Feb. 6, 1951 W. J. WORKMAN 2,540,563

UPHOLSTERED SEAT CONSTRUCTION

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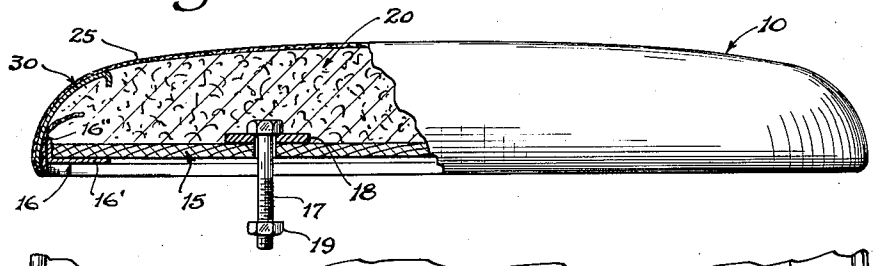
Fig. 1



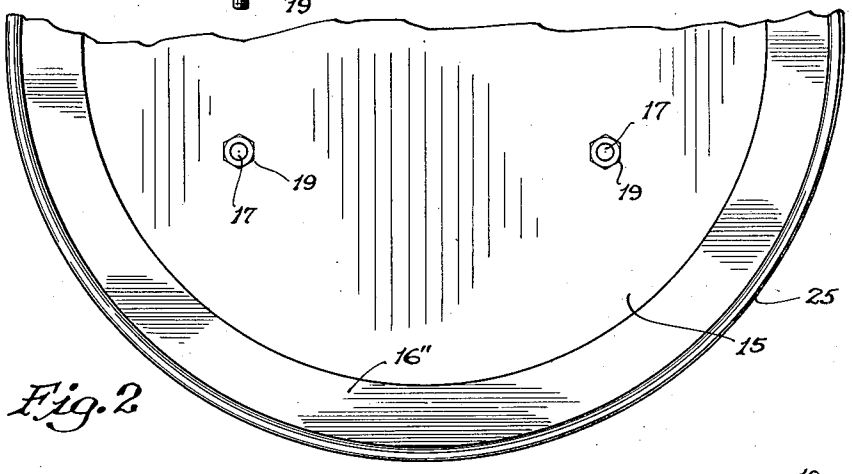


Fig. 2

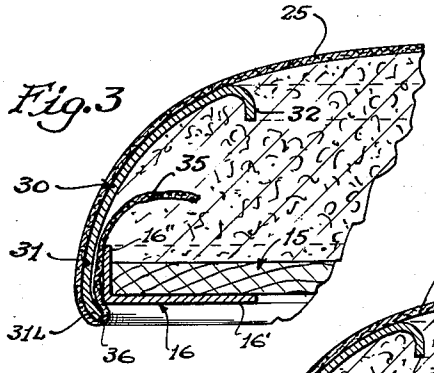


Fig. 3

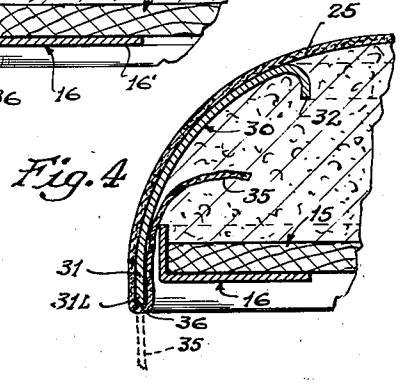


Fig. 4

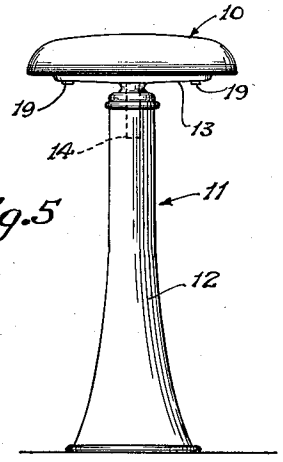


Fig. 5

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UPHOLSTERED SEAT CONSTRUCTION

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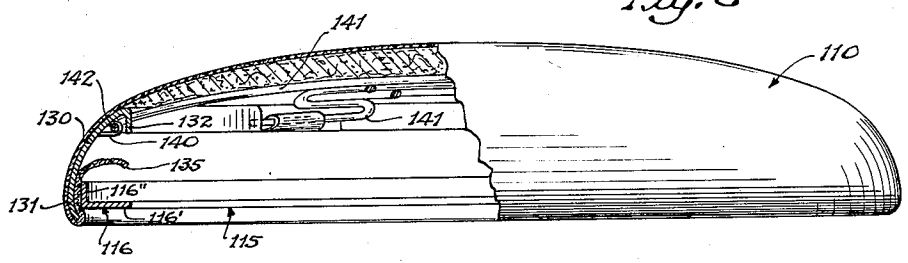
Fig. 6



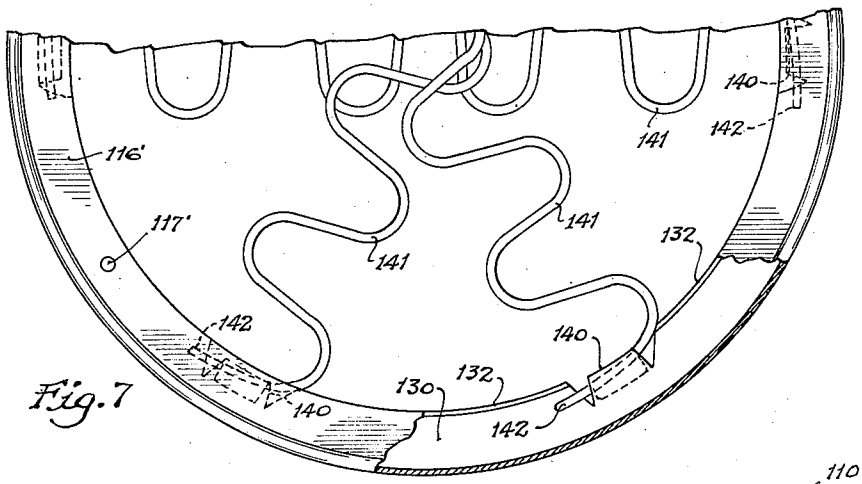


Fig. 7

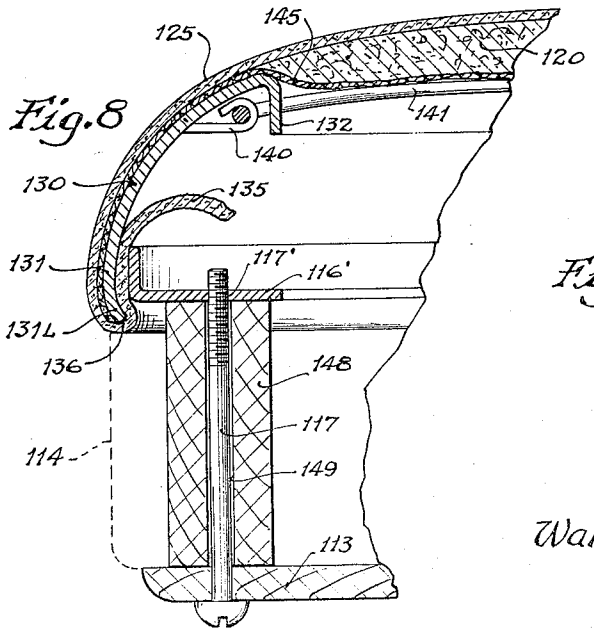


Fig. 8

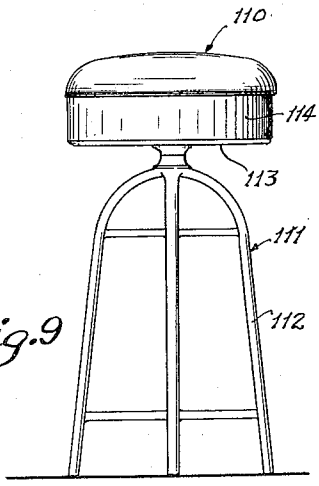


Fig. 9

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Patented Feb. 6, 1951 2,540,563

UNITED STATES PATENT OFFICE

2,540,563

UPHOLSTERED SEAT CONSTRUCTION

Walter J. Workman, Chicago, Ill.

Application March 7, 1946, Serial No. 652,662

3 Claims. (Cl. 155—184)

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This invention relates to the construction of furniture and particularly it relates to the construction of the upholstered elements of furniture such as the seats and backs thereof that are separately formed and then placed in position upon the supporting elements of the furniture.

The upholstered seats and backs that are used on metal furniture and the seats that are used on stools and the like have heretofore been constructed in such a manner so as to require a relatively large amount of manual work that was difficult to perform and which required considerable time. Thus in the construction of the seats for stools and chairs and in the construction of back members for such chairs, it has been the custom heretofore in most instances to provide a base member upon which the resilient portions of the seat were mounted and such resilient means have taken the form of a padding made from kapok or rubber; or from a combination of such padding with spring devices of various kinds, and after such padding or resilient means have been put in place upon the base member, the flexible covering in the form of a fabric, leather, or imitation leather has been placed over the resilient means and has been extended over and about the edge of the base and has been secured by means of tacking over the exposed face of the base. In some instances it has been customary to thereafter place a protective and concealing covering over the portions of the covering that have been tacked to the base. It will be evident that such procedure is relatively slow and expensive, and it is the primary object of the present invention to simplify the production of such upholstered furniture components so as to thereby improve the appearance and reduce the cost of such components. Another object of the present invention is to eliminate the manual stretching and tacking operations that have been heretofore performed in the making of upholstered furniture seats and backs. A related object is to enable the covering of such furniture seats and backs to be secured in place by automatically performed operations that are of such a character that the covering is evenly stretched into position and is secured in place by a single securing element.

Further and related objects of the present invention are to enable a continuous or endless securing element to be associated with the covering of upholstered seats and backs for furniture in such a manner that this continuous and relatively rigid element will cooperate with the base

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of the seat or back in stretching and properly positioning the covering as an incident to the assembly or association of these elements; to enable the aforesaid endless member to be readily and easily interlocked with the base member after these elements have been moved into the desired assembled relationship; and to enable the aforesaid endless and relatively rigid element to be made by processes that are rapid and economical in character.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings which, by way of illustration show preferred embodiments and the principles thereof and what I now consider to be the best mode in which I have contemplated applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a side view taken partially in section and illustrating an upholstered seat embodying the features of the invention;

Fig. 2 is a fragmental bottom plan view of the seat shown in Fig. 1;

Fig. 3 is an enlarged sectional view similar to Fig. 1;

Fig. 4 is a sectional view similar to Fig. 3 and showing the form of the elements prior to the final interlocking operation;

Fig. 5 is a view showing the seat in position on a stool;

Fig. 6 is a view similar to Fig. 1 and illustrating an alternative form of the invention wherein the resilient means is afforded by a combination of springs and padding;

Fig. 7 is a fragmental bottom plan view of the seat shown in Fig. 6;

Fig. 8 is a fragmental sectional view showing the manner in which the seat of Figs. 6 and 7 may be associated with a stool having padded side walls disposed beneath the seat; and

Fig. 9 is an elevational view of a stool having the structure of Fig. 8 mounted thereon.

In the form of the invention chosen for disclosure in Figs. 1 to 5 of the drawings, the invention is illustrated as embodied in an upholstered seat 10 that is adapted particularly for association with a stool 11 of the character that is conventionally employed in restaurants and soda fountains, such a stool 11 being illustrated

in Fig. 5 of the drawings and comprising a stationary standard 12 and a flat disc like 13 rotatably mounted on the standard 12 by a vertical trunnion 14. The seat 10 which is shown in detail in Figs. 1 to 4 of the drawings has a flat base 15 that may be made from a material such as wood, and in the present instance this base 15 has a rim 16 made from metal and angular in cross section so as to afford a bottom flange 16' and a side flange 16''. It will be recognized that the seat 10 as herein shown is circular in character, but it will be evident that other shapes may be employed where the upholstered seat is to be utilized in other types of furniture construction. The base 15 of the seat 10 has a plurality of bolts 17 extended downwardly therethrough so that the heads of such bolts rest on washers 18 that are disposed above or on the upper surface of the base 15, and these bolts 17 may be extended downwardly through openings 13 of the stool and may be secured in position by nuts 19.

With the fastening means such as the bolts 17 in position on the base 15, the padding or resilient means are disposed in position on the top of the base 15 and in the form illustrated in Figs. 1 to 5 of the drawings, such resilient means take the form of fibrous packing material 20 which may be of kapok or the like. After the padding 20 is thus in position, a flexible cover 25 of fabric, leather, leatherette or the like is placed in position over the padding 20, and in accordance with the present invention, such covering is stretched into place by a simple operation, at the end of which another relatively securing operation may be performed so as to fix the cover 25 in the desired relationship on the seat. To this end, a continuous securing member 30 is formed from a material such as sheet metal so as to afford a continuous lower flange 31 adapted to surround the outer edge of the base 15 in a complemental and relatively snug relationship, the arrangement in the present case being such that the flange 16'' constitutes the outer edge of the base 15 and the aforesaid snug relationship is between the flange 16'' and the flange 31. Considered in cross section, the continuous member 30 in the present case extends upwardly from the flange 31 and inwardly at a substantial curvature and is then flanged downwardly at 32. The continuous member 30, in the assembly operation, has the covering 25 stretched thereover, and the covering 25 is of such a size as to afford a marginal portion 35 that extends beyond the edge 36 of the flange 31. This marginal portion 35 is then bent inwardly so as to be disposed against the inner face of the flange 31, and when this has been done, the continuous member 30 is pressed downwardly over and above the base 15 so as to thereby dispose the marginal portion 35 of the cover 25 between the edge of the flange 16'' and the inner face of the flange 31. This movement is continued until the end edge 36 of the flange 31, disposed below the exposed face of the flange 16'', and the lower portion 31L of the flange 31 is then bent inwardly from the relationship of Fig. 4 to the relationship of Fig. 3, thereby to afford an interlocking relationship between the continuous element 30 and the base 15. The resilient padding 20 will of course tend to displace the cover 25 and the securing member 30 is in upward direction, Figs. 1, 3 and 4, but the aforesaid interlocked relationship will of course be maintained. It will be observed that the thickness of the material of the covering 25 adjacent the edge 36 functions as a portion of the interlocking connection, and hence the extent of the inward bending of the edge portion 31L may be relatively small. The assembly of the elements of the seat 10 in the manner just described serves of course to impart a stretching force to the marginal portion 35 of the cover, and hence the assembly operation is relatively simple, and furthermore, the inward bending of the marginal portion 31L of the member 30 may be readily accomplished so as to maintain the elements in the desired position with the cover 25 evenly stretched so as to produce the desired neat appearance of the seat 10.

As pointed out hereinbefore, the resilient means employed in the upholstered seat of the present invention may take the form of padding as hereinbefore described, or may be afforded by a combination of spring means and padding, and such an embodiment of the invention is illustrated in Figs. 6 to 9 of the drawings. In this embodiment of the invention, a seat 110 is illustrated that is adapted for use on a bar stool 111 that has a leg structure 112 upon which a head 113 is rotatably mounted. The stool 111 has an annular upholstered vertical wall 114 disposed on the top of the head, and the seat 110 is adapted, as will be hereinabove described, to be secured in position on top of the aforesaid annular wall 114.

In the production of the seat 110 under the present invention, a base 115 is afforded in the form of a sheet metal member 116 having a horizontal flange 116' and a vertical flange 116'' and it will be noted that in the seat 110, the base 115 does not include a continuous wood panel of the character employed in the other embodiment of the invention. The sheet metal member 116 therefore constitutes the sole element of the base 115, and securing means are associated with the flange 116'' thereof as by extension of self-tapping screws 117 upwardly through suitable openings 117' in the flange 116', as will hereinafter be described.

As in case of the seat 10, the seat 110 is herein illustrated as being circular in form, but it will be recognized that other forms might be used and that the structure 110 might be utilized for either a seat or a chair back as desired. In forming the seat 110, a continuous securing member 130 is formed from sheet metal so as to afford a flange 131 that is initially of a straight form as was described hereinbefore with relation to the flange 31, and the member 130 as viewed in cross section, is curved inwardly and is then flanged downwardly at 132 so as to afford an open upper end for the member 130. Portions of the flange 132 are cut away as indicated at 140 in Figs. 6, 7, and 8, and elongated spring elements 131 of conventional form are extended diametrically across the open upper end of the member 130, and the ends 142 of the spring elements 140 are anchored in the portions 140 that have been cut from the member 130 as hereinabove described. Thus an open-work resilient support is afforded across the open upper end of the member 130, and this open-work support is covered by means such as a sheet 145 of fabric, Fig. 8, so that a layer 120 of padding such as kapok may be supported on the fabric 145 above the springs 141. The structure thus afforded is then enclosed by a cover 125 formed by a sheet of upholstery material such as leather, leatherette or the like. This cover 125 is extended downwardly beyond the edge 136 of the flange 131, and is reversely bent about the edge 136 and into contact with

the inner surface of the continuous member 130. The elements are then assembled by forcing the base ring 116 into the position shown in Figs. 6 and 8, after which the lower border portion 131L of the member 130 is bent inwardly into an interlocked relationship in the manner as hereinbefore described.

In the use of the seat 110 on a stool 111, Fig. 9, the upholstered annular member 114 is put into place on the head 113 of the stool, and supporting blocks 148, having vertical bores 149 therein are disposed on the head 113 within the annular member 114. Self-tapping screws 117 are then extended through the head 113 and upwardly through the bores and are screwed into the openings 117' to secure the seat 110 in position.

From the foregoing description it will be apparent that the present invention enables the upholstered elements of furniture, such as the seats, backs, or the like to be rapidly and economically manufactured by the processes that are relatively simple to perform, and in such manufacture the covering of the upholstered elements is evenly stretched so as to assure an attractive appearance in the finished article. The production of upholstered furniture elements in the production of furniture elements enables the covering of such elements to be secured in position by a single securing member and this is accomplished in such a manner that the work may be performed quickly and easily.

Thus, while I have illustrated and described the preferred embodiments of my invention, it is to be understood that these are capable of variation and modification and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.

I claim:

1. In an upholstered furniture seat or the like, a securing member made from sheet metal to afford a continuous flange of substantially the plan-form desired in the seat or the like, a covering extended across said securing member with an inner face thereof against said member and having marginal portions thereof folded about the edge of said flange and into contact with the inner face of said flange, resilient means acting on the inner face of said cover to support the same, and a base disposed within said member and clamping said marginal portion to the inner face of said flange, and said flange being bent inwardly to lock said base in such relationship.

2. The method of making upholstered furniture seats and the like which consists in forming a base member of substantially the plan-form desired in the finished seat or the like, forming a continuous securing member having a flange substantially complemental to and adapted to embrace the edge portion of said base member, mounting resilient upholstery means on one of said members, placing a flexible cover over said securing member and folding the marginal edges of said cover about the edge of said flange and into contact with the inner face of said flange, forcing said base member in a particular endwise direction into the complemental flange of said securing member to thereby act on said marginal portion of the cover to stretch said cover over said securing member and clamp said marginal portion between said flange and said base member, and fixing said base member in said relationship with respect to said securing member and against movement in an opposite endwise direction out of said flange.

3. The method of making upholstered furniture seats and the like which consists in forming a base member of substantially the plan-form desired in the finished seat or the like, forming a continuous securing member having a flange substantially complemental to and adapted to embrace the edge portion of said base member, mounting resilient upholstery means on one of said members, placing a cover over said securing member and folding the marginal edges of said cover about the edge of said flange and into contact with the inner face of said flange, forcing said base member endwise into the complemental flange of said securing member to thereby act frictionally on said marginal portion of the cover to stretch said cover over said securing member and clamp said marginal portion between said flange and said base member, and bending the edge portion of said flange inwardly to secure said base member in such relationship.

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