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BACKREST CONSTRUCTION FOR CHAIRS AND THE LIKE

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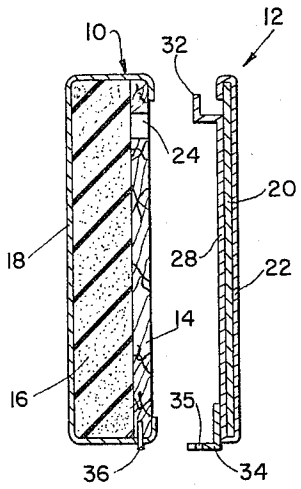


FIG. 1

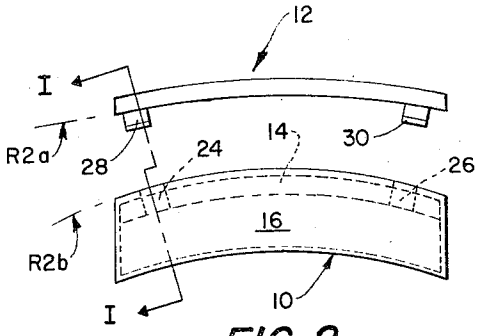


FIG. 2

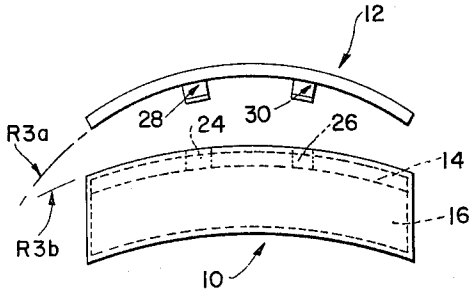


FIG. 3

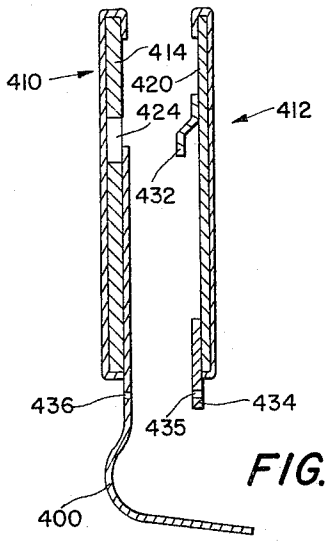


FIG. 4

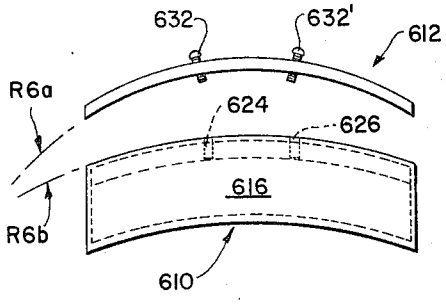


FIG. 6

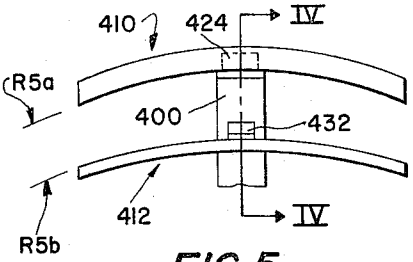


FIG. 5

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BACKREST CONSTRUCTION FOR CHAIRS AND THE LIKE

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This invention relates to chairs and to the backrest portion thereof, and more particularly to a new form of backrest construction having a number of new and desirable features and attributes.

As is well known, most of the many different types of upholstered chairs have a backrest portion. These are usually padded on the inner side, against which the back of a person sitting in the chair is rested, and they are closed on the opposite or rear side by an outer panel which conceals the ends of the upholstering material and gives a finished appearance to the chair. Almost as long as chairs have been made, the outside panel has been secured to the padded backrest by a continuous peripheral row of upholsterer's tacks, nails, or screws, whose heads are plainly visible from the outside. This situation has provided a source of irritation for a long time, since the protruding tack or screw heads are incongruous in most design approaches, and they may actually be unsightly in many specific designs. Further, securing the outer panel to the backrest in this manner is time consuming and tedious, since the panel and backrest must be carefully aligned and held in an aligned position while each tack or screw is secured, and this has contributed to unnecessarily large labor costs incurred in chair assembly. However, even with all its inherent limitations, the foregoing method of chair construction is still in extensive use, since no better construction has yet been provided.

Accordingly, it is a major object of the present invention to provide a new construction for securing the outer panel to the backrest portion of a chair which eliminates substantially all visible assembly components and provides a smooth and uninterrupted outward appearance.

A further important object of the invention is to provide a backrest construction for chairs of the foregoing character in which the outer panel is resiliently deformed when it is secured to the backrest portion, so that the spring force of the resiliently deformed panel aids in the retention of the panel upon the backrest.

A further object of the invention is to provide a backrest construction of the nature described which is readily and swiftly assembled without the need for any special tools and without the need for any elaborate or particular care to be exercised in maintaining the alignment of the panel and backrest during assembly.

A still further object of the invention is to provide a backrest construction for chairs of the character noted above, which produces no disfiguration of the outer surface of either the backrest or the outer panel, and which may be quickly and easily disassembled when desired and subsequently reassembled without producing any outward appearance change and without involving any construction problems whatever.

The foregoing major objects of the invention and the advantages provided thereby, together with additional objects and advantages, will become increasingly apparent following a consideration of the ensuing specification and its appended claims, particularly when taken in conjunction with the accompanying drawings setting forth preferred embodiments thereof.

In the drawings:

FIG. 1 is a fragmentary enlarged sectional elevation of a first form of backrest and outer panel, taken through the plane I—I of FIG. 2, showing a first embodiment of the invention;

FIG. 2 is a fragmentary overhead plan view of the backrest and panel seen in FIG. 1;

FIG. 3 is an overhead plan view similar to FIG. 2, showing a slightly modified form of backrest and panel construction;

FIG. 4 is a sectional elevation similar to FIG. 1 but taken through the vertical plane IV—IV of FIG. 5, showing a different form of backrest and panel and a different embodiment of the invention used in connection therewith;

FIG. 5 is a fragmentary overhead plan view of the structure illustrated in FIG. 4; and

FIG. 6 is a fragmentary overhead plan view similar to FIGS. 2, 3 and 5, but showing an additional embodiment of the invention.

Briefly stated, the present invention provides a backrest construction for chairs and the like, comprising a backrest structure which is connectable to a chair assembly, an outer panel for covering the rear of the said backrest structure, an interengageable structure operatively associated with both the backrest and the panel for providing a two-point interconnection therebetween, with the said interengageable structure having an interlocking position in which the backrest and panel are drawn closely together and a relaxed position in which the backrest and panel are separable, and means for maintaining the interengageable structure in its interlocking position to retain the panel in place against the backrest.

Referring now in more detail to the drawings, a typical backrest structure **10** and outer panel **12** are illustrated in FIG. 1. The backrest structure generally includes a rigid structural member **14** which is typically formed from wood or other suitable material, a cushion **16** of polyfoam or the like which is usually affixed to the member **14**, and an upholstering cover **18** which may be leather, fabric, or the like. The panel **12** has a generally rigid inner structural member **20** which is frequently of sheet metal but which may also be of wood or the like, and an outer covering **22** which normally is of the same upholstering material as the backrest cover **18**.

It is desired to join the backrest structure **10** and panel **12** in a secure manner, and previously this was accomplished by driving tacks or screws completely around the perimeter of the panel into the member **14** of the backrest. However, in accordance with the present invention, recesses **24** and **26** (FIGS. 1 and 2) are formed in and preferably through the structural member **14**, and a pair of brackets **28** and **30** are secured to the inner surface of the panel **12**. Each of the brackets has an offset upper portion such as **32** which extends laterally and upwardly away from the panel **12**, for seating within the recess **24** by extending slightly behind the member **14**, in the opening which is indicated. Further, each of the brackets **28** and **30** have a generally horizontally disposed flange portion **34**, which is located at the bottom of the panel and slightly below its lower extremity.

It is to be pointed out that the backrest structure **10** is often contoured by having a longitudinally curved form (see FIGS. 2, 3 and 6), and that in accordance with the present invention the panel **12** is preferably also curved longitudinally in this event, but with a different radius of curvature than that of the backrest **10**. More specifically, the panel **12** of FIGS. 1 and 2 should have a lesser degree of curvature than the backrest **10** (i.e., radius R2*a* greater than R2*b*, and in this case the recesses **24** and **26** and the brackets **28** and **30** should be rather widely spaced from each other and positioned near the outer ends of the backrest and panel. However, the panel **12** shown in FIG. 3 may be given a greater degree of curvature than the backrest **10** (i.e., radius R3*a* less than R3*b*), and in this case the recesses and brackets should be more narrowly spaced, and placed

toward the center of the curvature, i.e., toward the center of the backrest and panel, as illustrated.

A slightly different form of backrest **410** and panel **412** is illustrated in FIGS. 4 and 5. This construction is often used in the case of typing chairs for secretaries, stenographers, and the like, and is typified by a downwardly depending resilient member **400** by which the assembled brackrest is mounted to the seat and legs of the chair. In this construction, a centrally-located recess **424** is formed in the wooden structural member **414** of the backrest **410**, and the resilient member **400** is extending upwardly slightly to partially cover the recess at its lower extremities. An abbreviated fastening bracket is preferably used in this assembly. This consist of a shorter offset portion **432** secured to the inner panel member **420**, which is similar in nature to the offset portion **32** of the bracket **28** seen in FIGS. 1, 2, and 3. A separate flange portion **434** is used, which extends downwardly from the bottom of the inner member **420** of the panel **412**. As FIG. 5 illustrates, the backrest **410** and panel **412** are also preferably longitudinally curved, with the panel having a lesser degree of curvature than the backrest (i.e., radius R5*a* greater than radius R5*b*), and with the offset bracket **432** and recess **424** being positioned centrally relative to the panel and backrest, respectively.

An additional embodiment of the concept underlying this invention is illustrated in FIG. 6, in which a curved backrest **610** and curved panel **612** are illustrated in the same manner as the structures of FIGS. 2, 3, and 5. In this embodiment, however, the projecting fastening bracket portions such as **32** and **432** seen previously are in the form of threaded bolting members **632** and **632'** which extend through the panel **612**. Further, the recesses **624** and **626** corresponding generally to recesses **24** and **424** seen previously are internally threaded so as to receive and engage the bolting members **632** and **632'**. In the configuration shown in FIG. 6, it will be noted that the bolting members are recesses are relatively narrowly spaced, and that like the embodiment of FIG. 3, the curvature of the panel **612** is greater than that of the backrest **610** (i.e., radius R6*a* is greater than radius R6*b*).

The assembly of the panels and backrest structures which have now been described is likely already apparent, and is extremely swiftly and easily accomplished. In the case of the structures of FIGS. 1, 2 and 3, the panel **12** is resiliently deformed or flexed so that its curvature closely approaches that of the backrest **10** to which it is to be joined. The offset portions **32** of the panel brackets **28** and **30** are slidably inserted into the recesses **24** and **26**, and the panel is then moved upward relative to the backrest. This interengages the vertically extending portion of the offsets **32** within the recesses and behind the wooden structural member **14**, with the offset portions thus acting as hooking members.

Since the panel has been resiliently deformed, the spring force created thereby continuously forces the panel backward away from the backrest, but since the offset portions of the brackets are engaged within the recesses, this spring force actually serves to clamp the periphery of the panel against the backrest, from which it cannot be removed without a deliberate downward sliding movement of the panel relative to the backrest. In the embodiments of the first three figures, such a downward movement may be positively prevented by inserting a small screw or the like through a vertical aperture **35** formed in the horizontal lower flange **34** and into a vertical hole **36** formed in the bottom of the backrest (see FIG. 1). Such a screw will be essentially unobservable, since it is in the bottom of the backrest and completely out of the normal line of vision.

A very similar assembly is utilized in connection with the embodiment shown in FIGS. 4 and 5. Here the panel **412** is flexed slightly to increase its curvature to correspond to that of the backrest **410**, and the offset or hooking member **432** is then inserted into the recess **424** and behind the upper end of the resilient mounting member **400**. The panel **412** is then moved downwardly relative to the backrest **410**, and the same retention is provided as in the case of the previous embodiment. Also, in order to prevent any inadvertent upward movement of the panel **412** which would release it from the backrest **410**, an appropriate screw or the like may be passed through an aperture **435** formed in the downwardly-depending flange **434** and into a threaded passage **436** formed in the resilient member **400**, immediately beneath the backrest **410**, where the screw will be unobservable.

In the case of the embodiment shown in FIG. 6, it will be apparent that all that is required to assemble the panel **612** to the backrest **610** is to push the panel against the backrest at its center, so that the degree of curvature of the panel is reduced somewhat as the panel is resiliently flexed, and so that each of the bolting means **632** and **632'** becomes aligned with its respective threaded recess **624** or **626**. The bolting means are then merely turned to thread them into their respective recesses, and thereby interengage the structures to draw the panel tightly against the backrest structure. When this has been done, the spring force of the resiliently deformed panel will clamp the peripheral edges of the panel against the backrest. It will also tend to prevent the loosening of the bolting members by placing pressure against them, thereby maintaining the panel in place against the backrest.

From the foregoing, it will be clear that the projecting offset portions of the panel brackets and the projecting ends of the bolting means, together with the respective recesses in which these members become engaged, actually provide an interengageable structure which has an interlocking position in which the backrest and the panel are drawn closely together, and a relaxed position in which the backrest and panel are separable. This interengagement is maintained in its interlocked position by the screws which pass through the flange portions **34** or **434**, or else by the threads which are formed upon the bolting members and within the recesses in the case of the embodiment of FIG. 6. Thus, regardless of the particular embodiment which is preferred, the panel will be firmly retained in place against the backrest.

The desirability of the advances which the construction of the present invention makes over the methods and structures previously used will be immediately apparent to those who are skilled in furniture craftsmanship and upholstering. The resulting structure has a thoroughly finished appearance in which the rear panel becomes fully integrated into the design of the backrest construction, with no unsightly series of protruding tack or screw heads around the periphery of the panel. Of even greater importance to the manufacturer, however, is the fact that manufacture is greatly simplified and the ease and rapidity of assembly is increased by a multiple of many times. Further, if disassembly and subsequent reassembly become necessary, no scarring or defacing of either the panel or the backrest occurs, and the panel is as securely mounted to the backrest upon subsequent reassembly as it was when originally assembled.

It is quite possible that following a consideration of the foregoing specification, those skilled in the art will conceive of further embodiments of the concept which underlies the invention and of certain variations and modifications in the embodiments shown and described herein. Accordingly, all such embodiments, variations, and modifications as are clearly based upon the spirit of the invention and include its concepts are to be considered as within the scope of the claims appended hereinbelow, unless these claims by their language specifically state otherwise.

I claim:

1. A backrest construction for chairs and the like, comprising in combination: a longitudinally curved backrest structure connectable to a chair assembly; a longitudinally curved outer panel for covering the rear of said backrest structure; said backrest and panel having different degrees of curvature and at least one of the same being resiliently deformable by flexing, to conform its curvature to that of the other; means defining at least one recess in one of said backrest and panel; at least hooking member operatively secured relative to the other of said backrest and panel; each such hooking member shaped and located so as to be insertable within one such recess to engage therewith; when said backrest and panel are resiliently flexed into conformity with each other; said hooking member holding the resiliently conforming backrest and panel closely together when so engaged with said recess, and said resilient flexing simultaneously holding said hooking member and recess in firm engagement with each other; and means for maintaining said hooking member and recess in engagement, to retain said panel in place against said backrest.

2. The backrest construction of claim 1, wherein said panel has a greater degree of curvature than said backrest structure, and said hooking members and recess are located in the central area of the curvature.

3. The backrest construction of claim 1, wherein said panel has a lesser degree of curvature than said backrest structure and at least two of said hooking members and recesses are provided, each engageable pair thereof being widely spaced from the other and located near the edges of the panel and backrest.

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