June 19, 1951 L. FOX 2,557,269

POSTURE SEATING DEVICE

Filed March 17, 1950

FIG. 1

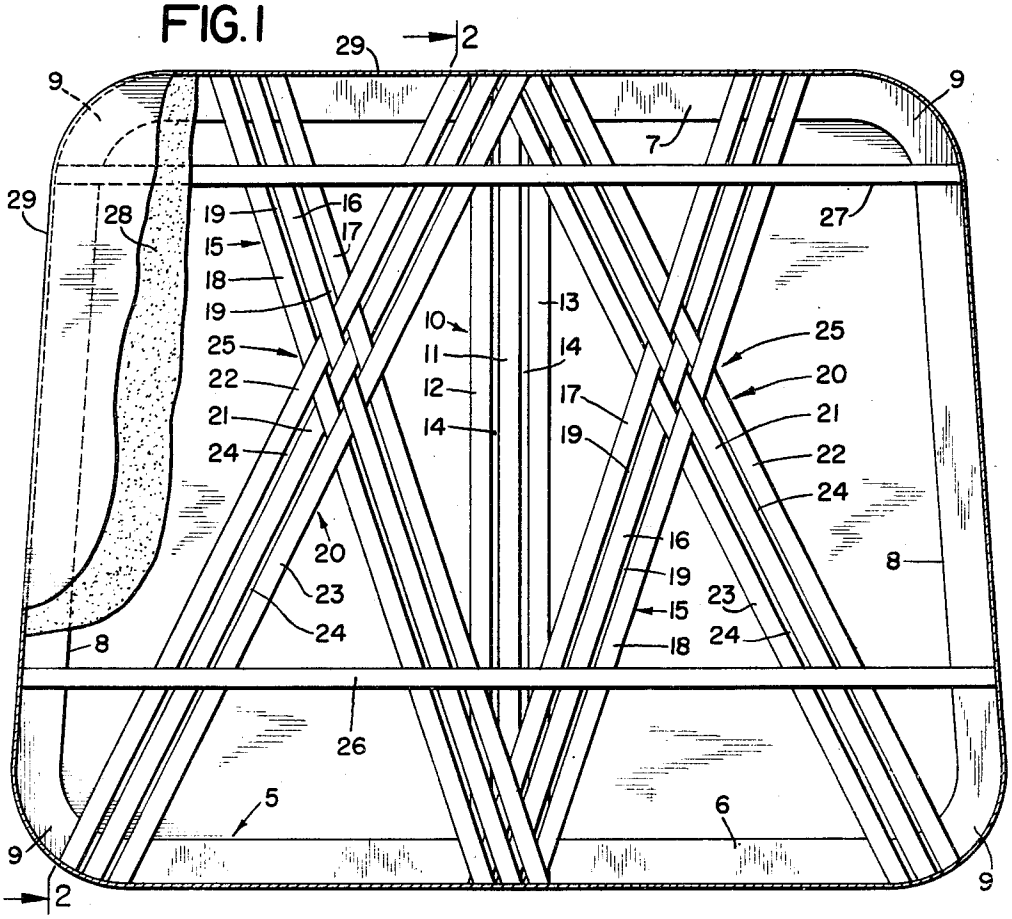


FIG. 2

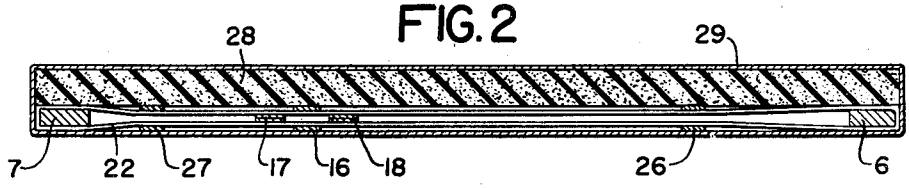
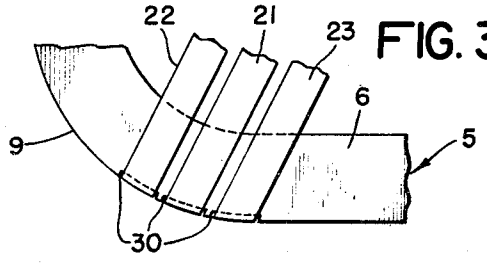


FIG. 3



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POSTURE SEATING DEVICE

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11 Claims. (Cl. 155—182)

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This invention relates to seating equipment, and more particularly to a device adapted to induce proper posture in seated individuals.

A device constructed in accordance with this invention may be used in various locales. Experience has demonstrated that the device may be advantageously used with conventional items of seating equipment, such as automobile seats, easy chairs, overstuffed furniture, and the like, and when so used, give the occupant anatomical support comparable to that obtainable by the use of a well-constructed posture chair.

The parts of the device are arranged to support the pelvis of an occupant in a manner that the spinal column is brought in proper position for attaining correct posture. Most of the weight of body organs associated with the spine is transferred from the spine to the pelvis. The device prevents sagging or tilting of the pelvis and assures proper relationship between the pelvis and the spinal column.

A primary object of the invention is to provide a posture seating device having improved characteristics.

Another object of the invention is to provide a device of the character indicated that is adapted to be used with conventional items of seating equipment and induce correct sitting posture.

A further object of the invention is to provide a lightweight, readily portable posture seating device that is simple and compact in construction and reasonable in manufacturing cost.

A still further object of the invention is to provide a seating device that is capable of performing its intended functions in an efficient and trouble-free manner.

To the end that the foregoing objects may be attained, a seating device constructed in accordance with the invention preferably comprises a trapezoidal frame made of flat metallic stock and consisting of parallel front and rear rails and a pair of converging side rails. Extending from the front rail to the rear rail is a plurality of flexible elastic members that are stressed in tension. These members may be in the nature of strips or may be bands that circumscribe the frame. The elastic members are so arranged as to intersect or cross at two regions within the confines of the frame. These regions are both in the rearward portion of the opening defined by the frame and are located to opposite sides of the frame center line that extends across the front and rear rails. The device includes other elastic members extending between the front and rear

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rails and between the side rails, as will be described further along herein.

Superposed on the frame and the various elastic members is a pad of a resilient deformable material that is coextensive with the frame. The foregoing parts are all encased in a cover of a suitable upholstery material.

The enumerated objects, together with the advantages attainable by the practice of the invention will be readily understood by persons skilled in the art upon reference to the following detailed description, taken in conjunction with the accompanying drawing that respectively describe and illustrate a preferred form of the invention.

In the drawing:

Figure 1 is a top plan view of a posture seating device constructed in accordance with the invention, parts being broken away for better illustration of other parts;

Figure 2 is a view on a reduced scale taken along line 2—2 of Figure 1; and

Figure 3 is an enlarged fragmentary view corresponding to the lower left-hand portion of Figure 1 and illustrating a modification of the construction shown in Figure 1.

Referring now to the drawing wherein like reference numerals denote corresponding parts throughout the several views, and more particularly to Figure 1, a trapezoidal frame 5 consists of parallel front and rear rails 6 and 7, respectively, and a pair of converging side rails 8. The frame may be made of any suitable material. I find that a frame made of flat metallic stock approximately 5/8 inch wide by 1/8 inch thick, rounded at the corners as indicated at 9, is well suited for the purposes of the invention.

Circumscribing the frame in a transverse direction, that is, from the forward edge of front rail 6 to the rearward edge of rear rail 7, is a set of bands generally indicated by numeral 10 and consisting of a central band 11 positioned midway between the side rails, and bands 12 and 13 located to opposite sides of and spaced from central band 11, as indicated at 14. Each band comprises an elastic material, such as rubber, that is stressed in tension when in the illustrated position. Also circumscribing the frame and engaging the front and rear rails are sets of bands 15 and 20, each band of which likewise comprises an elastic material that is stressed in tension when positioned on the frame.

Each set of bands 15 consists of a central band 16 and bands 17 and 18 spaced from band 16, as indicated at 19. One set of bands 15 extends from the central portion of front rail 6

to a portion of rear rail 7 intermediate the center of the rear rail and one end thereof, while the other set of bands 15 extends from the central potion of front rail 6 to a portion of the rear rail intermediate the center of the rear rail and the other end thereof.

Similarly, each set of bands 20 consists of a central band 21 and bands 22 and 23 spaced from band 21, as indicated at 24. One set of bands 20 extends from the central portion of the rear rail to the portion of the front rail proximate the juncture of the front rail and one of the side rails. The other set of bands 20 extends from the central portion of the rear rail to the portion of the front rail proximate its juncture with the other side rail.

Each set of bands 15 crosses and is arranged in interwoven or interlaced relationship with a corresponding set of bands 20 in an area or region denoted by numeral 25.

While I prefer to employ band sets 10, 15 and 20, the individual bands of which are arranged with respect to other bands as illustrated and described, it is to be borne in mind that a single relatively wide band may be used in lieu of corresponding sets of relatively narrow bands.

A pair of elastic bands 26 and 27, stressed in tension, circumscribes the frame and engages the side rails. These bands are spaced from the front and rear rails and from each other. Bands 26 and 27 contribute to the support afforded by my seating device and prevent undesirable twisting of individual bands of the various sets when the device is in use. Superposed on the frame and the various bands is a pad 28 of a resilient deformable material that may comprise foam rubber, sponge rubber, or the like. The pad is coextensive with the frame and affords added comfort to the user. The frame, the bands and the pad are all encased in a cover 29, made of a suitable upholstery material or the like, as best shown in Figure 2.

It is within the purview of the invention to provide peripheral notches 30 in the frame for receiving corresponding bands, as indicated in the modification of the invention shown in Figure 3. Such notches form the dual functions of, first, indicating the peripheral areas of engagement of the various bands with the frame at the time of assembly, and second, preventing creeping of the bands with respect to the frame, thereby insuring maintenance of the bands in the desired locations with respect to the frame.

Instead of using bands, one may, of course, employ one or more elastic strip members, stressed in tension and arranged with respect to the frame in the manner of the bands shown in Figure 1. Such strips may be anchored or otherwise secured to the frame in any manner known to the art. I prefer to use the bands as they may be readily positioned at desired locations with respect to the frame.

In use, the seating device of this invention may be placed on the cushion of an overstuffed chair. An individual, who then seats himself on the device, is afforded proper support by virtue of the arrangement of the band elements. The ischial tuberosites of the pelvis will be disposed directly above areas or regions 25 of the interwoven bands, and the under side of the thighs will normally extend along the portions of band sets 20 intermediate regions 25 and the front edge of the frame. The weight of the body above the pelvis is transmitted by way of the ischial tuberosites to areas 25, and the spinal column is induced to assume the proper position for correct posture. The coccyx is free and not subjected to pressure. As a result, the various organs within the body are maintained in proper position and fatigue is minimized.

While the form of the invention illustrated in the drawing and described above contemplates a seating device for use by only one individual, it should be borne in mind that it is within the purview of the invention to construct the seating device so as to accommodate two or more individuals simultaneously. In such a case, the trapezoidal frame employed may be similar to the one shown but should be of sufficient length to receive multiple sets of bands, the bands of each set preferably being arranged as shown and the sets being disposed in side-by-side relation along the frame. For example, a seating device for use in an automobile may include three sets of bands whereby to accommodate and afford proper support to three occupants at the same time.

From the foregoing, it is believed that the construction, utility and advantages of the present invention will be readily comprehended by persons skilled in the art. It is to be clearly understood, however, that various changes in the device set forth above may be made without departing from the scope of the invention, it being intended that all matter contained in the description or shown in the drawing shall be interpreted as illustrative only and not in a limiting sense.

I claim:

1. In a seating device of the character described, a frame comprising a front rail and a rear rail spaced from the front rail, a pair of elastic members engaging both rails, said members extending from the central portion of the front rail to portions of the rear rail that are spaced longitudinally and located to opposite sides of the center thereof, a pair of elastic elements engaging both rails, said elements extending from the central portion of the rear rail to portions of the front rail that are spaced longitudinally and located to opposite sides of the center thereof, each member crossing a corresponding element in a region intermediate the rails.

2. In a seating device of the character described, a trapezoidal frame comprising parallel front and rear rails and converging side rails, at least one pair of flexible distortable members stressed in tension and engaging the front and rear rails, said members extending from the central portion of the front rail to portions of the rear rail that are spaced longitudinally and located to opposite sides of the center thereof, at least one pair of flexible distortable elements stressed in tension and engaging the front and rear rails, said elements extending from the central portion of the rear rail to portions of the front rail that are spaced longitudinally and located to opposite sides of the center thereof, each member crossing a corresponding element in a region within the confines of the frame.

3. A seating device in accordance with claim 2 including at least one elastic member stressed in tension and engaging the front and rear rails, said last-mentioned member extending from the central portion of the front rail to the central portion of the rear rail.

4. A seating device in accordance with claim 3 including a second pair of elastic members stressed in tension and engaging the side rails,

each member of said second pair being disposed above said members and elements and spaced from the front and rear rails and from each other.

5. In a seating device of the character described, a frame comprising a front rail and a rear rail spaced from the front rail, a pair of elastic band members circumscribing the frame and engaging both rails, said band members extending from the central portion of the front rail to portions of the rear rail that are spaced longitudinally and located to opposite sides of the center thereof, and a pair of elastic band elements circumscribing the frame and engaging both rails, said band elements extending from the central portion of the rear rail to portions of the front rail that are spaced longitudinally and located to opposite sides of the center thereof, each band member crossing a corresponding band element in a region intermediate the rails.

6. In a seating device of the character described, a trapezoidal frame comprising parallel front and rear rails and converging side rails, said frame having a plurality of spaced peripheral notches formed therein, at least one pair of elastic band members circumscribing the frame and registering with corresponding notches in the front and rear rails, said band members being stressed in tension and extending from the central portion of the front rail to portions of the rear rail that are spaced longitudinally and located to opposite sides of the center thereof, and at least a pair of elastic band elements circumscribing the frame and registering with corresponding notches in the front and rear rails, said band elements being stressed in tension and extending from the central portion of the rear rail to portions of the front rail that are spaced longitudinally and located to opposite sides of the center thereof, each band member crossing a corresponding band element in a region intermediate the rails.

7. A seating device in accordance with claim 6 including at least one elastic band member circumscribing the frame and engaging the front and rear rails, said last-mentioned member being stressed in tension and extending from the central portion of the front rail to the central portion of the rear rail, and a second pair of elastic band members stressed in tension, circumscribing the frame and engaging the side rails, each member of said second pair being spaced from the front and rear rails and from each other.

8. In a seating device of the character described, a trapezoidal frame comprising parallel front and rear rails and converging side rails, a plurality of first band members and a plurality of second band members circumscribing the frame and engaging the front and rear rails, said first band members extending from the central portion of the front rail to a portion of the rear rail intermediate the center of the rear rail and one of the side rails, said second band members extending from the central portion of the front rail to a portion of the rear rail intermediate the center of the rear rail and the other side rail, a plurality of first band elements and a plurality of second band elements circumscribing the frame and engaging the front and rear rails, said first band elements extending from the central portion of the rear rail to the portion of the front rail proximate the juncture of the front rail and said one of the side rails, said second band elements extending from the central portion of the rear rail to the portion of the front rail proximate the juncture of the front rail and said other side rail, each of the band elements being elastic and stressed in tension, the first and second band members being respectively arranged in crossing and interwoven relationship with the first and second band elements.

9. A seating device in accordance with claim 8 including a third plurality of elastic band members stressed in tension, circumscribing the frame and engaging the central portions of the front and rear rails, and a pair of elastic band members stressed in tension, circumscribing the frame and engaging the side rails, each member of said pair being spaced from the front and rear rails and from each other.

10. A seating device in accordance with claim 9 including a pad comprising a resilient deformable material, said pad being superposed on the frame, the band members and the band elements, and being substantially coextensive with the frame.

11. In a seating device of the character described, a frame comprising a front rail and a rear rail spaced from the front rail, a pair of elastic members engaging both rails, said members extending from a portion of the front rail intermediate its ends to portions of the rear rail that are spaced longitudinally and located to opposite sides of said portion of the front rail, a pair of elastic elements engaging both rails, said elements extending from a portion of the rear rail intermediate said portions of the rear rail to portions of the front rail that are spaced longitudinally and located to opposite sides of said portion of the front rail, each member crossing a corresponding element in a region intermediate the rails.

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No references cited.