Dec. 20, 1960 B. W. AISENSTEIN 2,965,154

SEATS

Filed July 28, 1958

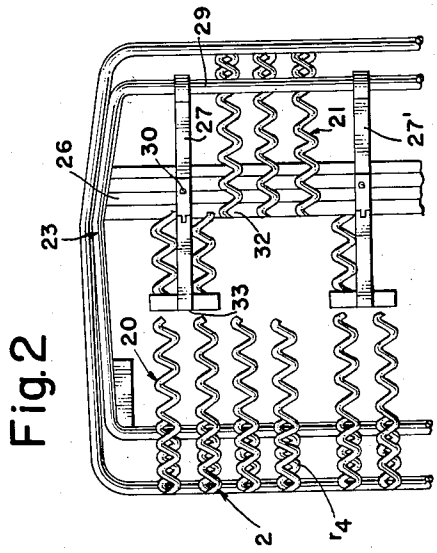


Fig. 2

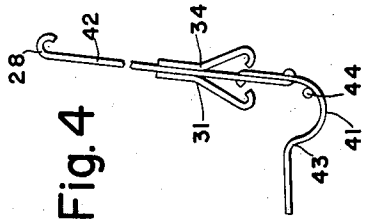


Fig. 4

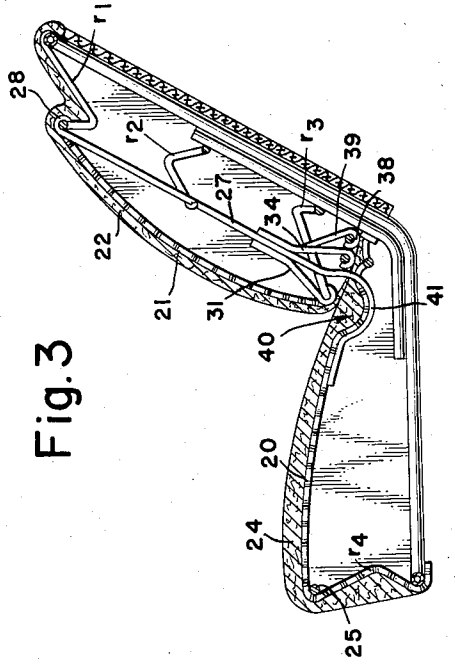


Fig. 3

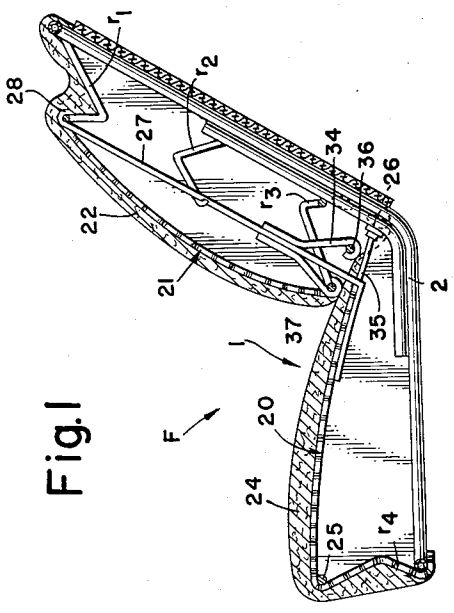


Fig. 1

INVENTOR

Benjamin Wolf Aisenstein

United States Patent Office 2,965,154
Patented Dec. 20, 1960

2,965,154

SEATS

Benjamin Wolf Aisenstein, 24 Blvd. Barbes, Paris, France

Filed July 28, 1958, Ser. No. 751,555
Claims priority, application France July 31, 1957
6 Claims. (Cl. 155—53)

This invention relates to improvements in the construction of chairs having a back portion and a seat portion, such as arm chairs and the like, and has particular reference to spring cushioned chairs of this type.

It is an object of this invention to provide an improved chair having a back portion and a seat portion each covered by means of a fibrous or plastic material wherein the members which support the cover over the seat portion move up and down together with the members which support the cover over the back portion. In this manner, an occupant may be comfortably seated in the chair.

Another object of this invention is to provide a chair having springs secured to a frame wherein the springs in the seat portion of the chair and the springs in the back portion of the chair are attached to each other, so that the seat springs, when depressed or allowed to expand, cause corresponding upward and downward movement of the back springs and consequently of the back covering or lining.

A further object of this invention is to form the support of the coverings of the back portions of the invention in such a manner that they may be jointly moved while providing support for the weight of an occupant.

In accordance with the invention, the chair comprises a main frame including a substantially horizontal bottom seat portion and a back portion, first spring means forming a resilient sheet and located along the top of the seat portion of the frame, second spring means forming a resilient sheet and located forward of the back portion of the frame, means for securing each of the spring means to the frame, a plurality of spaced movable elements each having a substantially vertical arm connected to the second spring means at the rear thereof and a substantially horizontal arm located at the underside of said first spring means, outer covering means secured to said springs and hook means connected to the vertical arm of the movable elements for securing the coverings to the seat and back. The spring sheets are conveniently secured to the frame on the forward end of the seat portion and on the top of the back portion.

In this manner, the spring sheets in the seat portion of the chair and the spring sheets in the back portion of the chair are attached to the common movable elements and cause corresponding upward and downward movements of the back springs and consequently of the back covering or lining.

This method of construction provides a chair of which the seat and back portions are characterized by great flexibility, the covering means on each portion however effecting combined upward and downward movements.

According to another more specific feature of the present invention, hooking members are provided on the movable elements to permit separate securing of the back covering. More particularly, these hooking members are provided at the lower portions of the vertical arms of the movable elements and behind the latter for securing the lower edge of the back covering, whereby this covering will accurately follow the movements of the movable elements.

Other features and advantages of this invention will appear as the following description proceeds with references to the accompanying drawings forming part of this specification and illustrating diagrammatically by way of example a typical form of embodiment of the invention and modification thereof.

In the drawings:

Fig. 1 is a diagrammatic cross section showing a seat arrangement according to the teachings of this invention;

Fig. 2 is a plan view from above as obtained from looking in the direction of the arrow F of Fig. 1;

Fig. 3 is another diagrammatic cross section showing a modified seat constructed according to the teachings of this invention; and

Fig. 4 is a diagrammatic side view showing a detail of a movable armature element according to a further modification.

In the example illustrated in Figs. 1 and 2 of the drawings, a chair 1 is comprised of a fixed tubular frame 2 which supports, by means of a plurality of elbow springs r_1, r_2, r_3, a plurality of first flexible sheet springs 21 mounted in a flexible frame 23. The frame 23 constitutes the underlying surface or support for the covering 22 or lining of the back of the chair. The underlying surface or support of a seat portion covering 24 is also made of a flexible sheet of springs 20 secured to a resilient spring support member 25 connected to the front of the tubular frame 2 by means of an elbow spring r_4 and at the rear of the seat to a stationary cross member 26 of the tubular frame 2.

The two sheets of spring 20, 21 are interconnected by a plurality of movable L-shaped elements comprising, for example, bent sections 27, 27' spaced from one another. Only two of the bent sections are shown, although it should be understood that in a complete chair others are used. Each of these sections is provided with a hook shaped upper end 28 engaging the upper element 29 of the flexible frame 23. This hook shaped portion carries by means of a securing lug 30 a hook shaped end portion 31 engaged by the lower transverse element 32 of the frame 23.

The lower arms of the sections 27, 27' etc. extend beneath one portion of the sheet springs 20 of the seat and are secured to the springs by means of a cross member 33 as shown. The sections 27, 27' carry by means of securing lugs 34 a hook 35 engaged by a rod 36 for fastening the rear portion of the seat covering 24.

The lower edge of the back covering 22 may be fastened either on the bottom covering 24 as illustrated at 37 in Fig. 1 or on another rod 38 disposed transversely and carried by another set of hooked lugs 39 which are secured in turn on the movable elements 27, 27' as illustrated in the modified embodiment of Fig. 3.

From the foregoing it is clear that with this specific arrangement the members supporting the seat covering of the chair are flexible and carried along by the movable elements 27, 27', each portion of the seat being adapted when depressed by the weight of an occupant to carry along in its movement a corresponding portion of the back. Due to their special securing means the coverings 22 and 24 follow these movements closely.

In the modified forms of the embodiment illustrated in Figs. 3 and 4 the movable elements 27, 27' form curved recesses 41 at the junction of their upper and lower arms. The bottom covering is provided with a corresponding curved recess 40 as shown in Fig. 3. A correspondingly shaped cavity being also formed in the flexible sheet of spring 20. This arrangement permits downward movement of the flexible sheet of springs 21

of the back without allowing the lower edge of the frame to abut against the seat covering.

In the modified form of the embodiment shown diagrammatically in Fig. 4, the movable elements 27, 27' are comprised of two portions 42 and 43 interconnected, preferably above the curved recess 41, by hooking means of any suitable type, so that the two arms 42 and 43 may be easily separated from each other to facilitate the lining or stripping of the chair. In this modified embodiment, the covering or lining 24 of the seat is secured along its rear edge on a rod member 44 or the like fastened transversely to the rear portion of the lower arms 43 of section 27, 27'.

Of course, many different shapes of the movable elements incorporated in the seat portion and back portion of the chair, as well as hooking or fastening means other than those illustrated for the seat portion and back portion coverings will become obvious to those skilled in the art without departing from the spirit and scope of this invention.

It will be readily understood by anyone conversive with the art that this invention should not be construed as being limited to the few embodiments described and illustrated herein by way of example only.

What I claim is:

1. A seat comprising a main frame including a substantially horizontal bottom portion and a back portion, first spring means forming a resilient sheet and located along the bottom portion of the frame, second spring means forming a resilient sheet and located forward of the back portion of said frame, means for securing each of said spring means to said frame; a plurality of spaced elements, independently movable with respect to said frame, each having a substantially vertical arm connected to said second spring means at the rear thereof and a substantially horizontal arm located at the underside of said first spring means; outer coverings secured to said spring means, and lug means connected to the vertical arm of said elements for securing said coverings.

2. A seat according to claim 1, wherein said second spring means comprises a deformable frame secured at its top portion to the vertical arms of said movable elements and rod means connected to said vertical arms at the lower part thereof and securing the lower portion of said deformable frame.

3. A seat according to claim 2 further comprising third spring means on the front part of the bottom portion of said frame for securing one end of said first sheet of springs and a transverse element on said main frame corresponding to the lower part of said back portion for securing the other end of said sheet.

4. A seat according to claim 1, wherein second lug means are secured to said movable elements for securing the covering of the bottom.

5. A seat according to claim 1, wherein said arms of said movable elements are connected together by means of a curved portion forming a recess.

6. A seat according to claim 5, wherein said arms are independent and removably interconnected above said curved recess.

References Cited in the file of this patent

UNITED STATES PATENTS

1,406,059	Montgomery	Feb. 7, 1922
1,522,621	Gibbs	Jan. 13, 1925
2,165,306	Shanahan	July 11, 1939
2,286,168	Flint et al.	June 9, 1942
2,303,036	Flint	Nov. 24, 1942
2,371,407	Neely	Mar. 13, 1945