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(54) Pedestal chair.

(57) A pedestal chair comprises a spindle (10) to which is rigidly attached a frame member (12). A seat chassis member (14) is pivotally mounted on the frame member (12) about a first transverse horizontal axis (16). At its forward end a back support stem (18) is pivotally mounted on the frame member (12) about a second transverse horizontal axis (20). The rear of the chassis member (14) is pivotally attached to the base support stem (18) about a third horizontal axis (22). An elastomeric block (24) urges the chassis member (14) to a forwardly tilted position (Figure 1), from which an occupant's weight tends to tilt the chassis member (14) rearwardly towards a rearwardly tilted position (Figure 2).

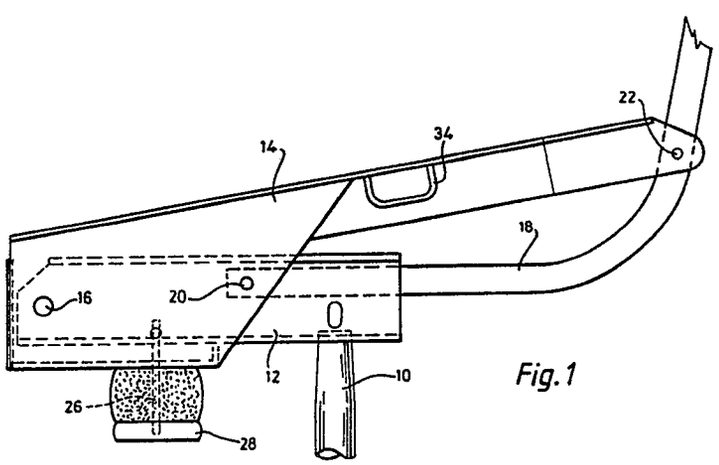

Fig. 1

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Pedestal Chair

Field of invention

This invention relates to pedestal chairs.

Summary of the invention

According to the invention a pedestal chair comprises a spindle, a frame member secured on the spindle, a seat chassis member pivotally mounted on the frame member about a first transverse horizontal axis, a back support stem pivotally mounted on the frame member about a second transverse horizontal axis, the first axis being disposed adjacent the front of the chair, the second axis being disposed behind the first axis, and the chassis member and back support stem extending rearwardly of the second axis and being pivotally interconnected about a third transverse horizontal axis disposed rearwardly of the second axis, and a spring acting between the frame member and the seat chassis member and urging the latter to a forwardly tilted position from which an occupant may tilt the chassis member backwardly about the first axis, with attendant rearward pivotal movement of the back support stem about the second axis, to an extent dependent on the occupant's weight and weight distribution.

This contrasts with known chairs which have linkages between the back support stem and the frame member and do not have in an equivalent structure the facility of rearward tilting of a chassis member (against spring bias) from a transverse front pivot axis, with attendant reclining movement of a back support stem.

The spring may be a compressible block of elastomeric material and its degree of compression may be adjustable in order to suit the occupant's weight.

Preferably, the second axis is nearer to the first axis than the third axis. The system then acts as a second order lever, the restraining force (provided by the spring) being intermediate the pivot (provided by the first axis) and the load (provided by the weight of the occupant).

The chassis of a chair according to the invention will now be described by way of example with reference to the accompanying drawings in which:

Figure 1 is a side view of the chassis in a position of forward tilt,

Figure 2 is a similar view in a position of rearward tilt,

Figure 3 is a plan view of the chassis, and

Figure 4 is a front view.

Referring to the drawings, the chair comprises a pedestal or spindle 10 on the upper end of which is rigidly secured a frame member 12. The frame member 12 is of channel section with out-turned flanges, as best shown in Figure 4. A seat chassis member 14 is pivotally mounted on the frame member 12 about a first transverse horizontal axis defined by a pivot pin 16. At its forward end, a back support stem 18 is pivotally mounted on the frame member 12 about a second horizontal transverse axis defined by a pin 20.

The back support stem 18 extends rearwardly, curving gently upwardly, to a third transverse horizontal axis (defined by pin 22) where the rear of the chassis member 14 is pivotally connected to the back support stem 18. The first, second and third axes are parallel, with the first axis being disposed adjacent the front of the chassis, the second axis being disposed rearwardly of the first axis and the third axis being disposed towards the rear of the chassis, with the second axis being nearer to the first axis than to the third axis.

A compressible block 24 of elastomeric material surrounds a rod 26, one end of which carries an end cap 28 and the other end of which passes through a hole in the base of the frame member 12 and is anchored by being threaded into a nut 30 (Figure 4). The block 24 of elastomeric material is located between the underside of the chassis member 14 and the cap 28. Rotation of the cap 28 alters the degree of compression of the block 24 and hence the spring force tending to restore the chair to the forward tilt position shown in Figure 1. The cap 28 may either be screw threaded on the rod 26 which is then fixed in the nut 30, or the cap 28 may be fixed on the rod 26 and the latter screw threaded in the nut 30.

When the chair is unoccupied the block 24 will urge the chassis member 14 to the forwardly tilted position and the back stem 18 to an upright position, as illustrated in Figure 1. In this limit position, the chassis member engages the underside of the frame member 12. When an occupant sits in the chair, the occupant's weight will tend to tilt the chassis member 14 rearwardly from the position shown in Figure 1 towards the position shown in Figure 2. Rearward tilting movement of the chassis member 14 about the pin 16 will be accompanied by corresponding rearward tilting of the back stem 18 about the pin 20, so that the back stem will automatically recline as the occupant moves his weight backwards. With the occupant's weight centrally distributed, the chair will assume a neutral position intermediate the forward tilt position of Figure 1 and the rearward tilt position of Figure 2. When the user leans forward the chassis member

14 and stem 18 will pivot forwardly and when the occupant leans back the chassis member 14 and stem 18 will pivot rearwardly. Maximum compression of the block 24 defines the limit positon of Figure 2.

The back support stem 18 will carry a chair back. The chassis member 14 has holes 32 for securing a seat base to the chassis member which also has oppositely extending projections 34 to which may be secured arms for the chair.

It will be appreciated that the three pivot axes have sufficient play to enable the chassis member 14 and back support stem 18 to undergo the limited range of pivotal movement between the limit positions illustrated in Figures 1 and 2.

Claims

1. A pedestal chair comprising a spindle, a frame member secured on the spindle, a seat chassis member pivotally mounted on the frame member about a first transverse horizontal axis, a back support stem pivotally mounted on the frame member about a second transverse horizontal axis, the first axis being disposed adjacent the front of the chair, the second axis being disposed behind the first axis, and the chassis member and back support stem extending rearwardly of the second axis and being pivotally interconnected about a third transverse horizontal axis disposed rearwardly of the second axis, and a spring acting between the frame member and the seat chassis member and urging the latter to a forwardly tilted position from which an occupant may tilt the chassis member backwardly about the first axis, with attendant rearward pivotal movement of the back support stem about the second axis, to an extent dependent on the occupant's weight and weight distribution.

2. A pedestal chair according to claim 1, wherein the spring is a compressible block of elastomeric material.

3. A pedestal chair according to claim 2, wherein the block surrounds a rod, one end of which carries an end cap and the other end of which is anchored in the frame member, the block being compressed between the cap and the underside of the chassis member.

4. A pedestal chair according to claim 2 or 3, wherein the degree of compression of the block is adjustable in order to suit the occupant's weight.

5. A pedestal chair according to claims 3 and 4, wherein the degree of compression of the block is adjustable by rotation of the end cap.

6. A pedestal chair according to any of the preceding claims, wherein the second axis is nearer to the first axis than the third axis.

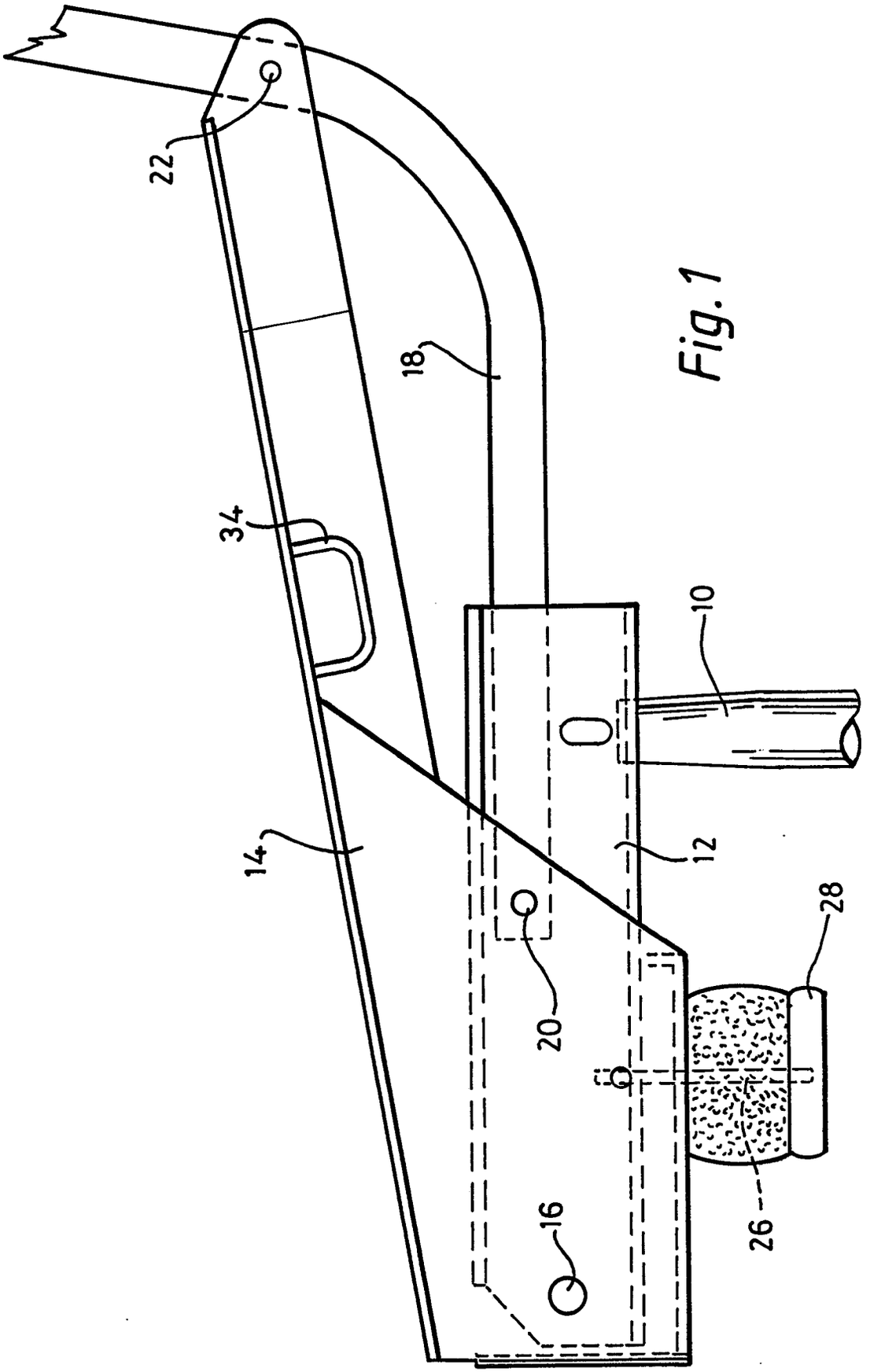

Fig. 1

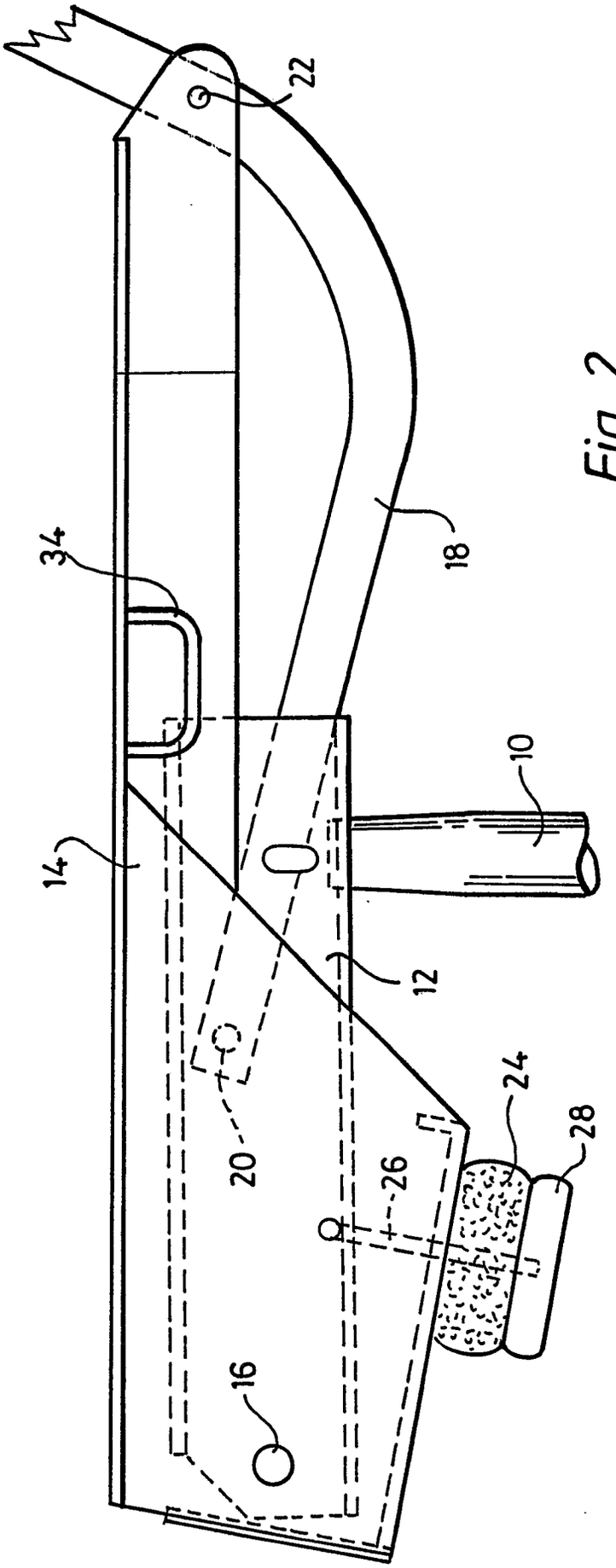

Fig. 2

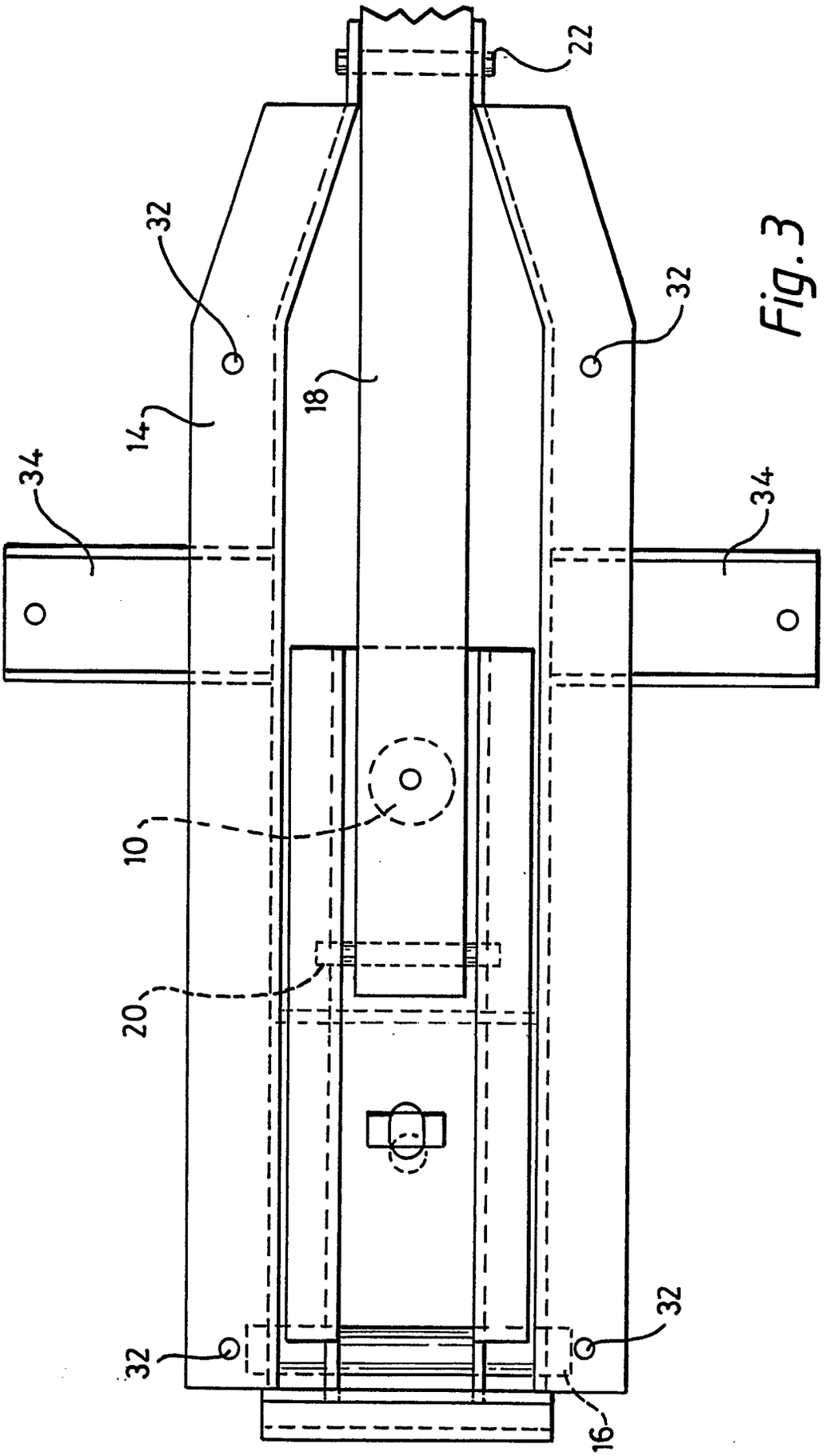

Fig. 3

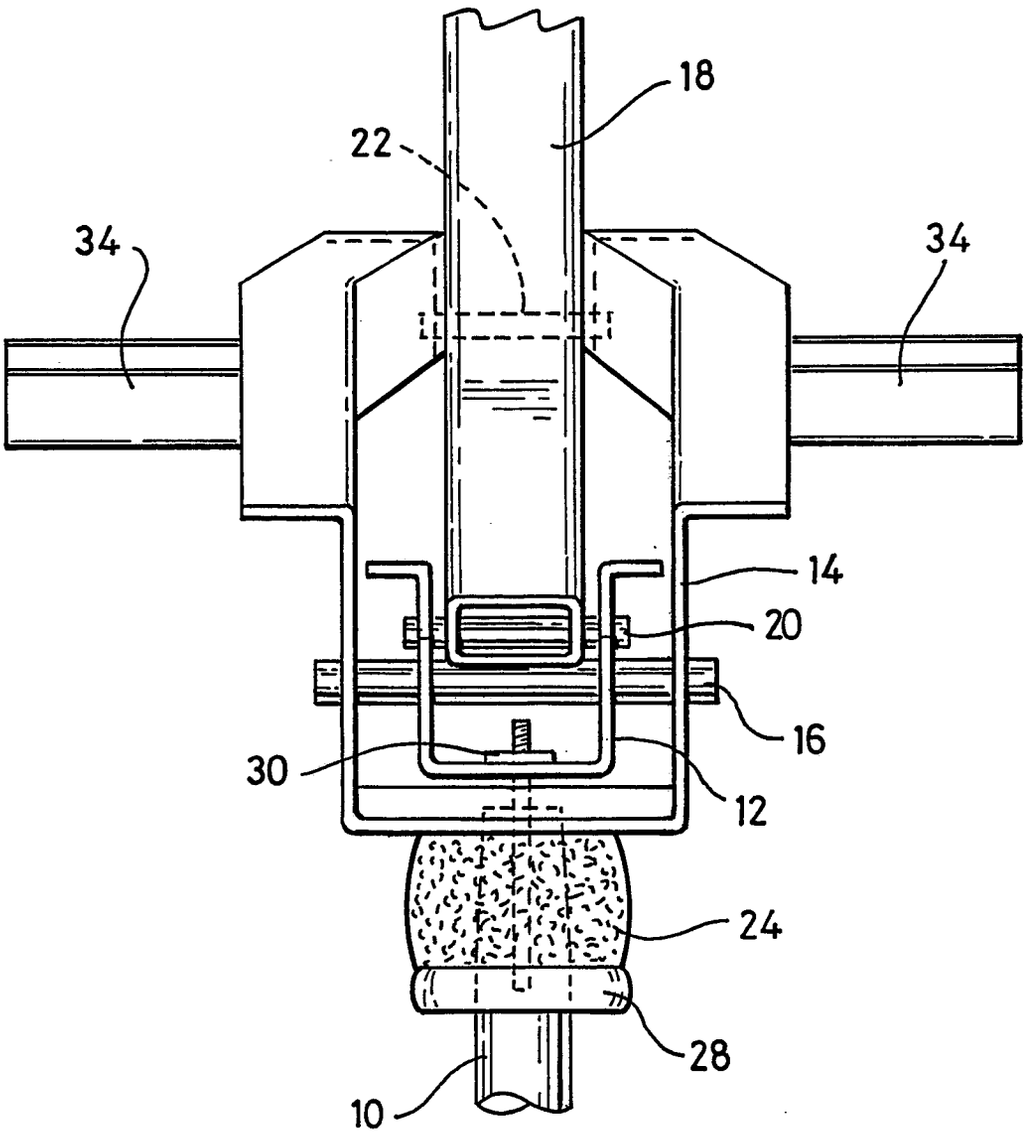

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number

EP 89 31 0208

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-3 322 450 (ELZENBECK) * Page 10, paragraph 2 - page 11, last paragraph; figures 1,3,4 *	1-6	A 47 C 1/032
A	DE-A-3 139 448 (KUSCH)		
A	DE-A-3 605 809 (KÖNIG)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A 47 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	22-01-1990	VANDEVONDELE J.P.H.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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O : non-written disclosure
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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