

[54] SEATS

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[56]

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[57]

ABSTRACT

The present invention provides a bucket seat, comprising a seat portion, a back rest portion, a hinge pivotally connecting the seat portion to the back portion, and adjuster means connected to the back rest portion for continuous adjustment of the angle of tilt of said back rest portion relative to the seat portion.

6 Claims, 4 Drawing Figures

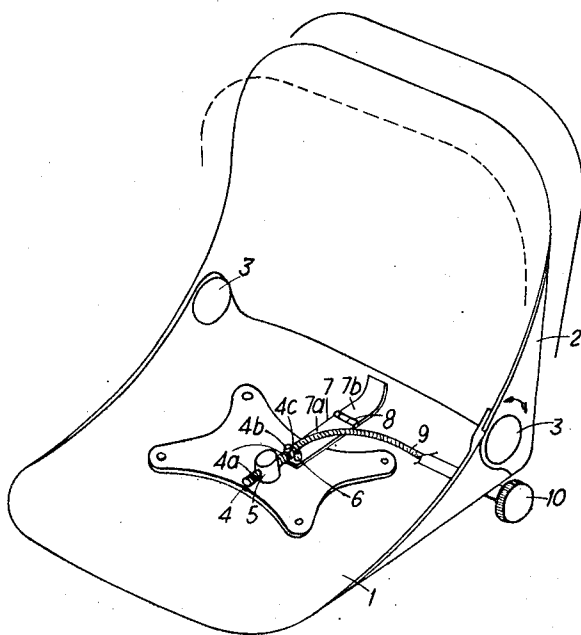


Fig. 1.

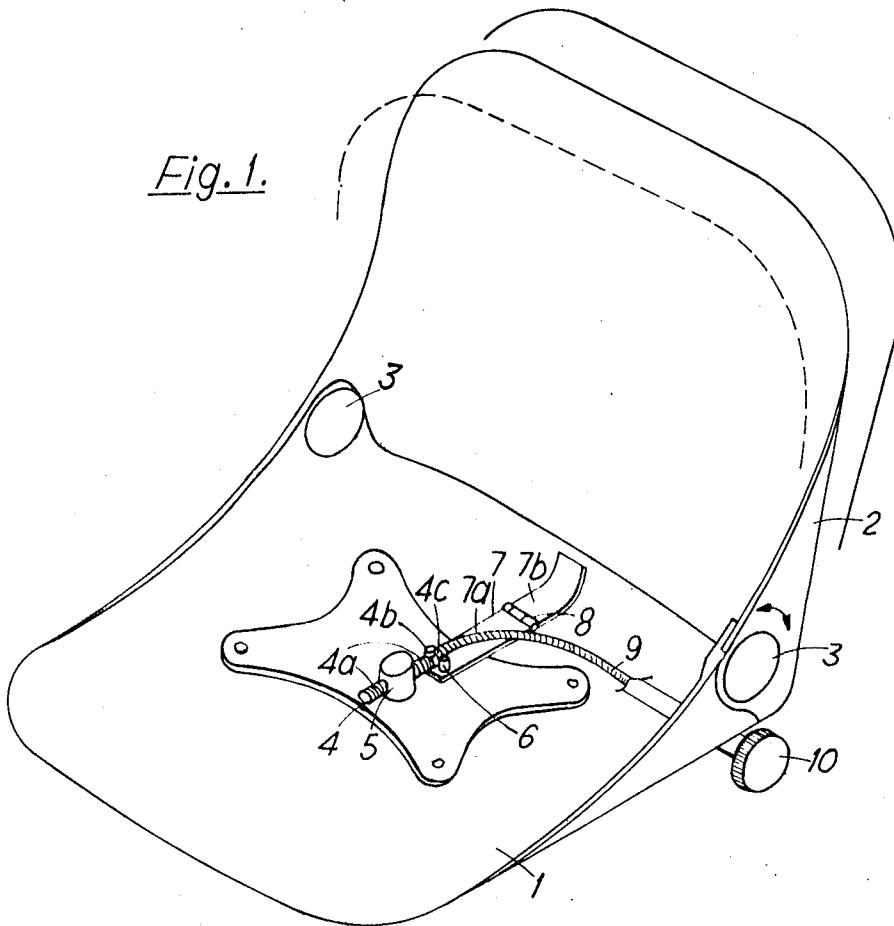


Fig. 2.

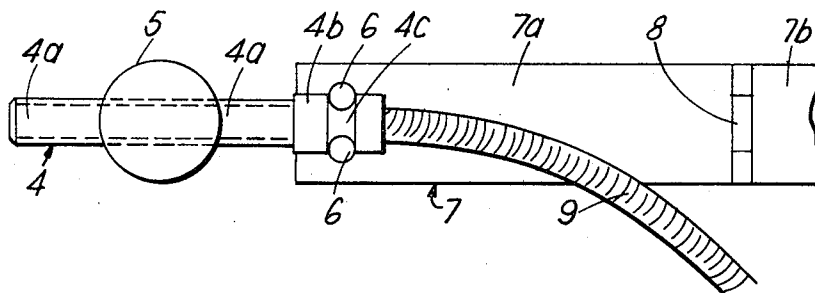


Fig. 3.

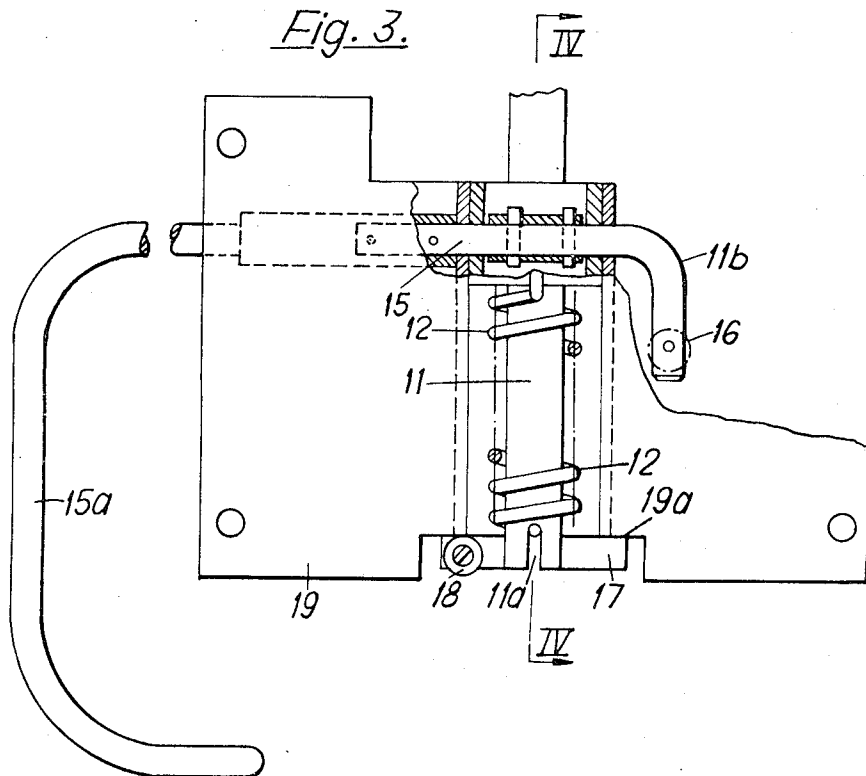
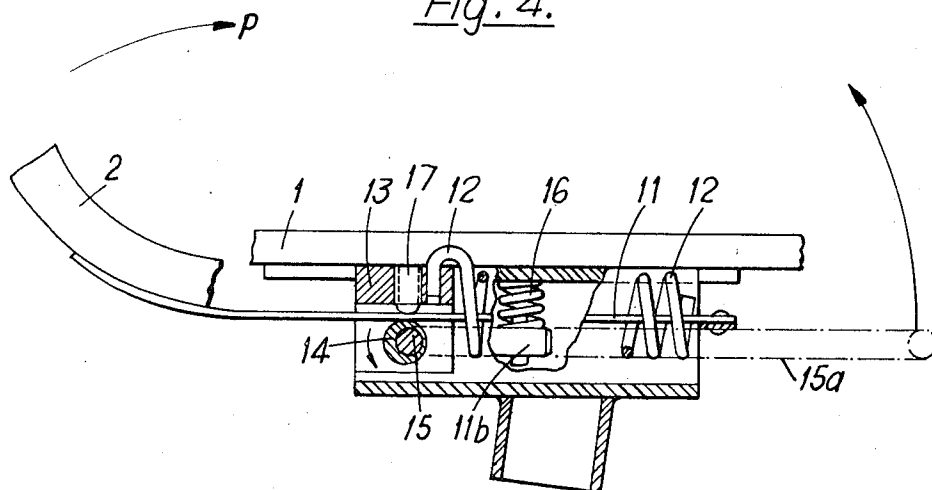


Fig. 4.



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SEATS

The invention relates to bucket seats.

According to the invention there is provided a bucket seat having adjuster means for continuous adjustment of the angle of tilt of the back rest portion of the seat.

According to the invention there is also provided a bucket seat, comprising a dished seat portion, a dished back rest portion hinged to the seat portion, a bendable member extending transverse to the hinge axis and attached at one end to one of the said portions, and adjusting means manually operable to produce relative movement between the member and the other said portion, whereby to cause tilting of the back rest portion relative to the seat portion.

A seat embodying the invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings in which:

FIG. 1 is an isometric view of the seat;

FIG. 2 is a plan view of part of the back rest operating mechanism of the seat of FIG. 1;

FIG. 3 is a plan view of a modified form of back rest operating mechanism, the seat portion and back rest being shown only in part, for greater clarity; and

FIG. 4 is a vertical section along line IV—IV in FIG. 3.

Referring to FIGS. 1 and 2, the bucket seat consists of a seat portion 1 and a back rest 2, connected together by hinges 3, the bottom edge of the back rest passing under the rear edge of the seat portion 1.

An adjuster device for the back rest 2 consists of a threaded spindle 4 and a nut 5, the latter being rigidly fixed to the seat portion 1.

As can be seen from FIG. 2, a threaded portion 4a of the spindle 4 has an unthreaded portion 4b, which includes a circumferentially extending groove 4c. Two pins 6, rigidly fixed to a member by which the back rest 2 is operated, engage groove 4c. The actuating member in the illustrated embodiment consists of a strip 7 having part 7a and 7b which are joined by a hinged joint at 8 (FIG. 1).

One end of part 7b is attached to the rear face of the back rest 2.

The two pins 6 positively locate in and frictionally engage the groove 4c. To prevent this connection from being broken, the tops of the two pins 6 may be bridged.

The threaded spindle 4 can be rotated via a flexible shaft 9 by rotation of a knob 10 at one end of the shaft 9.

The mode of operation of the illustrated embodiment of bucket seat is as follows.

When the user wishes to tip the back rest in one direction or the other, the knob 10 is rotated in the appropriate direction, this rotates the flexible shaft 9 and hence the threaded spindle 4. Rotary motion of the threaded spindle 4 is converted by the pins 6 into a translation of the strip 7. Since part 7b of the strip 7 is rigidly attached to the back rest 2, and hinges 3 are disposed in front of this point of attachment, a turning moment is applied to the back rest 2 which tips.

Allowance for the movement of the back rest as it is tipped is made by the hinge 8.

FIGS. 3 and 4 show another form of back rest adjuster mechanism. For greater clarity, only part of the seat portion and back rest is shown in these drawings.

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It is important to note that the bucket seat shown in FIGS. 3 and 4 is the same as that shown in FIG. 1, apart from the back rest adjuster mechanism. The same applies to the hinges 3 and the manner in which the bottom edge of the back rest passes below the seat portion 1.

In this form, the back rest adjuster mechanism includes a flat or leaf spring 11, acted upon by a tension spring 12. Flat spring 11 lies longitudinally of the seat (that is, in the same direction as strip 7 in FIG. 1). One end of tension spring 12 is anchored in a slot 11a in the flat spring 11, while the other end of spring 12 is held in a cross bracket 13.

The flat spring 11 can be gripped by a clamp device comprising an eccentric 14 operated by a lever 15. The portion of the lever 15 indicated at 15a is substantially parallel to one side of the seat 1. Movement of the portion 15a of lever 15 is in a vertical plane parallel to that side of the seat.

The other end 11b of the lever 15 is acted upon by a compression spring 16 (FIG. 4) which urges the lever 15, and hence also the eccentric 14, into a locked position.

The clamp device also has a stop 17 which acts in conjunction with eccentric 14.

The mode of operation is as follows:

When the back rest 2 is to be tipped forwards, in the direction of the arrow P in FIG. 4, the lever 15 is gripped by the end 15a and momentarily rotated upwards in the direction of the arrow shown at the right hand side of FIG. 4. This breaks the grip of the clamp device on the flat spring 11, so that tension in the tension spring 12 can act on the flat spring 11. The spring 11 can then move to the left in FIG. 4. This movement is transmitted to the back rest 2 because one end of the spring 11 is attached to the back rest 2. Since the hinges 3 are in front of the point of attachment (FIG. 1), a turning moment is applied to the back rest 2 which tilts forwardly about hinges 3. Connected to one end of the flat spring 11 by a carrier 17 is a stop 18 which may, for example, be a rubber buffer, for limiting the forward tilting action of the back rest by bearing against one edge 19a of a plate 19 attached to the seat portion 1.

When the lever 15 is released, it is moved by the compression spring 16 to the position illustrated in which the clamp device is in the locked position. Rotation of the back rest is then also brought to a halt.

Should it be desired to tilt the back rest 2 in the opposite direction, the end 15a of the lever 15 is raised, that is in the direction of the arrow in FIG. 4, so as to move the clamp device to the release position. On pushing the top edge of the back rest 2 backwards, the resultant turning moment causes the flat spring 11 to be moved forwards against the spring 12, which is then placed under tension. The back rest 2 is then locked in the required position when the end 15a of the lever 15 is released. The lever 15 thereupon is rotated by the compression spring 16 to the position in which the clamp device is in the locked position.

The described back rest adjuster mechanisms have comparatively few parts which are little exposed to wear. The mechanisms occupy so little room that they can readily be accommodated between the seat portion of the bucket seat and associated upholstery and they are outwardly unobtrusive.

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I claim:

1. A bucket seat, comprising
 - a seat portion,
 - a back rest portion,
 - a hinge pivotally connecting the seat portion to the back portion, and
 - adjuster means connected to the back rest portion for continuous adjustment of the angle of tilt of said back rest portion relative to the seat portion, said adjuster means including
 - a flat spring joined at one end to the back rest portion,
 - a tension spring mounted to act on the flat spring, and
 - a clamp device mounted to releasably clamp the flat spring, actuation of the clamp device allowing the tension spring to act on the flat spring and tilt the back rest portion relative to the seat portion.
2. A bucket seat as claimed in claim 1, in which the clamp device comprises
 - an eccentric,
 - an associated stop, and
 - a lever for moving the eccentric.
3. A bucket seat as claimed in claim 2, having a compression spring, one end of the lever cooperating with

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the compression spring which urges the lever and the eccentric into a position in which the eccentric locks the flat spring against the said stop.

4. A bucket seat as claimed in claim 1, having a stop mounted to limit forward tilting of the seat back rest.

5. A bucket seat, comprising

a dished seat portion,
a dished back rest portion hinged to the seat portion,
a bendable member extending transverse to the hinge axis and attached at one end to one of the said portions, and

adjusting means manually operable to produce relative movement between the member and the other said portion, whereby to cause tilting of the back rest portion relative to the seat portion, said adjusting means comprising spring means acting between the member and the said other portion of the seat, and releasable clamping means for releasably clamping the member and the said other portion of the seat against the action of the seat.

6. A seat according to claim 5, in which the bendable member is a leaf spring.

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