in the seat, said cushions being of greater depth in a general vertical direction than the thighs, and having means for inflating the same at will, said cushions operating so that the upper portions of the cushions project over the upper sides of the thighs, of a person seated in the chair.

3. In a chair of the kind described, the combination of a frame, a seat supported thereby, a pneumatic cushion located at each side of the seat and operating to engage the thighs of a person sitting in the seat, said cushion being of greater depth in a general vertical direction than the thighs, and having means for inflating the same at will, to cause the upper portions of the cushion to project over the upper portions of the thighs, and means for maintaining communication between the said cushions so that if the seated person shifts laterally in the chair, air may flow freely to and fro between the said cushions.

4. In a chair of the kind described, the combination of a frame, a pneumatic seat supported on the frame, a pneumatic cushion located at each side of the seat and operating to engage and press the thighs of a person sitting in the seat by reason of the pneumatic pressure within the cushion, a tube connecting the said cushions and maintained in an open condition between the cushions so that air can flow to and fro between the same, said tube having means for admitting air thereto.

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