April 8, 1952 J. KUNES 2,592,160

BATHTUB HEADREST

Filed May 4, 1950

Fig. 1.

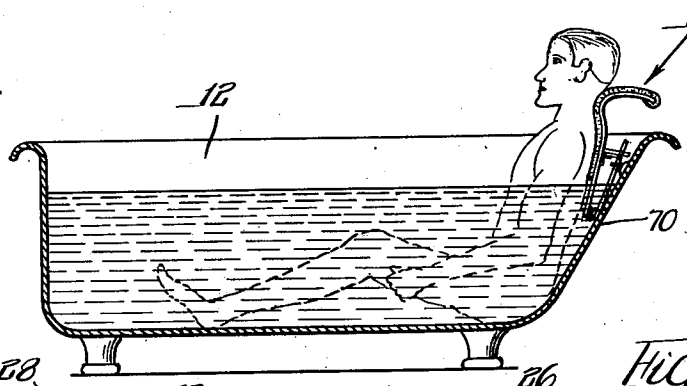


Fig. 2.

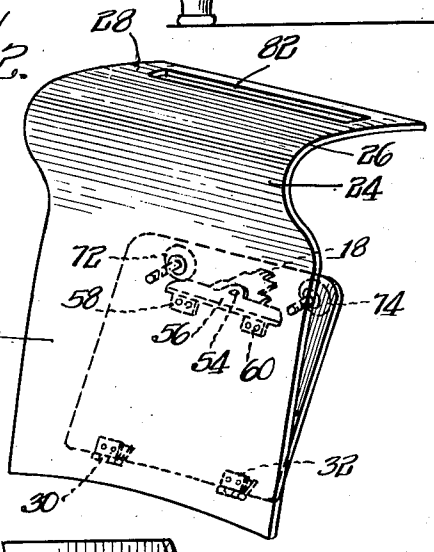


Fig. 3

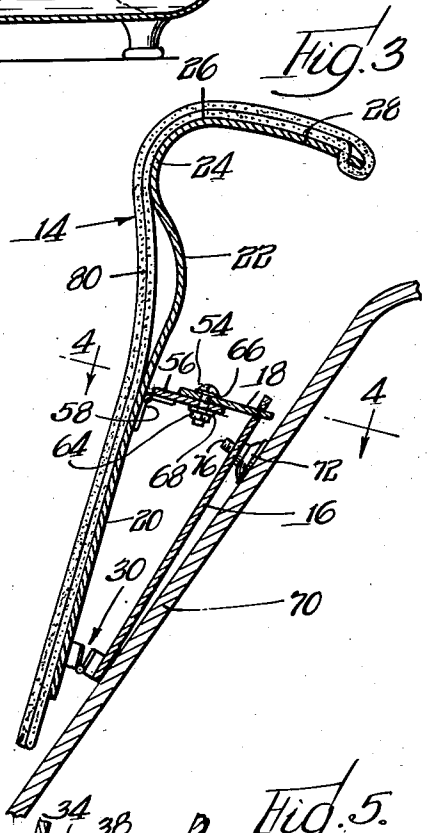


Fig. 4.

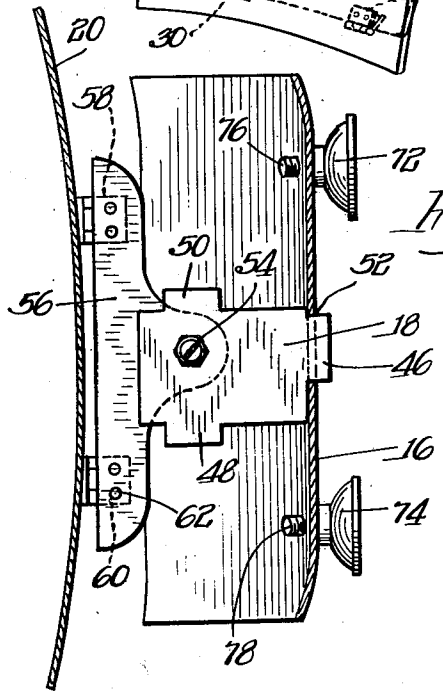
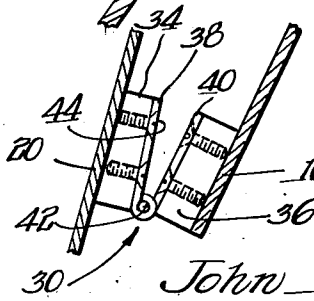


Fig. 5.



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BATHTUB HEADREST

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3 Claims. (Cl. 4—185)

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This invention relates to support structures for backs and heads and more particularly to adjustable support structures of this type.

Many pieces of furniture such as bath tubs, benches, chairs, porch swings and the like are provided with surfaces adapted to support the back of a person sitting thereon. These backs are usually hard, improperly shaped, do not provide a support for the person's neck and head, and are otherwise unsatisfactory for rest and relaxation. Bath tubs, in addition to having backs which are generally uncomfortably shaped, are often cold to the touch when the user first seats himself therein. Auxiliary back and head supports have been used heretofore with pieces of furniture of the type described above, but these auxiliary supports have been found to be unsatisfactory for one or more of several reasons. Certain of the auxiliary supports used heretofore did not provide the desired comfort and support and particularly did not provide insulating properties whereby to protect the user from the shock of contact with cold surfaces.

Accordingly it is an object of the present invention to provide an improved back and head support for use with various supporting surfaces; more specifically it is an object to provide a support having an improved shape whereby to give greater comfort in use.

Another object of the invention is to provide a support of the type set forth above which is adjustable to accommodate the taste of different users and in connection with this object to provide an improved structure for positively retaining the supporting member in its adjusted position.

Yet another object of the invention is to provide in a support of the type described an improved means for receiving and holding a cushion or cover member overlying the surface of the supporting member.

Still another object is to provide a support structure which can be easily and quickly folded into a compact unit for carrying, shipment, and storage.

In connection with the foregoing object it is another object to provide a support structure of the type described which is simple and easily attached to its cooperating supporting surface and readily removed therefrom.

A further object is to provide a support structure of the type specified which possesses insulating properties to protect the user from thermal shock and a structure which is simple and economical to manufacture.

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These and other advantages and objects of the present invention will be apparent from the following specification when taken into combination with the accompanying drawing. In the drawing where like reference numerals have been used to designate like parts throughout:

Figure 1 is a diagrammatic view partly in cross section showing a support structure made in accordance with and embodying the principles of the present invention, the support structure being shown applied to a bath tub with which it has particular utility;

Figure 2 is an enlarged perspective view of the support structure shown in Figure 1;

Figure 3 is an enlarged view in vertical cross section of the support structure shown in Figures 1 and 2;

Figure 4 is a view in cross section of the support structure shown in Figure 3 substantially as seen in the direction of the arrows along the line 4—4 thereof; and

Figure 5 is a further enlarged view illustrating the hinge connection between the support member and the mounting member of the support structure shown in Figures 1–4.

Referring now to the drawing there has been shown a preferred embodiment of a support structure, generally designated by the numeral 10, made in accordance with and embodying the principles of the present invention. The support structure 10 has been shown applied to a bath tub 12, an application in which it has particular utility, but it is to be understood that it can be used in connection with other suitable forms of supporting surfaces.

As may be seen in Figure 3 the support structure 10 comprises a support member 14 against which the user's back and head rest, a mounting member 16 for attaching the support member to a supporting surface, and an adjustable cam 18 for adjustably positioning support member 14 with respect to the mounting member 16.

Support member 14 is a single piece of material shaped generally to conform with the contours of the back, neck, and head of a user. Formed on the lower end of support member 14 as viewed in Figures 2 and 3 is a back supporting portion 20 which has preferably a length substantially equal to the distance between the base of the neck and the small of the back of an average adult. Referring to Figure 4 there is seen the cross sectional configuration of the back supporting portion 20. Portion 20 is formed convex when viewed from the front thereby to generally conform with the curvature of a human back.

Formed adjacent portion 20 and attached integrally thereto is a shoulder supporting portion 22 which as its name implies is adapted readily to receive the user's shoulder. Portion 22 is recessed inwardly or to the right as viewed in Figure 3 out of the plane of the back supporting portion 20. Extending outwardly from and attached to the shoulder supporting portion 22 is a neck supporting portion 24 which is curved and terminates in a head supporting portion 26. Head supporting portion 26 is directed rearwardly, extends a substantial distance behind the back supporting portion 20, and terminates in a portion 28 which is disposed substantially perpendicularly to the back supporting portion 20. The back supporting portion 20, the shoulder supporting portion 22, the neck supporting portion 24, and the head supporting portion 26 are all formed integral to produce a smoothly curved support member 14 which supports the user's upper torso in a comfortable and relaxing manner.

The lower edge of support member 14 is preferably hingedly connected to the mounting member 16. To give the necessary degree of support a pair of hinges 30 and 32 are provided. Referring to Figure 5 there is shown in detail the manner in which the hinge 30 interconnects the support member 14 at the lower edge of the back support portion 20 to the lower edge of the mounting member 16. A pair of mounting blocks 34 and 36 are attached to portion 20 and mounting member 16 at the point of hinged attachment, the blocks being preferably cemented to their respective members or otherwise fastened in such a manner as to give the necessary support. Hinge 30 is preferably of the piano hinge type and comprises a pair of hinge plates 38 and 40 interconnected on one side by a hinge pin 42. The hinge plates 38 and 40 are attached as by screws 44 to the blocks 34 and 36 respectively. The construction and manner of mounting hinge 32 is identical with the structure and mounting of hinge 30.

Means is provided for adjustably spacing back support portion 20 from the upper edge of the mounting member 16. The spacing member comprises the cam 18, the shape of cam 18 being best shown in Figure 4. Cam 18 is a rectangular body from which extend three tongue portions 46, 48, and 50. The tongue portions are also rectangularly shaped and have a width slightly less than the width of a slot 52 formed near the upper edge of mounting member 16 and in the center thereof. An eccentrically positioned aperture is formed in cam 18, the aperture being adapted to receive a pivot pin or bolt 54 for a purpose to be described hereinafter. From Figure 4 it will be apparent that the distance from pin 54 to each of the tongues 46, 48, and 50 is different, the distance to tongue 46 being greatest, the distance to tongue 48 being somewhat less, and the distance to tongue 50 being the shortest.

Bolt 54, in addition to engaging cam 18, also engages a spacing member 56 which is hingedly attached to the back supporting member 14. By selectively placing one of the tongues of cam 18 in slot 52 a plurality of adjustments of the angularity between support member 14 and mounting member 16 can be obtained since the distance from the pin 54 to each of the tongues is different.

Referring to Figures 3 and 4 the manner of hingedly connecting spacing member 56 to portion 20 will be described. A pair of hinges 58 and 60 are provided, one of the hinges being positioned at each end of the spacing member 56. The hinges 58 and 60 are preferably of the piano hinge type and are provided with a pair of hinge plates interconnected with a hinge pin. One of the hinge plates of each hinge is suitably fastened to the spacing member 56 such as by rivets 62 and the other hinge plate of each hinge is attached to the back supporting portion 20. Any suitable manner of attachment of the hinges to back supporting portion 20 may be used, a preferred method being by the use of rivets having heads which are flat and which are recessed into the back supporting portion 20 whereby to provide a smooth supporting surface.

The pivot pin 54 passes through apertures in the spacing member 56 in the cam 18 as explained above to interconnect these members. A nut 64 is provided on the threaded shank of pin 54 to firmly hold the spacing member 56 and the cam 18 in assembled relationship. A plurality of washers such as the washers 66 and 68 are provided, one of the washers preferably being a lock washer to eliminate the possibility of inadvertent disassembly of the pivot pin 54 and the nut 64. To adjust the angularity between the back supporting portion 20 and the mounting member 16, the pivot pin 54 and the nut 64 are loosened and the cam 18 is rotated until the tongue which gives the desired degree of angularity is positioned in slot 52 in mounting member 16. When the cam 18 is in the proper position, the nut 64 is tightened on the threaded shank on pin 54 to hold the cam 18 in this desired position.

The structure described above makes it possible to readily fold the support member 14 and the mounting member 16 together to form a compact bundle which is readily transported and stored. To fold the support member 14 and the mounting member 16 into the folded position, the support member 14 is pulled to the left and away from the mounting member 16 as viewed in Figure 3. When the tongue of cam 18 which is disposed in slot 52 is withdrawn from the slot, the spacing member is folded downwardly and toward the back supporting portion 20 of support member 14 whereby to allow mounting member 16 to be folded toward the pack supporting portion 20 of support member 14. The support structure is then ready for transportation or storage.

Means for attaching the mounting member 16 to an overlying supporting surface such as the wall 70 of the bath tub 12, is provided in the form of a pair of suction cups 72 and 74. The suction cups 72—74 are preferably attached near the upper end of mounting member 16 just below the slot 52 and adjacent the vertical edges thereof. Means for attaching the suction cups 72—74 to the mounting member 16 is provided in the form of a pair of threaded stud members 76 and 78, respectively. One end of the stud members is imbedded in the suction cups 72—74 and the other end is threaded and adapted to engage threaded apertures in the mounting member 16. The suction cups 72 and 74 provide ready means for attaching the mounting member to the surface 70 and likewise facilitate removal or adjustment of the mounting member 16 with respect to the surface 70. It has been found that the suction cups 72—74 can be easily and effectively applied to substantially all types of supporting surfaces.

In certain instances it may be desirable to utilize a cushion or cover member to cover the

surface of the support member 14 which contacts the user's body. It has been found that a suitable cushion member is a towel having a relatively heavy nap. Means is provided toward the rear edge of the head supporting portion 28 of support member 14 to facilitate holding a towel 80 in cushioning position on the support member 14 in the form of a slot 82. Referring to Figure 2 it will be seen that slot 82 has a length slightly less than the width of the head supporting portion 28 whereby to accommodate substantially the entire width of a towel. The towel 80 is attached to the support member 14 by pulling one end of the towel through slot 82 until the edges of the slot engage substantially the center portion of the towel 80 and then folding both halves of the towel over the supporting surface of the support member 14. It will be seen that this structure provides a simple yet effective cushion to be used in conjunction with the support member of the present invention.

Any suitable material of construction having the requisite strength, insulating properties, and workability may be used to form the support member 14, the mounting member 16, and the associated parts. A preferred example of such a material of construction is the thermoplastic methyl methacrylate resin available under the trade name "Lucite." This resin is structurally strong and yet is readily workable whereby to form the curved configuration of the support member 14. This resin also possesses excellent heat insulating properties which make it particularly attractive in the present invention. As is well known in the art "Lucite" is clear and colorless and therefore presents a pleasing and attractive appearance. If desired, color and designs may be added to form a more decorative support and the support may be formed opaque in all applications in which this feature is desirable The support member 14, the mounting member 16, the cam 18, the blocks 34—36, and the spacing member 56 are all preferably formed of the same material, this material preferably being "Lucite" as described above.

It will be seen that there has been provided a support structure which fulfills all of the objects and advantages set forth above. More specifically, the support member of the support structure is shaped to conform generally to the shape of the back, neck, and head of the user, thereby to provide better support and greater comfort in use. By forming the support member of an insulating material such as a plastic or resin the body of the user is effectively insulated from the surrounding surface which may be either too cold or too warm for comfort. To add to the comfort the angularity of the support member with respect to the supporting surface is readily and simply adjusted. Simple yet effective means is provided for utilizing a cushion member such as a towel in conjunction with the support member and for attaching the cushion member to the support member. Attachment of the mounting member to an overlying support surface is rendered particularly simple by providing attachment means in the form of suction cups which can be applied to virtually all surfaces. This type of attachment means also facilitates dismounting of the support structure; the support structure furthermore is readily foldable into a compact unit whereby to facilitate storage and transportation thereof. The materials of construction which are most suitable for forming the support structure of the present invention readily lend themselves to decorations such as by coloring or other suitable means. The structure is capable of being economically and simply manufactured.

Although a preferred form of the invention has been shown for purposes of illustration, it is to be understood that various changes and modifications can be made without departing from the spirit and scope of the invention. Accordingly the invention is to be limited only as set forth in the following claims.

I claim:

1. An auxiliary body support structure comprising a support member, a mounting member, means hingedly interconnecting said support member and said mounting member at one end thereof, a spacing member hingedly attached to said support member, a cam adapted to abut against said mounting member, and means for clamping said spacing member and said cam together whereby to hold said support member and said mounting member in a predetermined angular position with respect to each other.

2. An auxiliary body support structure comprising a support member, a mounting member, means hingedly interconnecting one end of said support member and one end of said mounting member, a spacing member hingedly attached to said support member and having an aperture formed therein, a cam having an aperture therein, and means adapted to pass through said apertures to hold said cam and spacing member in assembled relationship, said cam having a plurality of surfaces disposed at various distances from the aperture therein, said surfaces being adapted to abut against said mounting member whereby adjustably to position said support member and said mounting member in a predetermined angular position with respect to each other.

3. An auxiliary body support structure comprising a support member, a mounting member, means hingedly interconnecting one end of said support member and one end of said mounting member, a spacing member hingedly attached to said support member and having an aperture formed therein, a cam having an aperture formed therein, a bolt adapted to be disposed in said apertures to hold said spacing member and said cam in assembled relationship, said cam having a plurality of tongue portions disposed at different distances from the aperture therein, said mounting member having a slot therein adapted to receive said tongues, said cam and spacing member holding said support member and said mounting member in positions of varying angularity depending upon which of said tongues is disposed in the slot in said mounting member.

JOHN KUNES.

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