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J. F. PILE

3,008,764

CHAIR

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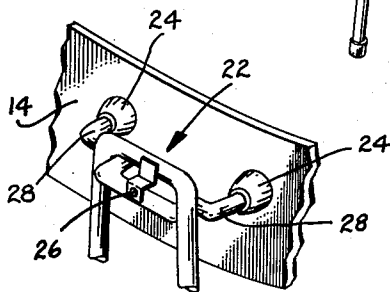
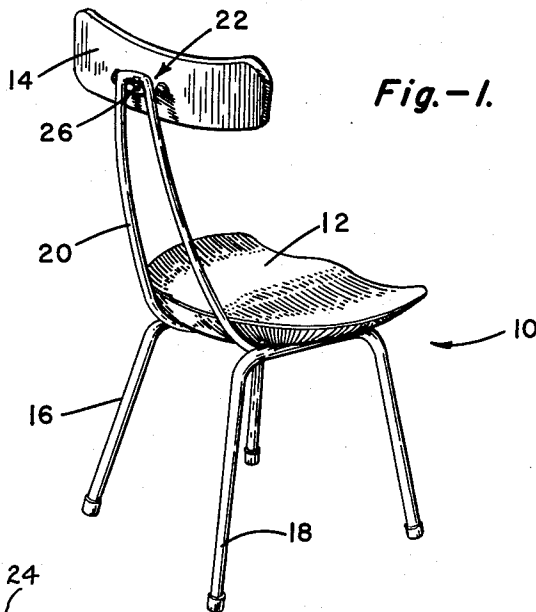


Fig.-2.

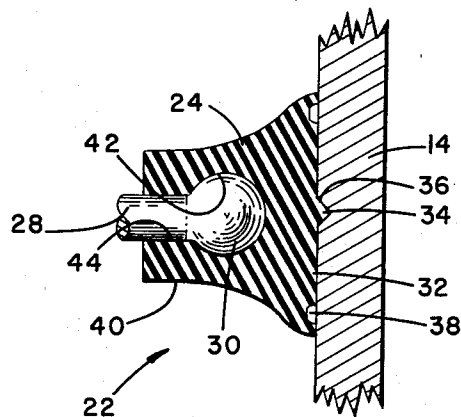
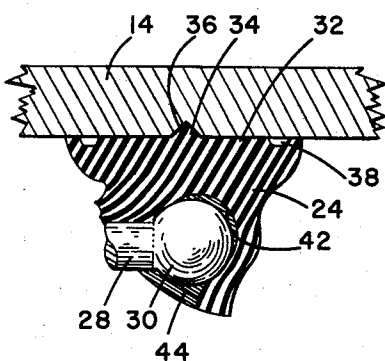


Fig.-3.



INVENTOR.
JOHN F. PILE

BY *Price and Heneveld*
ATTORNEYS

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John F. Pile, Brooklyn, N.Y., assignor to Herman Miller, Inc., a corporation of Michigan
Continuation of application Ser. No. 746,795, July 7, 1958. This application Mar. 7, 1960, Ser. No. 13,348
3 Claims. (Cl. 297—306)

This invention relates to furniture in general, and more particularly to a chair having a separable shock mount for securing the back rest member to the support structure of the chair.

This is a continuation of my co-pending application Serial No. 746,795, filed July 7, 1958, entitled Separable Shock Mount, and now abandoned.

Advanced furniture designs usually stress the esthetic beauty of functional forms. Thus the design of a simple chair emphasizes the seat and back rest member while the legs and back rest support are made less obvious. In doing this the legs and back rest support must still be of sturdy construction and must be securely fastened to other parts of the chair.

The back rest for a chair usually includes some resilience to more comfortably support a person's back. Some chairs may have the back rest padded for such purpose. Other chairs may have the back rest formed to complement the contours of a person's back and have the back rest or its support include some resilience.

In providing resilience for a back rest member or its support, great care must be exercised in providing a structure which is reasonably soft but will not give way under an unusually strong effort. The normal effort of leaning against a back rest, in sitting in a chair, including when the chair is leaned backwards, is naturally given attention. However, the strength of the back rest and its support are also required to resist the effort of one sitting in the chair backwards and leaning heavily on the back rest member, or someone pulling on the back rest while someone else is seated in the chair. These are unusual examples but nevertheless not unforeseeable tests to which a chair may be subjected.

It is an object of this invention to disclose a chair having a means of mounting a back rest member to a support therefor in a manner providing secure engagement of the one to the other and which will also yield under undue stress to disengage the parts without damage or injury thereto.

It is an object of this invention to disclose a separable mount for engaging a back rest or other member of a chair to a support therefor and which are readily re-engaged together after they have been separated.

The separable mount of this invention is intended to provide secure engagement of the parts with which it is used, and to withstand normal shocks received thereby. The separable shock mount is intended to give way only under extreme conditions which might otherwise result in irreparable damage to the chair.

A further object of this invention is to disclose a shock resistant mount which is relatively inexpensive to manufacture and to incorporate into the construction of a chair or the like. The mount proposed includes resilient blocks capable of being bonded to one member and formed to receive other members into engagement therewith. The resilient members are formed to include a ball socket therein and are receptive of a ball headed member. The socket is disengaged from the ball headed member only by a force twisting the member to which the socket is engaged through an angle just less than that which would cause irreparable damage if the separable mount were not provided.

This invention enables the back rest member of a chair to be separated from the support to which the back

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rest is engaged before any serious damage is done to either. When the back rest member is twisted through greater than 90° the separable shock mount releases and disengages the back rest from its support. The mount is such as will not give way except under the condition recited. Accordingly, the back rest is in all other respects securely engaged to its support.

These and other objects and advantages in the practice of this invention will be more apparent in the illustration and description of a working embodiment of the invention, as hereinafter set forth.

In the drawings:

FIG. 1 is a perspective view of a chair including the separable shock mount of this invention to engage the back rest member to the support therefor.

FIG. 2 is an enlarged cross sectional view of the shock mount of this invention as normally disposed.

FIG. 3 is an enlarged cross sectional view of the shock mount of this invention as distorted in the relative twisting of the members to which it is engaged, and about to release such members from each other.

FIG. 4 is a detailed perspective view of the fixed portion of the shock mount of this invention.

The chair 10, shown in FIG. 1, includes a seat 12 and back rest member 14. Chair legs 16 and 18 support the seat member. A back rest brace or support 20 extends from under the seat to support the back rest 14. The back rest 14 is secured to the back rest support 20 by means of the separable shock mount 22 of this invention.

The separable shock mount 22 includes a pair of resilient members 24 secured to the back of the back rest member 14. A connector 26 is rigidly secured to the support 20 in any desired manner, such as by welding, bolting or riveting. A pair of short stub posts 28 project generally horizontally toward the back rest 14 from the connector 26, with which they are integrally formed. Thus, the stub posts 28 are rigidly held in a horizontal position regardless of any movement of back rest 14. The stub posts 28 have ball heads 30 formed on the ends thereof. The back rest 14 is secured to the support 20 by the cooperative engagement of the posts of the connector 26 with the resilient members 24.

The resilient members 24 are each formed to a frusto-conical shape and are made of a resilient material. The physical characteristics of the resilient material are such as suits the needs hereinafter set forth.

The base 32 of the resilient members 24 is formed to include a projection 34. The projection 34 is used to locate the mount on the back of the back rest 14. An indentation 36 is formed in the back rest member to receive the projection 34 and locate the members 24 thereon. An annular groove 38 is formed in the base of the resilient members to receive and retain the bonding agent used to secure the members 24 to the back rest 14.

The frusto-conical members 24 are formed to include a neck portion 40 at their smaller end. A ball socket 42 is formed within the resilient members 24 and a passage 44 is formed through the neck portion 40 and in communication with the socket. When the ball head 30 of a stub post 28 is received within the socket 42 the neck portion 40 forms a retaining sleeve about the post part of the connector.

The back rest 14 is readily engaged to the back rest support 20 by forcing the ball headed posts 28 of connector 26 into engagement with the resilient members 24. The ball ends 30 are snapped into the sockets 42 and the walls of passage 44 close tightly about the connector posts 28. The resilient members 24 form a shock resistant mount due to the isolation of the back rest from the support and the spacing of the ball receiving socket 42 from the base of the mount.

The resilient nature of members 24 enables the back

rest 14 a reasonable degree of freedom to position itself to conform to the angular disposition of a person's back as one sits in the chair 10. Accordingly, whether one sits straight, or leans back in the chair 10, the back rest will assume a position to comfortably support one's back.

The resilient members 24 are separable from the connector 26 by pulling the back rest 14 from the support 20 with a force sufficient to pop the ball heads 30 from the sockets 42. Normally the two spaced members 24 will provide sufficient resistance to a force of this kind to prevent the back rest from being separated from both members at the same time. However, a side twisting of the back rest 14 around the support 20 will cause one of the members to pop one of the connector posts.

Provision is also made for the separation of the back rest from the support 20 should an excessive force be applied to the back rest 14 in forcing it over the support. This separation of the back rest from the support is intended to occur just prior to the increase of such a force to where it might otherwise cause serious damage to the chair. For example, a twisting force applied to the back rest 14, forcing it over the support 20, will pop the resilient members 24 from the connector 26 after the back rest is forced just beyond a 90° position. This is best shown in FIG. 3.

When the back rest 14 is forced into the position shown by FIG. 3, the post 28 stretches the passage 44 and bunches the body of the resilient member to one side thereof. This forms a fulcrum and provides sufficient leverage for the post to pop the ball head 30 from the socket 42.

The back rest 14 is easily re-engaged to the support 20 by forcing the ball headed posts 28 into the sockets 42. Quite naturally this separation and reassociation of parts is not an overly frequent occurrence. However, the back rest may be resecured to the support 20 as often as it becomes forcibly separated therefrom.

While a preferred embodiment of this invention has been described, it will be understood that other modifications and improvements may be made thereto. Such of these modifications and improvements as incorporate the principles of this invention are to be considered as in-

cluded in the hereinafter appended claims unless these claims by their language expressly state otherwise.

I claim:

1. A chair comprising a seat, a supporting structure fixed with respect to said seat, a back tiltably mounted with respect to said supporting structure, and means connecting said back to said supporting structure, said means providing for ready release and reconnection, said means resiliently biasing said back into a predetermined position, and said means being arranged to release said back from said structure when said back is tilted to a position substantially normal to said predetermined position.

2. A chair comprising a seat, a supporting structure fixed with respect to said seat, a back tiltably mounted with respect to said supporting structure, and means including a rigid ball held in a resilient socket releasably connecting said back to said supporting structure, said means resiliently biasing said back into a predetermined position, and said means being arranged to release said back from said structure when said back is tilted to a position substantially normal to said predetermined position.

3. A chair comprising a seat, a supporting structure fixed with respect to said seat, a back tiltably mounted with respect to said supporting structure, and means including a rigid ball held in a resilient socket releasably connecting said back to said supporting structure, said ball having a shank attached thereto, said shank being snugly embraced by a portion of said resilient socket so as to bias said back into a predetermined position, and said means being arranged to release said back from said structure when said back is tilted to a position substantially normal to said predetermined position.

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