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(54) Improvements in or relating to seats.

(57) A bath seat comprises a wooden sheet-like structural member (10) covered over its top and sides by a moulded plastics cover member (18) which is contained to define a seat (30) and other recesses (28). Four adjustable fixing members (50) are clampable to the underside of the bath seat to enable the bath seat to be securely clamped to baths of any shape.

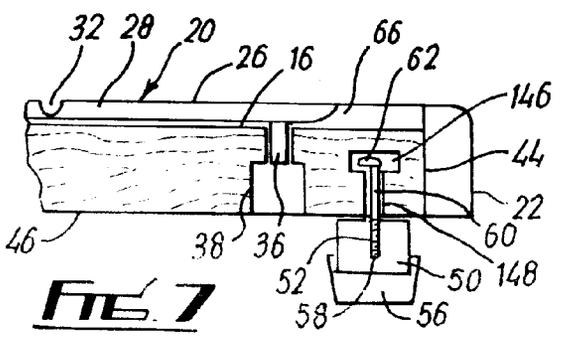

FIG. 7

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The present invention concerns improvements in or relating to seats, particularly but not exclusively seats intended to be used in domestic baths.

For many years there have been provided seats for use in or on baths whereby disabled, elderly and infirm people can bathe in relative comfort and safety. One form of bath seat comprises a board-like member which is supported on the sides of the bath and spans the gap between the bath sides. Seats of this nature are provided with temporary fixing means whereby they can be located on the sides of the bath.

Different methods have been employed in the past for manufacturing such seats, for example, one seat has comprised a simple marine plywood board with adjustable fixing means on its underside. Whereas boards of this nature are relatively easy to manufacture they require careful finishing to ensure, for example, that there are no rough edges and to ensure that the coating applied to the board is durable and waterproof. Another form of manufacture utilised in the past has been to fabricate the seat from a number of plastics material components each formed by injection moulding or vacuum forming.

Existing methods of construction have all given rise to advantages but in certain instances have been disadvantageous, for example, whereas the marine plywood board seat is simple in its basic construction the finishing processes required are time consuming and relatively expensive, thereby detracting from the original simplicity of design. Conversely the manufacturing costs for moulded plastic seats are relatively high but provide a relatively good finish.

A further problem experienced with all existing boards is the temporary fixing means. It will be realised that these must be adjustable to accommodate different widths of baths, different bath wall profiles, bath manufacturing materials, etc. It is the seat maufacturer's aim to provide a fixing which is universal, that is which will be suitable for use with all baths likely to be encountered on the marketplace but the flexibility of design that this calls for often means that with some, if not all, baths the fixing means are either difficult to adjust, which is a problem for disabled users, or they do not provide a particularly secure fixing.

It is an object of the present invention to obviate or mitigate these and other disadvantages.

According to the present invention there is provided a bath seat comprising a main structural member formed from a sheet of material and adapted.to span the gap between the bath sides and a cover member moulded from a plastics material enclosing the top face and sides of the structural member.

Preferably the structural member is cut from a sheet of plywood.

Preferably the cover member has a top with lips downwardly depending from the periphery of the top, the top and lips being of substantially the same thickness, and the top being contoured to present raised and lowered areas defining a seating area, soap receiving areas and drainage channels.

Preferably fixing bosses depend downwardly from the undersurface of the top, and project partially through holes formed through the structural member and are threaded to receive fixing screws.

Preferably the locating ribs locate the longitudinal edges of the structural member over its central region lips at the transverse edges of the cover member locate the transverse edges of the structureal member and reinforcing ribs depend downwardly from regions of the cover member extending beyond the longitudinal edges of the structural member.

Preferably a guide rib extends downwardly from the underface of the cover member and is transversely spaced from the longitudinal edges of the structural member at its outer regions and the cover member is contoured whereby its under surface in those areas alongside the guide rib on its side facing the longitudinal edge of the structural member is spaced above the supper surface of the structural member to provide a void for fixing means.

The said guide rib terminates short of the transverse lips of the cover member to provide a recess in the assembled seat in communication with said void for fixing means.

Preferably adjustable fixing means are provided for the seat and comprise four members each having a threaded passage therein and a fixing bolt threadably mounted therein, the fixing bolt at its end remote from the threaded connection with the fixing member having an eccentric head which can be introduced by way of said recess into said void where it is confined to movement along the void so that the fixing member can be located at any position along the void by screwing it down against the structural member and/or guide and reinforcing ribs.

Further according to the present invention there is provided a furniture assembly including adjustable fixing means comprising a structural member defining longitudinal edge portions and a moulded plastics cover member for enclosing the structural member, the cover member along portions above at least part of the longitudinal edges of the structural member defining a space therebetween for the reception of a head of a threaded member to which the fixing means is threadably attached.

An embodiment of the present invention will now be described by way of example only with reference to the accompanyig drawings which are not all to the same scale, in which:-

Fig. 1 shows schemmatically a view from above of a bath seat;

Fig. 2 shows a view from below of the bath seat;

Fig. 3 shows a view from below to an enlarged scale of a corner of the bath seat,

Fig. 4 shows a partial sectional elevation taken on the line IV-IV of Fig. 3;

Fig. 5 shows a sectional end elevation on the line V-V of Fig. 1.

Fig. 6 shows a view similar to Fig. 3 of a modified bath seat and,

Fig. 7 shows a partial sectional elevation taken on the line VII-VII of Fig. 6.

A bath seat intended to rest on the top of the sides of a bath and provide a seating platform includes a structural member 10 formed from a rectangle of waterproof plywood which defines two parallel longitudinal edges 12 and two transverse edges 14. The, in use, upper face 16 of the structural member 10 is covered by a cover member 18 formed from plastics material, for example polypropylene by injection moulding, the cover member extending beyond the longitudinal edges 12 of the structural member 10. The cover member comprises a top 20 with lips 22,24 depending downwardly from the longitudinal and transverse edges respectively of the top. Effectively, the top and lips are formed such that they have a uniform thickness so that it will be realised that the cover member is effectively a sheet-like member. The top is moulded such that it has a contoured form defining three areas which are relatively lower than the peripheral areas 26.

The lower areas, the under surfaces of which abut the upper surface 16 of the structural member, define respectively two soap dishes 28 and a seat 30. Open topped drainage channels 32 extend between the soap dishes and the seat. An arcuate chamfered area 34 is provided at the front of the seat 30 and extends into a lowered central portion of the front lip 22 which extends over its central region.

At least the lowered areas can be textured to improve grip and encourage drainage.

Four threaded bosses 36 project downwardly from the underface of the top, having been moulded integrally therewith. They project through passages 38 drilled in the structural member so that fixing bolts, threadably mounted in the bosses, can attach the cover 10 to the structural member 10. The structural member is further located within the cover by abutment or near abutment of the transverse edges 14 of the structural member with the transverse lips 24. Location of the longitudinal edges 12 of the structural member is provided by a downwardly extending locating rib 40 which extends over the central region of the cover alongside the structural member.

A guide rib 42 projects downwardly from the under surface of the top alongside but spaced from the outer regions of the longitudinal edges 12 of the structural member. Reinforcing ribs 44 extend between the longitudinal lips 22 and the locating and guide ribs 42,44. The locating, guide and reinforcing ribs are all of the same depth and terminate at a level which is substantially co-planar with the level of the base 46 of the structural member when the cover is fixed thereto.

The fixing means for fixing the bath, which are illustrated in Fig. 4, comprise a cylindrical fixing member 50 having a central threaded bore 52. A resilient material cap 56 of high friction material is fitted to the lower end of the fixing member 50 and a fixing bolt 60 having a threaded end 58 is engaged in the threaded bore 52. The fixing bolt 60 has an eccentric head 62, for example a D-head.

Examination of Fig. 3 shows that the guide rib 42 terminates short of the transverse lip 24 thereby defining a recess 64. The spacing of the guide rib 42 from the edge 12 of the structural member defines an open bottomed channel 48 for reception of the fixing means. Furthermore, Fig. 4 shows that a raised area 26 of the top 20 overlies the channel 48. It will be appreciated therefore that the D-head 62 of the fixing bolt 60 can be introduced into the void 66 defined between the top and the top face 16 of the board to move along the channel 48 from one end to the other, the head of the bolt being introduced into the void 66 by way of the recess 64. When the fixing member 50 carrying the fixing bolt 60 is moved to an appropriate position it can be fixed in this position by screwing down the fixing member 50 such that its end opposite to the end carrying the cap 56 engages the under surface 46 of the structural member 10 and/or the underside of the ribs 42,44. The D-head 62 of the bolt will be held against rotation by the flat of the D engaging the guide ribs 42 and the underside of the overhang of the D bolt will engage the upper face of the structural member 10 thereby causing a firm permanent but removable fixture of the fixing member 50 relative to the set.

Various modifications can be made without departing from the scope of the invention, for example, the cover can take a variety of shapes and profiles; the means for attaching the cover to the structural member can be varied, for example, adhesive could be employed; or self-tapping screws could be screwed into the bosses. The structural member could be formed from metal, for example extruded aluminium and the term "sheet" utilised to define the structural member or intended to embrace all substantially planar members.

In the modification shown in Figs. 6 and 7 an alternative arrangment for maintaining the fixing means for fixing the seat to the bath is employed. Using a router having a first cylindrical cutter at its outer end and a second cylindrical cutter of a diameter smaller than that of the first cutter extending from the first cutter four channels 148 having enlarged bases 146 are out at each corner of the structural member 10 with the axles of each channel being parallel to the longitudinal edges 12 of the member 10 and a cylindrical recess or passage 164 at the channel ends nearest the transverse edges 14 of the member.

The fixing means for the modified seat shown in Figs. 6 and 7 take the same form as those shown in

Fig. 4 and will not be further described. To fit a fixing means the bolt 60 and head 62 are introduced down the passage 164 and with the head at the bottom of the channel it is moved into the enlarged base 146 where it becomes held against removal but can be moved along the channel 148 prior to fixing the member 50 by screwing it down agains the undersurface of the member 10.

In a further modification the cover member 18 illustrated in the modification shown in Figs. 6 and 7 can be replaced by a similar cover member having all or some of the ribs 42,44 omitted.

Claims

1. A bath seat comprising a main structural member formed from a sheet of material and adapted to span the gap between the bath sides characterised in that a cover member (18) moulded from a plastics material enclosed the top face (16) and sides (12) of the structural member (10).

2. A bath seat as claimed in claim 1, characterised in that the structural member (10) is cut from a sheet of plywood.

3. A bath seat as claimed in claim 1 or claim 2, characterised in that the cover member (18) has a top (20) with lips (22,24) downwardly depending from the periphery of the top, the top (18) and lips (22,24) being of substantially the same thickness, and the top being contoured to present raised and lowered areas defining a seating area (30), soap receiving areas (28) and drainage channels (32).

4. A bath seat as claimed in any of claims 1 to 3, characterised in that fixing bosses (36) depend downwardly from the undersurface of the top and project partially through the holes (38) formed through the structural member (10) and are threaded to receive fixing screws.

5. A bath seat as claimed in claim 4, characterised in that locating ribs (40) locate the longitudinal edges (12) of the structural member (10) over its central region lips (24) at the transverse edges of the cover member (18) locate the transverse edges (14) of the structural member and reinforcing ribs (44) depend downwardly from regions of the cover member (18) extending beyond the longitudinal edges (12) of the structural member (10).

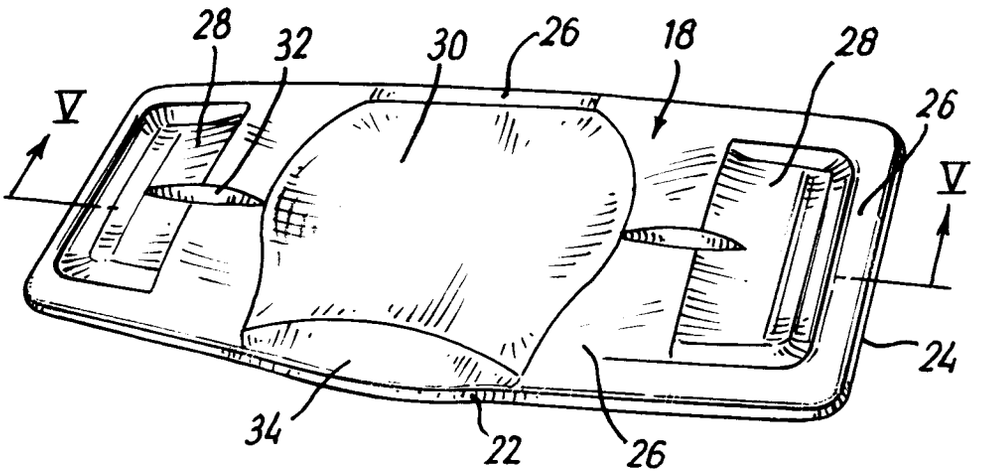
6. A bath seat as claimed in any one of the preceding claims, characterised in that a guide rib (42) extends downwardly from the underface of the cover member (18) and is transversely spaced from the longitudinal edges (12) of the structural member (10) at its outer regions to define a channel (48) alongside the structural member and the cover member (18) is contoured whereby its under surface in those areas (26) alongside the guide rib (42) on its side facing the longitudinal edge (12) of the structural member is spaced above the upper surface (16) of the structural member (10) to provide a void (66) for fixing means (50).

7. A bath seat as claimed in claim 6, characterised in that the guide rib (42) terminates short of the transverse lips (24) of the cover member (18) to provide a recess (64) in the assembled seat in communication with said void (66) for fixing means (50).

8. A bath seat as claimed in any one of claims 1 to 5, characterised in that four channels (148) with enlarged bases (146) providing a void for fixing menas are provided in two parallel pairs near each end of the structural member (10).

9. A bath seat as claimed in claim 7 or claim 8, characterised in that adjustable fixing means are provided for the seat and comprise four members (50) each having a threaded passage (52) therein and a fixing bolt (60) threadably mounted therein, the fixing bolt (60) at its end (58) remote from the threaded connection with the fixing member (50) having an eccentric head (62) which can be introduced by way of said recess (64,164) into said void (66,166) where it is confined to movement along the void so that the fixing member can be located at any position along the void by screwing it down against the structural member (10) and/or guide and reinforcing ribs (42,44).

10. A furniture assembly characterised in that it includes adjustable fixing means comprising a structural member (10) defining longitudinal edge portions (12) and a moulded plastics cover member (18) for enclosing the structural member, the cover member (18) along portions above at least part of the longitudinal edge portions (12) of the structural member defining a space (66) therebetween for the reception of a head (62) of a threaded member (60) to which the fixing means (52,56) is threadably attached.



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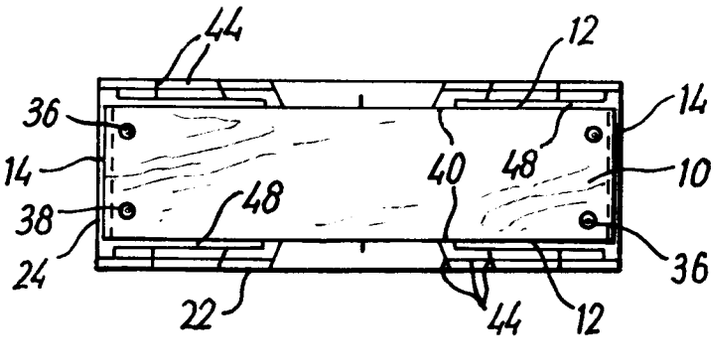

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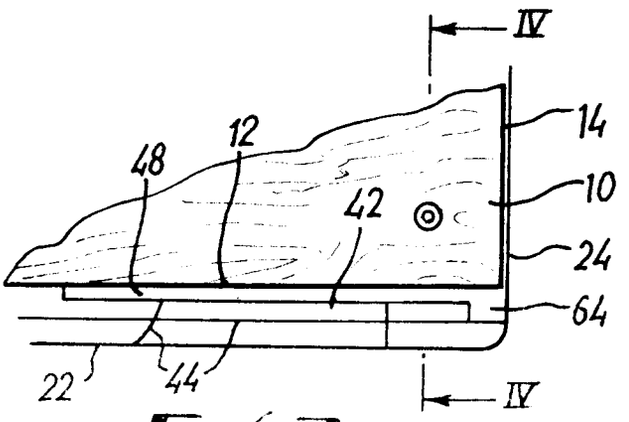

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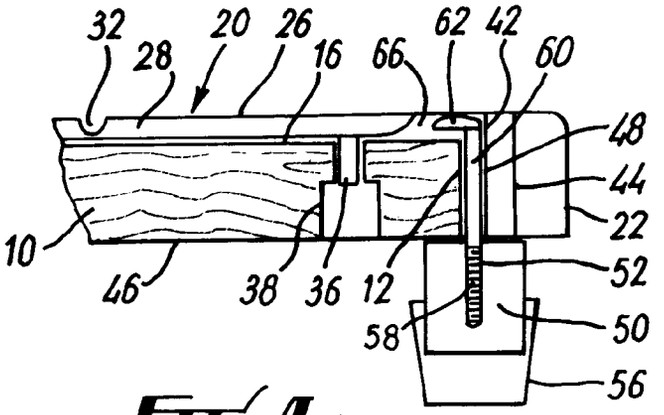

FIG. 4

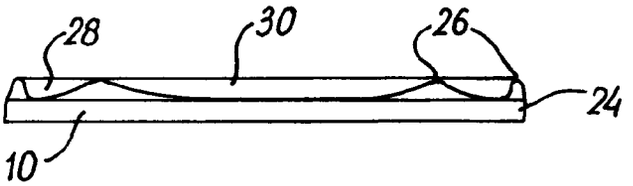

FIG. 5

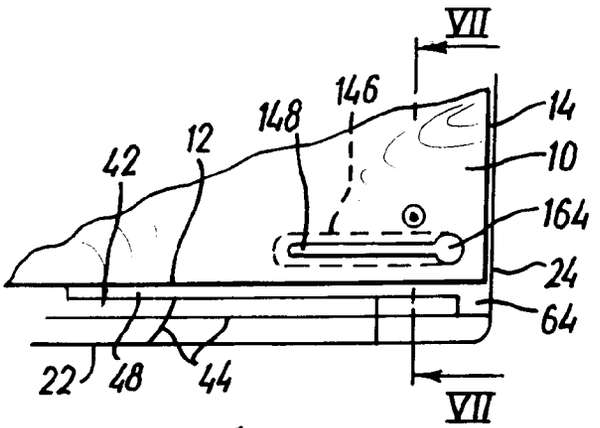

FIG. 6

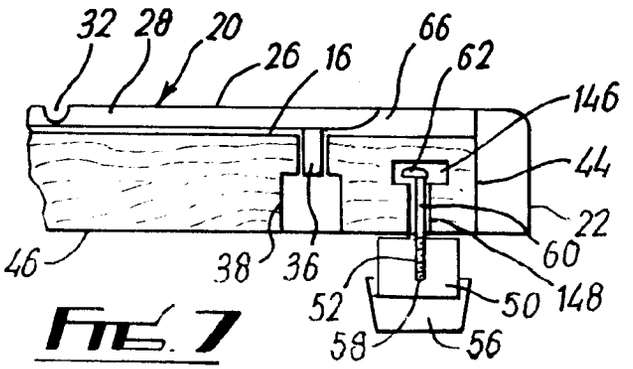

FIG. 7

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 30 3616

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	DE-U-90 11 043 (G. PAULUS) * the whole document *	1	A47K3/12
A		2	
X	WO-A-90 13252 (B. VAN HOVEL) * claim 1 *	1	
A	LU-A-84 532 (METALPREDIL S.P.A.) * the whole document *	1-3	

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

A47K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 August 1994	Delzor, F

CATEGORY OF CITED DOCUMENTS

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