

June 19, 1956

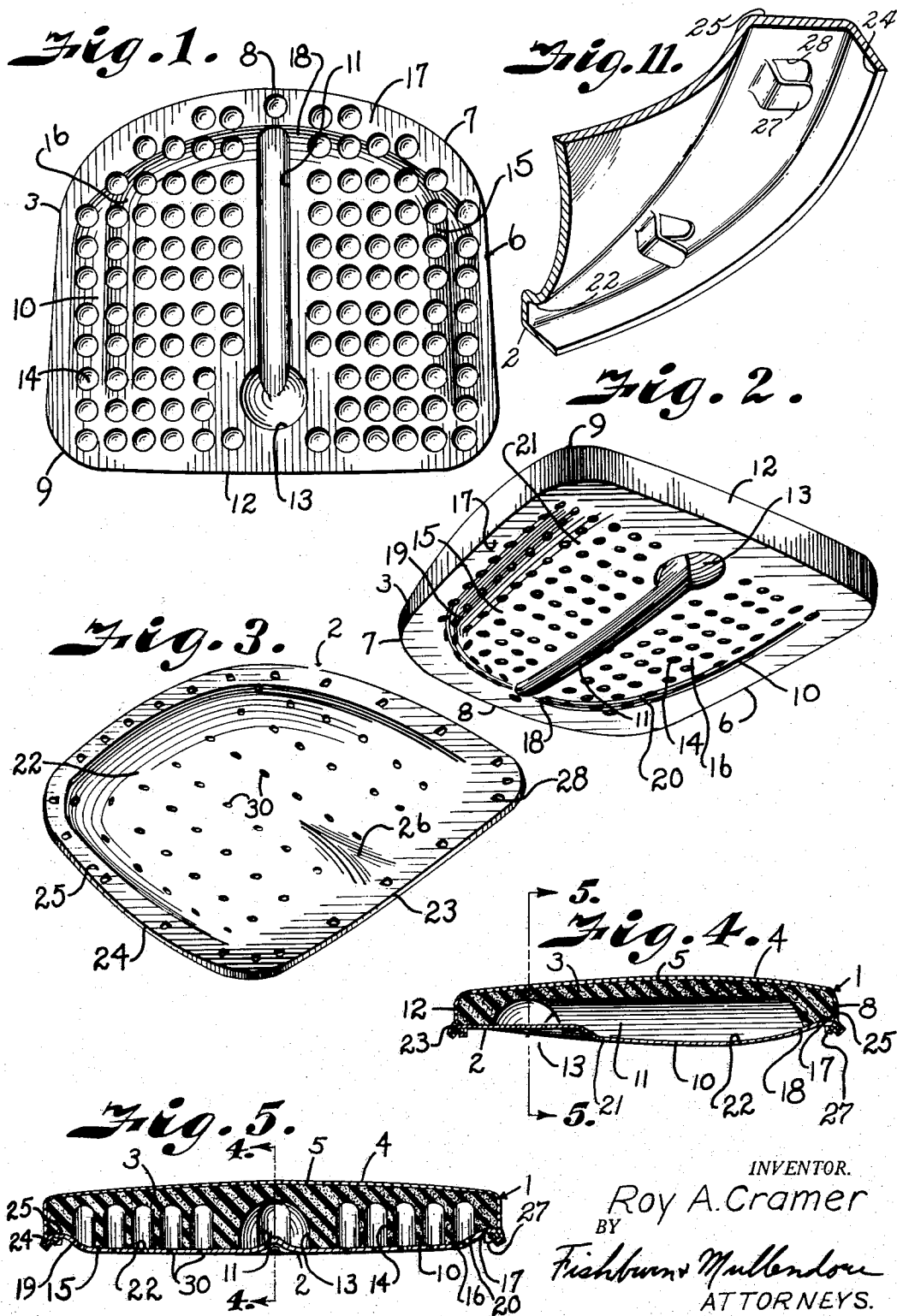
R. A. CRAMER

2,750,996

CHAIR SEAT AND CUSHION THEREFOR

Filed April 12, 1951

2 Sheets-Sheet 1



INVENTOR.

Roy A. Cramer

BY

Fishburn Mullendore
ATTORNEYS.

June 19, 1956

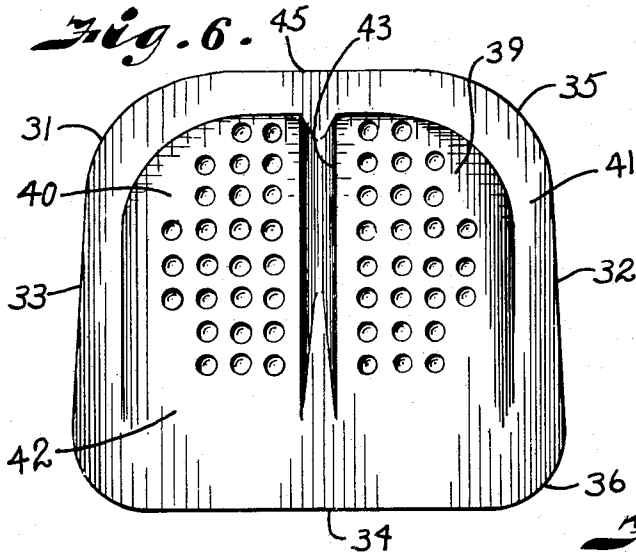
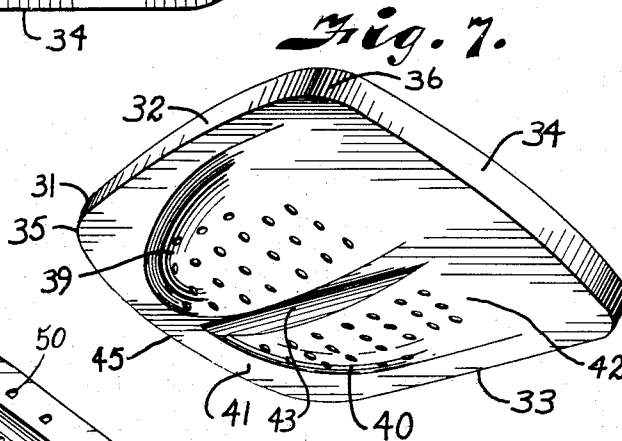
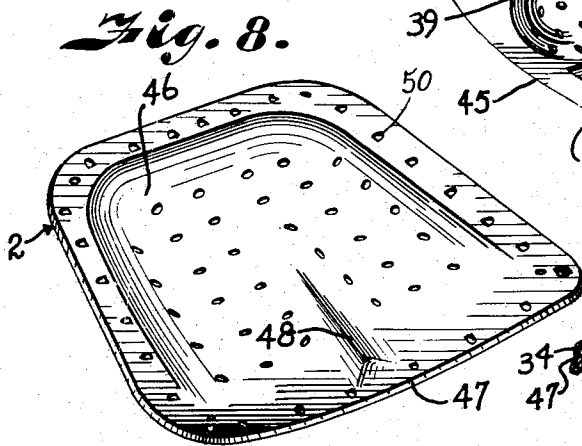
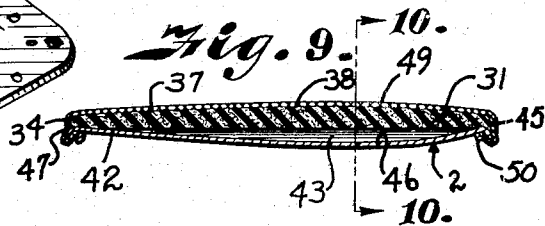
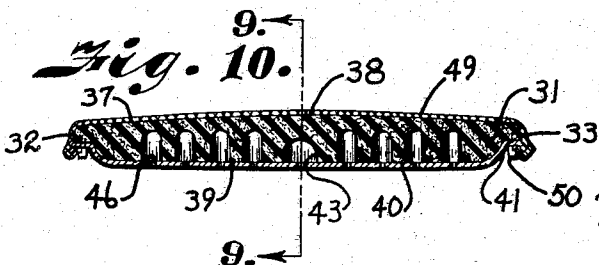
R. A. CRAMER

2,750,996

CHAIR SEAT AND CUSHION THEREFOR

Filed April 12, 1951

2 Sheets-Sheet 2



INVENTOR.
Roy A. Cramer
BY
Fishburn & Mullendore
ATTORNEYS.

1

2,750,996

CHAIR SEAT AND CUSHION THEREFOR

Roy A. Cramer, Kansas City, Mo., assignor to Cramer Posture Chair Co., Inc., Kansas City, Mo., a corporation of Missouri

Application April 12, 1951, Serial No. 220,691

1 Claim. (Cl. 155—179)

This invention relates to chair seats and cushions therefor, and more particularly to seat constructions having soft yielding resilient cushion material for chairs and the like and so constructed and arranged to be comfortable when in use.

This application is a continuation-in-part of my co-pending application, Serial No. 748,957, filed May 19, 1947, which has become Patent No. 2,571,209, granted October 16, 1951.

Heretofore in seat construction and cushions therefor, the greatest weight of a person supported in seated position, on yielding cushioning material, is on the area somewhat to the rear of the middle line of the seat tending to cause deflection of cushioning material in that area and flow of said material to areas under other portions of the body increasing the pressure thereon with resulting discomfort to the user. In cushions of the usual construction, the cushion material has been of substantially even thickness throughout the entire area of the cushion and no particular part of the body given preference as to resiliency and supporting area.

Most cushion seats are more padded at the rear thereof in order to receive the base of the pelvis and bones at the base of the spine without providing relief of pressure on other parts of the body particularly of the male species.

It is the principal object of the present invention to eliminate these undesirable features in chairs and to provide a chair which will be comfortable and also minimize risk of harmful effects in use due to undue pressure on certain parts of the body; to provide a seat and cushion therefor arranged in such a manner to support the human body in a comfortable manner and prevent possible injurious effects upon the private part of the male species and eliminate pressure conditions upon the nerves, bone structure, and other parts of the body located adjacent the crotch area; to provide a device of this character having a seat plate having a recessed rear portion and forward sloping side portions to conform to the natural position of the lower extremity of the body; to provide a cushion for said seat plate having a substantially plane upper surface and a lower surface having an annular plane portion and a downwardly curved portion each generally conforming substantially to the respective portion of the seat plate.

Other objects of the present invention are to provide the seat plate with slightly saddle-shaped construction at the forward center thereof and the bottom tapering downwardly and backwardly providing a hollow cavity or recess portion; to provide a cushion for said seat made of foam latex, sponge rubber or other resilient material with a substantially plane upper face and the lower face substantially conforming to the surface of the seat plate; to provide recesses in the bottom of said cushion but not extending through the top thereof to form an area to accommodate flexibility of the foam latex cushion so that pressure of the body thereon will cause the material to "flow" to relieve pressure on that part of the body

2

adjacent the crotch area, particularly the pelvis bone and other private organs of the male species; to provide a cushion of this character which is made from cellular material with a longitudinal cut-away portion on the underneath side thereof and to provide a device of this character simple, economical to manufacture, and efficient in operation.

In accomplishing these and other objects of the invention, I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a bottom plan view of a cushion for a chair embodying the features of my invention.

Fig. 2 is a bottom perspective view of the seat cushion particularly illustrating the downwardly curved central portion and the cut-away relieved areas for the cushion.

Fig. 3 is a top perspective view of the seat plate construction.

Fig. 4 is a longitudinal cross-sectional view of the assembled device taken on the line 4—4, Fig. 5.

Fig. 5 is a transverse cross-sectional view of the assembled device taken on the line 5—5, Fig. 4.

Fig. 6 is a bottom plan view showing a modified form of the cushion.

Fig. 7 is a perspective view of the bottom of the cushion, particularly illustrating the downwardly curved central portion and longitudinal groove therein.

Fig. 8 is a top perspective view of the seat plate.

Fig. 9 is a longitudinal sectional view of the assembled modified form of device taken on the line 9—9, Fig. 10.

Fig. 10 is a transverse sectional view through the assembled device taken on the line 10—10, Fig. 9.

Fig. 11 is an enlarged fragmentary view particularly illustrating the hooks around the bottom of the seat.

Referring more in detail to the drawings:

1 designates a chair seat embodying the features of my invention comprising a seat plate or bottom 2, cushion 3, and cover 4. The cushion is preferably made of latex foam or other suitable material although it will be understood that any suitable resilient and yieldable material such as sponge rubber composition may be employed.

I have shown in Figs. 4 and 5 the upper portion of the cushion crowned slightly from either side thereof, as indicated at 5, but otherwise is of substantially plane surface. The sides are tapered inwardly towards the rear end as indicated at 6, and the corners and rear end are rounded as indicated at 7 and 8, respectively. The front corners also are rounded as indicated at 9, conforming substantially to the shape of an ordinary chair seat.

The undersurface 10 of the cushion 3 is cut away or relieved forming a centrally arranged channel or slot 11 extending from a point adjacent the front edge 12 to a point adjacent the rear rounded edge 8 of the cushion. As best illustrated in Fig. 4, the depth of the slot is less than the thickness of the cushion so that the top surface of the cushion is unbroken. The front end of the channel 11 terminates in a substantially circular well or enlarged cavity 13 in order to provide greater relief of pressure to the forward portion of the crotch area and particularly the private organs of the male species when the cushion is in use. The undersurface of the cushion is provided with a plurality of spaced apart openings or wells 14 which also terminate short of the top surface of the cushion to increase the flexibility of the cushion and provide fluidity, effectiveness and comfort of the cushion when in use.

The central portion of the cushion is thickened by downwardly curved portions 15 and 16 on the bottom thereof as illustrated in Figs. 2 and 4. There is a sub-

3

stantially plane surface 17 around the outer periphery of the bottom of the cushion as best illustrated in Fig. 2 and the thickened portion tapered or curved upwardly at the rear and side thereof as illustrated at 18, 19, and 20, respectively, and the thickened portion is tapered forwardly so that it narrows as indicated at 21 (Fig. 4). This thickest portion of the cushion accommodates the fleshy part or buttocks of the anatomy between the pelvis bone and the side and provides a greater flexibility and fluidity of the cushion due to the channel 11 and the plurality of openings 14 in the cushion.

The seat plate 2 is preferably comprised of metal, although any relatively stiff material may be employed. The central rear portion of the plate is depressed or recessed as indicated at 22, and this recess portion tapers to form a more shallow portion toward the front 23 of the plate. The plate is provided around the periphery 24 thereof with a substantially plane surface 25 and at substantially the forward center thereof is provided a raised or saddle portion 26 so as to form the recess or pocket-like formation for the lower extremity or buttocks portion of the user. The plane surface 17 around the lower periphery of the cushion engages on the plane surface 25 of the seat plate and the thickened portions 15 and 16 of the cushion engage in the recess portions 22 of the seat plate as best illustrated in Fig. 4.

Hooks 27 are provided around the bottom of the seat member by striking out portions of such seat as indicated at 28, to accommodate a fastening member (not shown) for a cover 4 for the cushion and seat when in assembled relation. The seat plate 2 is provided in the recess portions thereof with a plurality of openings 30 which align with numerous of the openings 14 in the cushion for relief of air when pressure is provided on the cushion in use.

When the device is in use the occupant's weight upon the cushion will cause the latex foam of the cushion to deform and flow laterally and longitudinally due to the slot and cell construction without any tendency of the material to bunch and flow upwardly in the essential portion of the cushion as is the usual custom with other types of cushions, thus relieving unnatural and uncomfortable pressure conditions in the crotch area of the user.

Figs. 6 to 10, inclusive, disclose a modified form of the invention wherein a cushion of less thickness is provided. The seat plate 2 is of substantially identical construction as in the preferred form.

31 designates a cushion having slightly inwardly and backwardly tapered sides 32 and 33, a front edge 34 and rounded rear corners 35 and front corners 36. The top 37 of the cushion is unbroken and slightly crowned near the center thereof as indicated at 38, providing a substantially plane surface and the underneath side of the cushion is provided with thickened portions 39 and 40, thickest at the rear portions and tapering upwardly to the plane surface 41 of the bottom of the cushion and then tapering to a thinness as indicated at 42, towards the forward edge 34.

The undersurface of the cushion is relieved or cut-away to form a centrally arranged channel or slot 43 extending from a point adjacent the front edge 34 to a point adjacent the rear edge 45 of the cushion. The depth of the slot is less than the thickness of the cushion so that the top surface of the cushion is unbroken.

The seat plate 2 is provided with a recess portion 46 deeper at the back, as best illustrated in Figs. 8 and 9, and tapering forwardly toward the front edge 47 of the seat as best illustrated in Fig. 9. The front portion of the seat is also provided with a raised or saddle portion 48 as in the preferred form of the invention.

The recess portion 46 is adapted to accommodate the

4

thickened portion 39 and 40 on the underneath side of the cushion 31 to provide a greater flexibility and fluidity of the cushion. The cushion is provided with a covering 49 and is secured to hooks 50 on the lower portion of the seat by fastening means (not shown) as in the preferred form of the invention.

The form of the invention shown in Figs. 6 to 10, inclusive, is preferably made to accommodate lighter construction chairs and the cushion part is not as thick as in the preferred form. The construction, however, allows lateral and longitudinal deflection or flow of the cushion material without tendency of the material to bunch up in the central portion of the cushion, as also set out in the preferred form.

It will be obvious from the foregoing that I have provided an improved seat plate and cushion thereof of confirmation conforming to the contour of the buttocks or lower extremity of the user and which will give relief from pressure upon the part of the anatomy most sensitive to sitting on the cushion.

What I claim and desire to secure by Letters Patent is:

As an article of manufacture, a chair seat cushion comprising, a body of latex foam corresponding in size and shape with the seat of a chair having a flat surface around the periphery thereof and spaced depressed portions at the front of the seat tapered toward the back of the seat and converging into a single depressed portion at the back leaving a raised portion near its front extending longitudinally of the seat, the upper surface of said body being substantially flat and unbroken, the undersurface of the body having a plane surface for engaging the plane surface around the periphery of the seat and spaced thickened portions near the front and extended into a single thickened portion at the back to conform to the depressed portion of the seat, the undersurface of said body being provided with a longitudinal cutaway portion defining an open slot arranged midway between the side edges of the body, said slot throughout its length extending from the undersurface of the body upwardly but terminating short of the upper surface of the body, said cushion having a plurality of cavities extending upwardly on each side of said slot from the undersurface of the cushion and terminating short of the upper surface of the cushion to leave a body portion of substantially uniform thickness between the upper surface of the body and the top of the slot and the cavities, said cavities being arranged in rows both laterally and longitudinally to space them a substantially equal distance apart over the seating surface of the body, and said slot terminating short of the front and rear edges of the body and being provided with an enlarged well at its front end, the slot and cavities providing a substantial area allowing lateral and longitudinal flow of the latex foam to prevent bunching and upward flow of the latex foam in the central portion of the body under the pressures created by a person seated on the cushion.

References Cited in the file of this patent

UNITED STATES PATENTS

1,823,569	Mellano	Sept. 15, 1931
2,056,767	Blath	Oct. 6, 1936
2,159,520	Chapman	May 23, 1939
2,232,646	Stone et al.	Feb. 18, 1941
2,237,475	Church	Apr. 8, 1941
2,263,209	Gilkison	Nov. 18, 1941
2,314,046	Kalter	Mar. 16, 1943
2,343,996	Perry	Mar. 14, 1944
2,384,713	Varma	Sept. 11, 1945
2,552,039	Flogaus	May 8, 1951
2,571,209	Cramer	Oct. 16, 1951