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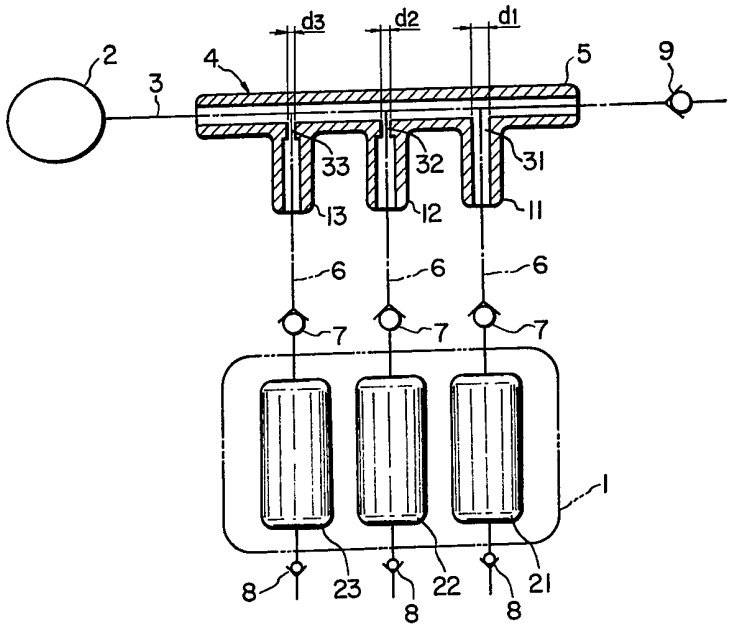
(54) **Inflatable supports**

(57) An automobile seat back comprises inflatable bags 21, 22, 23, a branched pipe 4 leading from a pump 2, pipe branches 31, 32, 33 to the bags being of different internal diameter, check valves 7 being provided upstream and relief valves 8 downstream of each bag. After inflation, the bags 21,22,23 are individually deflated by operation of the corresponding relief valve 8 to provide the desired contour.

FIG. 1



GB 2 092 439 A

FIG. 1

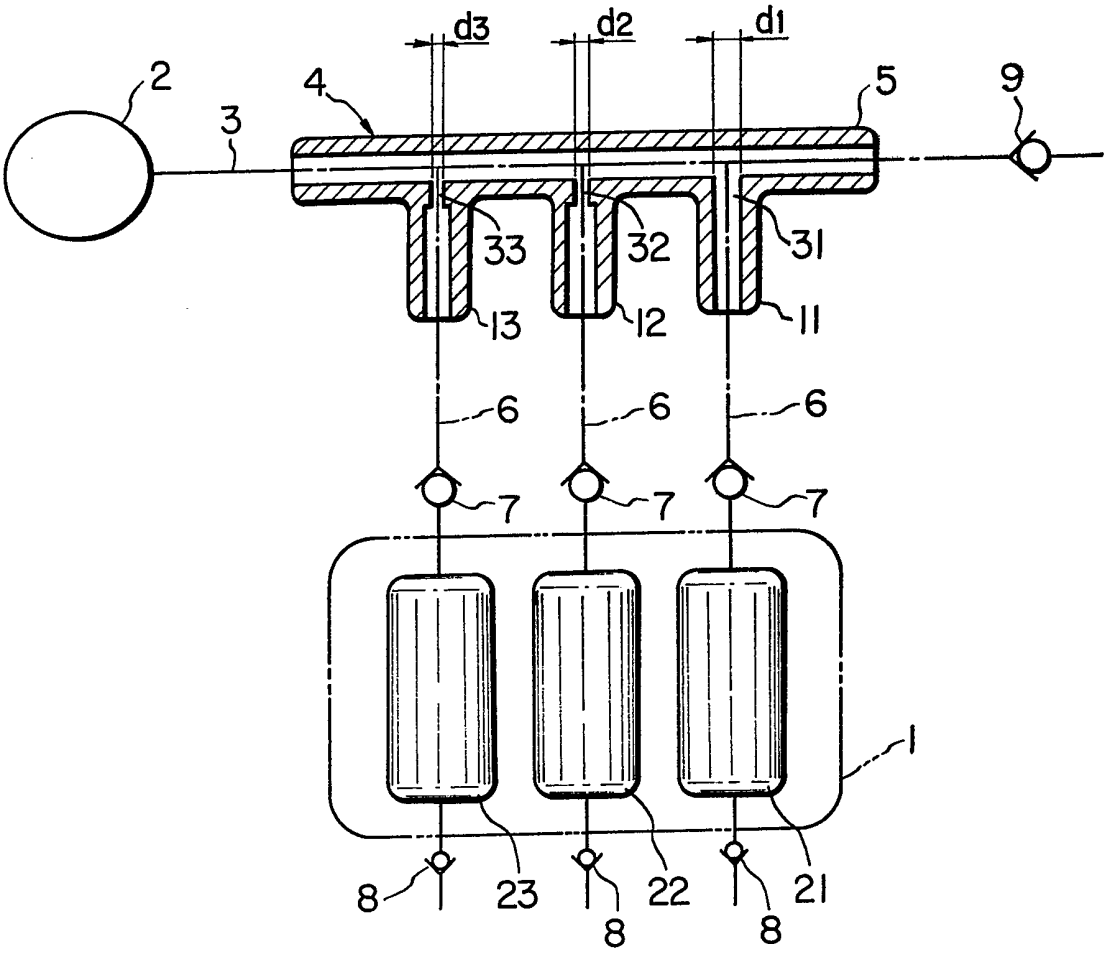


FIG. 2a

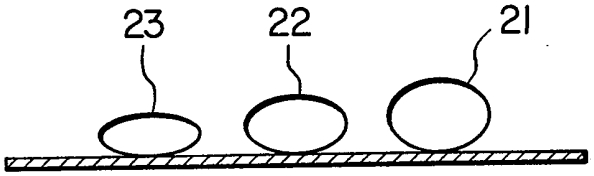


FIG. 2b

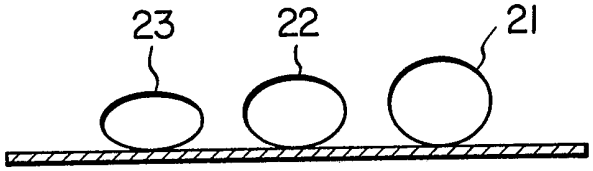
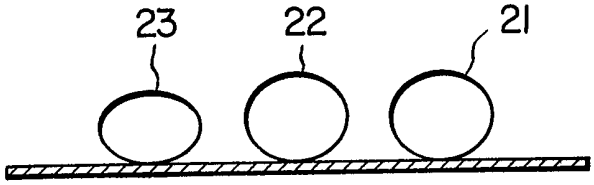


FIG. 2c



SPECIFICATION

Inflatable supports

The invention relates to inflatable supports for the human body, or parts thereof, and is particularly but not exclusively concerned with automobile seat backs, beds and mattresses.

The invention provides an inflatable support comprising a number of bags, a branched pipe through which the bags can be inflated, the pipe branches to the bags being of different internal diameter, a check valve between each bag and the corresponding pipe branch, and a relief valve for each bag.

The bags can be inflated through the branched pipe, that with the largest pipe branch diameter being inflated first, and then deflated to a desired size and pressure one by one by the manipulation of a relief valve for each bag so as to change the contour of the support to suit the user. Thus the desired contour can quickly and easily be attained. Three, four, five or more bags may be provided side by side with pipe branches so that their pressure may be adjusted in sequence.

Drawings

Figure 1 is a diagram of a bag system of a seat back according to the invention; and

Figure 2 shows schematically the sequence of inflation of bags in Figure 1.

In Figure 1, a seat back 1 suitable for use in an automobile. A pump 2 (generally of the squeeze type) is connected to a branched pipe 4 through a tube 3. Three pipe branches 11, 12 and 13 are connected to a main conduit 5 of the branched pipe 4, and to bags 21, 22 and 23 through tubes 6 and check valves 7. Ports 31, 32 and 33 having internal diameters d_1, d_2 and d_3 ($d_1 > d_2 > d_3$) connect the conduit 5 to the branch pipes 11, 12 and 13 respectively. The bags 21, 22 and 23 are of an elastic material (for example rubber). The bags 21, 22 and 23 are each provided with a relief valve 8 which may be operated by depressing a knob with a finger. A relief valve 9 on the main conduit 5 of the branched pipe 4 is arranged so as to release excessive pump discharge pressure and protect the bags.

In operation, the passenger or occupant on the seat squeezes the pump 2 to supply air in pulses to bags 21, 22 and 23 through the branched pipe 4 and check valves 7. The flow rates of the air through the pipe branches 11, 12 and 13 are different in accordance with the diameters d_1, d_2 and d_3 of the inlet ports 31, 32 and 33. The bags 21, 22 and 23 will successively become fully inflated in the order of the diameters of the ports to which bags 21, 22 and 23 are connected as shown in Figures 2a to 2c. All the bags 21, 22 and 23 begin to inflate as shown in Figure 2a. The bag 21 is fully inflated as shown in Figure 2b. The bag 22 is also fully inflated as shown in Figure 2c. When the occupant feels uncomfortable due to excessive inflation of any bag, he deflates that bag into a desired pressure or size by depressing the knob of the corresponding valve 8.

For instance, a bag in a position at the waist of the occupant is arranged so as to inflate first. This enables the occupant readily to position his body. The other bags which are of less importance to human engineering are subsequently inflated.

CLAIMS

1. An inflatable support comprising a number of bags, a branched pipe through which the bags can be inflated, the pipe branches to the bags being of different internal diameter, a check valve between each bag and the corresponding pipe branch, and a relief valve for each bag.

2. A support according to claim 1 comprising three bags.

3. An inflatable support as herein described with reference to the drawings.

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