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(11) **EP 0 804 134 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
28.02.2001 Bulletin 2001/09

(21) Application number: **94917070.8**

(22) Date of filing: **24.05.1994**

(51) Int Cl.7: **A61G 5/14**

(86) International application number:
PCT/GB94/01134

(87) International publication number:
WO 95/31953 (30.11.1995 Gazette 1995/51)

(54) **RISING SEAT FOR SEATING INCLUDING TOILETS**

HEBEVORRICHTUNG FÜR SITZE, UNTER ANDEREM TOILETTENSITZE

ASSISE ELEVATRICE POUR SIEGE DE TOILETTES

(84) Designated Contracting States:
DE FR GB IE IT

(43) Date of publication of application:
05.11.1997 Bulletin 1997/45

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Description

BACKGROUND TO THE INVENTION

[0001] The present invention relates to a rising seat for chairs and settees and which can be readily adapted for use on toilets for handicapped people. Most rising seats or lift seats by which name they are widely known, are fitted to a frame on a chair and are operated by a spring or gas mechanism the angle and bulk of which is easily fitted into an existing chair where ample space permits bulky and at times heavy mechanisms to be used, and they are usually assembled during the manufacture of the furniture for which they are designed. For example; T.Wear Smith GB-A-2193886 teaches a torsion spring the end of which is coiled around and fixed to two torsion bars one being moveable by threading a bolt into the bar to move the bar and force spring upwards to increase its tension. Renray GB-A-1578395 teaches a number of springs one leg of each having fixed to it an adjustment means, the selected springs being inoperable by inserting a screw into adjustment means and forcing the spring leg/s away from the pivoted seat, thereby adjusting the resilience required for a pre-determined load. A Portable lift seat - GB-A-1,475,561, invented by a certain LASTINGENS INKOPSCENTRAL LIC EKONOMISK FORENSING, a Swedish corporate that teaches an 'auxilliary seat' comprising a 'U'-shaped & resilient spring locking wire pivotly mounted at its inner end portions for pivoting in a plane essentially parallel with the base board so that outward swing of the one or other limb causing bending of the spring locking wire thereby tending to displace its middle portion from a locking position to a free position etc etc etc. ... emphasis being placed on the method by which a top rising section may be released and then locked to a downwards position, and how springs can be removed or added by the user. It would appear to be very useful for a sitter who wishes to change his mind about rising from the seat and decides instead to remain seated.

[0002] The advantage of a portable lift seat; providing it is fairly simple in its construction and which can be adjusted easily by the user to suit his weight without the need to have a supply of additional springs or other parts to fix to the riser seat, and which can be kept stable on a chair seat for example, include : the practical and economic aspects of using an existing chair without having to purchase a more expensive chair with built-in lift- seat mechanism and, being portable and easily adjustable preferably, it can be used in most chairs in the users house, and can even be carried on a journey for use in seating provided by other people. The current invention is easily adjustable without the use of a tool whether permanently or releaseably fixed to a chair or settee.

SUMMARY OF THE INVENTION

[0003] The object of the invention is to provide a rising

seat and one that raises the sitter easily from a sitting position and which lowers him gently into a sitting position from a standing position and which can be so located on an existing seat in a manner to ensure its stability when in use and one that can be readily adapted to suit the weight of most users, without removal or replacement of working parts.

[0004] According to the invention there is provided a rising seat for seating and toilets comprising in combination at least one torsion spring on a torsion bar, each leg of any selected spring being activated by its at least indirect contact with the inside surface of the rising seat's top and bottom sections said sections being pivotly-hinged together, and a means of rendering any selected number of springs ineffective by removing the pressure from the spring legs and then positioning a leg of each spring not required into one of any number of openings localised on at least one of the sections, such positioning/s preventing the top section from activating the said-positioned springs and so governing the degree of ease at which the top section is lowered on to the bottom section and enabling the user to select only the spring/s required to render the top section resilient enough to lower him gently into a sitting position and to raise him from a sitting position to a standing position. The degree of ease at which the top section is lowered may be governed by moving the torsion bar on which the spring/s is/ are placed, and the mechanism can be applied to a lift seat permanently fixed to seating or toilets. It incorporates a means of lowering the top section on to the bottom section free of resilience, for carrying if portable, or to give the appearance of a standard seat. The rising seat may have attached to its surface a suitable carrying handle. It may have a method of locking it down against the resilience of the spring and a method of adjustment to enable it to remain stable and effective irrespective of the width and depth of the seat in which it is placed. The invention shall now be described by way of example only by the following drawings in which:-

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG 1 is a side view of rising seat in a low position when not in use.

[0006] FIG 2 is a bottom underside view in perspective of top section of a rising seat that shows method of adjustment to a neutral position that enables top section to be lowered without resilience from the spring/s.

[0007] FIG 3 shows an open plan view in which a spring leg travels into a cavity over which it has been positioned when pressure is away from the spring leg, the cavity being in the top section, said cavity being covered.

[0008] FIG 4 is an underside view of top section opened out to expose both sections shows method of substituting a weaker spring mechanism for example for a stronger one.

[0009] FIG 5 is an underside view when top section is

opened out with the bottom section of the rising seat. Neutralising the torsion spring is shown by moving the torsion bar on which the spring/s is/are located.

[0010] FIG 6 is an underside view - shows the method of increasing or decreasing the strength of a torsion spring.

[0011] FIG 7 is a side view open plan of torsion bar fixed away from edge of bottom section.

[0012] FIG 8 is a top view of method of determining the ease at which top section can be lowered using sliding base.

[0013] FIG 9 is a side view of hollowed out top section hinged on bottom section, or directly on to toilet.

[0014] FIG 10 shows a side view in open plan of rising seat located in a chair by tongue-shaped extension to the bottom section.

[0015] FIG 11 shows an open plan view of chair from front with bottom section of rising seat incorporating extended sides shaped to fit under arms of chair.

[0016] FIG 12 shows an underside view of bottom section with extendable sides to fit a wide chair.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] FIG 1 shows seat 1 folded for carrying. The top section 2 of the rising seat shown as 2 may be lowered or folded or hinged down on to the bottom section 3 after neutralizing the resilient action of the torsion spring that in its 'active' or positive mode is used to enable the user to lower himself gently on to the chair, the top section of the seat pivoting against the resilience of the said spring that also enables the sitter to raise himself from a sitting to a standing position. Pressure may be released from the spring by moving a part of the top and bottom sections away from the spring/s. Hinge is 4. Neutralizing the resilience of the spring is shown in FIGS 2 and 4. The hinge-pin 4 also acts as a torsion bar that is circular and rests across the ends of either section of the riser seat. Any selected number of torsion springs 5 are placed over the bar. The main body of the spring so coiled to leave ample room for contraction as weight is applied to the ends of the spring, one leg of each spring coming into contact at least indirectly with the inner face of the top section and the other leg coming into contact at least indirectly with the bottom section 3 as weight is applied and the top section 2 is pivoted downwards towards the bottom section. The angle of the torsion spring 5 is such that when the top section is opened outwards to form a configuration similar to that of an open book the spring/s can be moved along the torsion bar unhindered by the pressure of either board or section. In at least one of the boards from which the top section would preferably be made and from which the bottom section may be made and towards the surface of which one leg or two legs of the torsion spring is pointing is a cavity or opening 6 of a shape that will allow the leg or legs of the spring to fall as the top section of the rising seat is lowered. When

the spring leg drops into the cavity 6 - See FIG 2 - the spring then has no surface against which it can be pressed to give the spring and the top board resilience when the top section is lowered so that the top section can thus be freely lowered to rest on the bottom section enabling it to be easily carried or to be placed in a chair without the top section being raised. The cavity 6 may be covered on the opposite surface of the rising seat 1 this being shown in FIG 3 - so that the leg of the spring does not dig into the face of the rising seat cover. The spring leg can be covered by a dome-shaped cover 7 that can be placed either over the area where the spring leg 5 would otherwise protrude or the whole of the top surface 2 of the rising seat as seen can be covered and then upholstered over the hard surface of a larger dome-shaped cover 7. The method of neutralizing the effect of the spring can also be used for adjusting the resilience of the top section of the rising seat either by having blind-hole cavities of different depths that will decrease the tension of a spring by lengthening the distance between the end of the leg or point of contact of a spring in relation to the top section or by neutralizing totally the resilience of a selected number of springs of varying strengths, and positioning only that spring or springs of a predetermined strength so that it/ they become resilient only if its/their legs are positioned away from the cavities & on to a firm surface of the board around the said cavities. For example, ideally two springs would be used to raise the top section of the rising seat, such springs being joined together by a connecting wire or handle so that springs can be moved in one action by lifting the connecting wire & moving the springs connected by the connecting wire, or handle. See FIG 4. If there are three sets of springs for example comprising two springs per set, each set can be a different thickness and strength. Two sets 8 & 9 can be located with their legs over holes 10 & 11 so that they cannot be under resilience when the top section 2 of the rising seat shown is pressed down by the weight of the user, leaving the selected spring set 12 only to be compressed on to the inner surface of one of the boards 3 as the top section board is lowered, the pressure of the board activating the resilience of the spring set 12 selected for the resilience needed to suit the weight of the user; the selection of the springs can either be numerical or by thickness of the spring/s that could be calibrated to suit a variance in body weights. The spring can instead be located on the torsion bar 4 so that when the torsion bar or hinge-pin, if also used as a hinge-pin, on which the top section pivots on the bottom section, is moved one way or the other, it carries with it at least one spring that can, with the two boards opened out and free of pressure of the spring legs in that opened out position, be located over a cavity, so that when the top section is lowered on to the bottom section 3 no resilience is felt from that spring or set of springs in the cavities. Movement of the springs for adjustment or neutralizing the tension can be assisted by small rollers 13 on the spring legs if springs are

near to the boards. Grooves are shown as 14 into which spring leg is placed to prevent slippage as shown in FIGS 4, 5 and 6. FIG 5: An alternative method of creating a neutral position that enables the top section to be lowered without resilience from the spring or springs is to move a separate torsion bar 15 on which the springs 5 would be located towards the centre of the board; in which the torsion bar can be fitted in a guide 16 fitted to one of the boards. As the torsion bar 15 is moved, preferably in guides 16 to stabilise its movement, so one of the ends or legs of at least one spring, depending on the number of springs placed on the torsion bar, is drawn away from one of the boards thereby neutralising the effectiveness of the spring when the top section 2 is lowered on to the bottom section 3 of the aforesaid rising seat both spring legs of each spring resting over one board only. To enable such movement of the torsion bar on which the springs are fitted it is necessary to use the existing hinge 4a only for pivoting the two sections or some other form of hinge in addition to a torsion bar on which the springs are located. If positive mode is required; Return of torsion bar is assisted if spring is bent upwards. The grooves for spring legs are shown as 14. To enable the top board to be lowered on to the bottom board cavities 17 are made in the board opposite to the board on which the torsion spring/s are fitted to enable the two legs of each spring to travel through the said cavities in the said board as the board is lowered.. The strengthening of individual torsion springs can be made by raising the spring 5 by locating at least one leg of the spring either directly or perhaps indirectly on a wedge-shaped base 18 with groove 14 that is moveable on the board by a screw mechanism 19 that holds the wedge in position under the spring when adjustment has been made as shown in FIG 6 in which the top section is 2, bottom section is 3, roller 13 and cavity is 6. The top section 2 may be placed on a hinge 4a (See FIG 7). The hinge being positioned two to four inches approximately away from the edge of the bottom section 3, that is to say the front edge, so that when the spring leg 5 travels through the cavity 6 the spring leg if in line or forming a large angle with its opposite leg will rest on the end of the bottom section when the top section is lowered freely without resilience from the spring, and will not jut out from the front of the rising seat. In FIG 8; when determining the degree of ease at which the top section 2 can be lowered on to the bottom section 3 of the rising seat shown, the spring 5 may be placed on the torsion bar 4 transversely, and spaced protrusions or blocks 20 on a sliding section 21 located under spring legs 5 selected by the user or they may be so moved away from the spring legs altogether so that the spring legs are positioned over gaps between the blocks so that when the top section is lowered on to the bottom section there is no resilience from the springs and it may be so folded down into a neutral position to facilitate its carrying. Gaps are shown as 22. Alternatively the blocks & gaps may be incorporated on a fixed section and the spring

legs placed on to the blocks or over the gaps between the blocks as required by either sliding the springs along the torsion bar or by locating the springs to the torsion bar and moving the bar until the spring legs are aligned with the blocks or gaps between the blocks as required thereby determining the degree of ease at which the top section 2 can be lowered on to the bottom section 3. The gaps may be formed from cut-outs in a solid block that may be fixed to the inside face of one of the sections that is to say the top or bottom section or may be located to slide on one of the sections for positioning spring legs in the latter construction that would preferably be fixed transversely along the torsion bar. When used as a toilet seat 23 there shall be an opening in the top and bottom sections and at least one spring leg under the seat rim, its opposite leg resting on the toilet edge or attachment thereto. Top section 2, lower section 3 and hinge 4a (See FIG 9). In FIG 10 the rising seat 1 is kept firmly fixed to a chair 24 by a tongue-shaped extension 25 attached to or being part of the bottom section 3 of the rising seat and the extension is wedged between the seat of the chair and the vertical back of the chair 24. The same type of extension also shown as 25 in FIG 11 can be used to protrude over the chair seat and under the arm/s such room generally being found for that purpose in most lounge-type seating and also in many types of lighter seating and chairs in which the arms are filled in to the seat of the chair the extensions ideally being placed under such arm where the arm joins the chair seat and the said extensions being fixed one on each side of the rising seat . The chair is shown as 24. In FIG 12 the bottom section 3 of the rising seat shown can be made adjustable by having an adjustable frame 26 for example that can be moved outwards into the sides and/or back of the chair 24 in which it is resting. This adjustment facility could be affectively utilised in a chair that might be otherwise too wide for the rising seat. The sections may be padded with foam and covered by material tacked on to them.

Claims

1. A Rising Seat for seating and toilets comprising in combination:-
 - (a) at least one torsion spring (12) on a torsion bar (4) each leg of each spring being activated by its at least indirect contact with the inside surface of the rising seats top section (2) and bottom section (3), said sections being pivotly-hinged together, and
 - (b) a means of rendering any selected number of springs ineffective by removing the pressure from the spring legs and then positioning a leg of each spring (5) or (8)& (9) not required into one of any number of openings (6) or (10) &(11) localised on at least one of the sections, such

- positioning/s preventing the top section (2) from activating the said positioned springs and so governing the degree of ease at which the top section is lowered on to the bottom section (3) and enabling the user to select only the spring/s required (12) to render the top section resilient enough to lower him gently into a sitting position and to raise him from a sitting position to a standing position.
2. A Rising Seat as claimed in Claim 1 characterised by the torsion spring being located on a hinge-pin (4) that also acts as a torsion bar (4)
 3. A Rising Seat as claimed in Claim 1 characterised by the torsion spring (5) being located on a torsion bar (15) that is separate from the hinge (4)
 4. A Rising Seat as claimed in Claim 1 characterised by the top section (2) being opened outwards to form the configuration with the bottom section (3) of an open book to remove pressure from the legs of the springs (8),(9) and (12) to facilitate the positioning of at least one of the springs.
 5. A Rising Seat as claimed in Claim 1 characterised by moving an area (not shown) of the section/s (2) and/or (3) on which the spring/s is/are at least indirectly resting away from the leg of any spring not required to govern the ease at which the top section can be lowered on to the bottom section.
 6. A Rising Seat as claimed in Claims 1, 2 and 3 characterised by a torsion spring (5) fixed to a torsion bar (4) that when moved across the rising seat carries the spring/s attached thereto to the required position.
 7. A Rising Seat as claimed in Claims 1 and 8 characterised by spring (5) : being moved along a torsion bar (4) to position one of its legs over a cavity(6) or at least indirectly on to the firm surface of the sections (2) or (3)
 8. A Rising Seat as claimed in Claims 1 and 2 characterised by springs (5) (8) (9) and (12) which are a slide fit along a fixed torsion bar.
 9. A Rising Seat as claimed in Claims 1 and 20 characterised by at least one cavity (6)(FIG 2) in at least the bottom section (3) into which cavity/cavities the spring/s travel/s as the top section is lowered thereby rendering all so-positioned springs inoperable, thus enabling the top section (2) to be lowered on to the bottom section free from pressure by the top section on to spring/s thereby neutralising the resilience of the so-positioned spring/s and facilitating carriage of the rising seat.
 10. A Rising Seat as claimed in Claim 1 characterised by positioning spring legs(12) on to the firm inside surface of the top & bottom sections (2) & (3) to govern the ease at which the top section is lowered on to the bottom section necessitating weight of the user to lower the top section against the springs resilience.
 11. A Rising Seat as claimed in Claims 1 and 3 characterised by moving the torsion bar (15) on which at least one spring (5) is located away from the edge of the bottom section (3) and out of reach of the top section (2) thereby ensuring that no resilience is created by the springs during the initial lowering of the top section, and resilience being prevented as the top section is lowered further towards the bottom section by holes(17) at least in the bottom section through which holes the legs of the springs (5) travel thereby rendering the springs inoperable.
 12. A Rising Seat as claimed in Claim 1 characterised by joining not less than two springs (8) together to form a set of springs to facilitate the movement of more than one spring in one operation.
 13. A Rising Seat as claimed in Claim 1 characterised by grooves (14) into which grooves a leg of each spring (12) is located to prevent slippage of the spring legs as the top section (2) is lowered towards the bottom section (3)
 14. A Rising Seat as claimed in Claims 1 and 9 characterised by a cap (7) over the cavity (6) into which cavity the spring leg travels (5) said cap preventing the leg of the spring penetrating the filling in the rising seat.
 15. A Rising Seat as claimed in Claim 1 characterised by a wedge (18) on which the spring (5) is resting, said wedge being adjustable towards or away from the spring in relation to its coil by an adjustment screw (19) thereby increasing or decreasing the resilience of the said spring the opposite end of the spring being positioned at least indirectly on the firm surface of the opposite section.
 16. A Rising Seat as claimed in Claim 1 characterised by a carrying handle. (FIG 1)
 17. A Rising Seat as claimed in Claim 1 characterised by the top section being hinged (5) away from the front edge of the bottom section (3) (FIG 7)
 18. A Rising Seat as claimed in Claim 1 characterised by the springs (8) (9) and (12) being transversely located on the torsion bar.
 19. A Rising Seat as claimed in Claim 1 characterised

by blocks (20) on the inside face of the rising seat over which said blocks the selected spring legs (5) are located. when resilience is required to the top section (2)

20. A Rising Seat as claimed in Claims 1 and 19 characterised by gaps (22) between blocks (20) into which a leg of each spring selected by the user falls free of resilience as the top section 2 is lowered, thereby rendering selected springs inoperable, said blocks being fixed or located to slice on one of the sections.

21. A Rising Seat as claimed in Claim 1 characterised by the sections being hollowed out to form the top section seat (2) for a toilet, the aforesaid rising seat being fixed by its bottom section (3) to the toilet on to which at least indirectly rests one end of the torsion spring/s its other end resting at least indirectly under the top section that is hinged (4) to the bottom section (3) at the front of the toilet.(23)

22. A Rising Seat as claimed in Claim 1 characterised by the top section (2) and the bottom section (3) being made from two boards of rigid material at least indirectly hinged together.

23. A Rising Seat as claimed in Claims 1 and 22 characterised by the bottom section (3) being shaped to wedge (25) under the sides/back of a seat (24)

24. A Rising Seat as claimed in Claims 1 and 22 characterised by an extendable bottom section (26) to fit up to the inside face of the arms on a large chair (24)

25. A Rising Seat as claimed in Claim 1 characterised by fitting it into the seating area of a seat in place of standard seating.

Patentansprüche

1. Ein aufstehender sitz für einen sitzplatz mit toilette und press kombination:-

(a) mindestens eine Kräftige widerstandsfähige feder (12) auf einer starken widerstands stange (4) jeder fuss der feder ist bestätigt mit mindestens direktem kontakt mit der inneren oberfläche des aufstehendem sitz, wie oberfläche und boden (3) sind drehbahr, abhängig, zusammen.

(b) und die möglichkeit zur übertragung jeder ausgewählter nummer der federn umwirksam herausnehmendem druck von dem federfuss und dann auf der stelle am fuss jeder feder (5) oder (8) + (9) mühelos in eine der anderen

nummern der öffnungen (6) oder (10) + (11) zusammen an mindestens einer section, solche position/en holten die obere section (2) bestätigt die position der federn und so bestimmen den messen leichtigkeit der oberen section welche ist tiefer zur Bodensection (3) und er möglichen den Benutzer zu wählen welche der Feder/n zu wünschen (12) zum abgelen der oberen section ist Kräftig genug um ihn langsam runter zu bringen in eine sitzende position und ihn wieder zur stehenden position bringen.

2. Ein aufstehende zitz als anspruch 1 ist kennbar an der widerstands fähigen feder, sichtbar an dem scharnierstift (4) dus wivkt als eine starke stange. (4).

3. Ein aufstehender sitz als anspruch 1 ist erkennbar sichtlich an der widerstands feder(5) wie gesehen an der starken stange (15) gesondert von der scharnier (4)

4. Ein aufstehender sitz als anspruch 1 ist er jennbar an der oberen section (2) ist nach aussen geöffnet wie der figur am boden (3) eines offenes Buches um den druck der füsse zu mindern von den federn (8) (9) und (12) um raum zu machen für wenigstens einer feder in ihrer position.

5. Ein aufstehender sitz als anspruch 1 ist er känntlih an der be weglichen section (nicht gezeigt) (2) und/ oder (3) an welche die feder/n ist mindestens millelbar (indireckt) und lehnen weg vom boden der feder/n welche nicht in operation um mit leichtigkeit zu bestimmen wie die obere section auf die untere section gebracht werden kann.

6. Ein aufstehender sitz als anspruch 1, 2 und 3 ist erkanntlich an der widerstands feder (5) befestigt zur eine starken stange (4) be weglich über dem aufstehendem sitz trägt die feder zur richtigen position.

7. Ein aufstehender sitz/stuhl als anspruch 1 und 8 ist erkennbar bei der beweglichen feder/n (5) an der kräftigen stange (4) um einen der füsse über die position der lucke (6) oder wenigstens middlebar (indireckley) auf der harten fläche in section (2) oder (3)

8. Ein aufstehender sitz als anspruch 1 und 2 ist erkennbar bei den federn (5)(8) und (9) und (12)welche beweglich an der kräftigen stange ist.

9. Ein aufstehender sitz als anspruch 1 und 20 ist erkennbahr dargestellt bei mindestens einer lücke (6) (FIG 2) an mindestens der boden section (3) in welche lücke/n die feder/n beweglich an der oberen section kommt runder, so alle feder/n in ihrer posi-

- tion sind unbetätigt das erlaubt die obere section (2) runter zubringen zur boden section frei vom druck der oberen section der feder/n wobei neutralesirung der kräftigkeit der positionierten feder/n leichter trägt am aufstehendem sitz.
10. Ein aufstehender sitz als anspruch 1 ist erkennbar bei der position der feder füsse (12) an der harten innerenseite oben und unten in section (2) und (3) um zu bestimmen die leichtigkeit der oberen section zur unteren section um das notwendige gewicht des Benützers gegen die obere section und untere kräftige feder zu niedrigen.
11. Ein aufstehender sitz als anspruch 1 und 3 ist erkennbar bei der beweglichen kräftigen stange (15) an weder mindestens eine feder (5) lage weg ist, bei der kannte in section (3) am boden, und nicht im bereich der oberen section ist (2) dabei versuchen das keine kraft erfolgt von den federn zwischen des langsamen niederung der oberen section nieder zum boden section in löchern, (17) und mindestens der boden section durch welche löcher die füsse der feder/n (5) reihen und unbetätigt werden.
12. Ein aufstehender sitz als anspruch 1 ist erkennbar bei nicht weniger denn zwei federn (8) zusammen gesetzt, als gruppe die federn sind-be weglich mit mehr denn eine feder in einer funktion.
13. Ein aufstehender sitz als anspruch 1 ist erkennbar bei rillen (14) in welche jeder federnfuss (12) sitzt umein ver schieben zu ursacher wie in der obersten section (2) und genierdrigt zum boden section. (3)
14. Ein aufstehender sitz als anspruche 1 und 9 ist erkennbar mit einer kapsul (7) über der lücke (6) in welcjes der federfuss sich bewegt (5) die kapsul verhindern den federfuss durchzudringen zur füllung des steigendem sitz.
15. Ein aufstehender sitz als anspruch 1 ist erkennbar mit einen keil (18) wo die feder aufruht (5) der keil ist verstellbar gegen über oder weg von der feder in beziehung zur rolle mit einer verstellung schraube (19) die wobie zu nehmend oder abnehmend die kraft der feder auf dem anderen ende ist mittlebar (indirekt) auf der harten fläche gegen - über.
16. Ein aufstehender sitz als anspruch 1 ist erkennbar an einem träger (FIG 1)
17. Ein austehender sitz als anspruch in 1 ist erkennbar der scharnier ist weg von derkannte am boden. (3) (FIG 7).
18. Ein austehender sitz als anspruch in 1 ist erkennbar bei federn (8) (9) und (12) sie sind horizontally
- dargestellt an der stange.
19. Ein austehender sitz als anspruch in 1 ist erkennbar bei klotzen (20) innen im zitzdeckel, elie klotzen wählen die federfüsse (5) in derlage, wenn kraft ist gebraucht in der oberen section.(2)
20. Ein austehender sitz als anspruch in 1 und 19 ist erkennbar bei Lücken (22) zwischen den klotzen (20) in welches ein fuss jeder feder fällt jede gebrauchte feder benützen die falle frei ohne kraft, wie der oberen section (2) ist erniedrigt wobei die funktion stops, klotzen sind auf der section oder ist gleiten an einer section.
21. Ein austehender sitz als anspruch in 1 ist erkennbar bei seiner ausgehöhlten section im oberen teil des sitzes (2) für eine toilette, der hergestellte sitz ist am boden befästigt(3) an einem ende der stragenfeder/n und ist mindestens mittlebar auf der oberen section hanglich (4) auf die untere section (3) an der kante toilette. (23)
22. Ein austehender sitz als anspruch in 1 ist erkennbar bei der der obersten section (3) und unteren section (3) hergestellt mit zwei harten brettern und in der mitte zusammen hängen.
23. Ein austehender sitz als anspruch in 1 und 22 ist erkennbar an der boden section (3) mit zwei keilen (25) unter der seite/ rücken des sitzes. (24)
24. Ein austehender sitz als anspruch in 1 und 22 ist erkennbar bei einer ver längeren boden section (26) zur inncren seite des gesichtes auf dem arm eines gröfseren stuhls (sitz) (24)
25. Ein aufstender sitz als anspruch in 1 ist erkennbar und ist so eingebaut dafsehr in jede normale/standard sitzung passt.

Revendications

1. Un siège à ressorts pour chaises, fauteuils et toilettes comprenant les éléments suivants combinés:
- (a) au moins un ressort de torsion (12) enroulé autour d'une barre de torsion (4) et dont les extrémités sont en contact direct ou indirect avec la surface interne des parties, ici un panneau supérieur (2) et un panneau inférieur (3) du siège qui sont reliés l'un à l'autre par une charnière qui leur permet de pivoter
- (b) et un système qui permet de rendre inefficace un (ou plusieurs) ressort(s) en relevant la pression exercée sur les extrémités du celui-ci puis, en plaçant la tige des ressorts non-dési-

- rés par exemple (5) ou (8) et (9) dans les trous (6) ou (10 et 11) ou situés sur au moins un des deux panneaux, annulant ainsi l'action de ces ressorts par exemple quand le panneau supérieur (2) du siège est repliée; l'utilisateur peut ainsi choisir le degré de flexibilité du panneau supérieur lorsque celui-ci est replié sur le panneau inférieur(3) du siège, et aussi choisir le (ou les) ressort(s) adapté(s) (12) à son poids; il peut donc faire varier la résistance du panneau supérieur de façon à s'asseoir en douceur et à bénéficier d'un soutien lorsqu'il veut se relever.
2. Un siège à ressorts selon la revendication 1 caractérisé par des ressorts de torsion situés sur l'axe (4) de la charnière qui sert aussi de barre de torsion (4).
3. Un siège à ressorts selon la revendication 1 caractérisé par les ressorts de torsion situés sur une barre de torsion (15) distincte de la charnière du siège (4).
4. Un siège à ressorts selon la revendications 1 caractérisé par son panneau supérieur (2) qui s'ouvre vers l'extérieur donnant au siège l'aspect d'un livre ouvert et relâchant la pression exercée sur les ressorts (8),(9) et (12) de façon à permettre un libre déplacement des ressorts sur leur axe.
5. Un siège à ressorts selon la revendication 1 caractérisé par une partie d'une ou des panneaux (2) et (3) et/ou sur laquelle les ressorts de torsion reposent directement ou indirectement pouvant être déplacée de manière à ne pas faire pression sur les ressorts non-désirés et ainsi permettre la variation de la flexibilité de la charnière.
6. Un siège à ressorts selon les revendication 1, 2 et 3 caractérisé par un (ou des) ressort(s) de torsion (5) fixé(s) à une barre de torsion(4) coulissante qui permet au(x) ressort(s) d'être déplacés latéralement dans la position choisie.
7. Un siège à ressorts selon les revendication 1 et 8 caractérisé par un (ou des) ressort(s) (5) pouvant être déplacés latéralement sur une barre de torsion (4) pour être placés soit dans une position dans laquelle ils sont en contact direct ou indirect avec les panneaux (2) et (3), soit dans une position neutre, à l'intérieur d'une cavité (6) située sur ou dans le(s) panneau(x) (2) ou (3).
8. Un siège à ressorts selon les revendication 1 et 2 caractérisé par des ressorts (5) (8), (9) et (12) qui coulissent le long d'une barre de torsion fixe.
9. Un siège à ressorts selon les revendications 1 et 20
- caractérisé par au moins un trou (cavité) (6) (FIG 2) sur au moins le panneau inférieur du siège (3), et dans lequel le ressort s'enfonce qui devient inefficace lorsque l'on rabat le panneau supérieur(2); tous les ressorts ainsi positionnés deviennent inefficaces et si tous les ressorts sont placés dans les trous, le panneau supérieur pourra être replié sans aucune résistance, facilitant ainsi le transport du siège.
10. Un siège à ressorts selon la revendication 1 caractérisé par un positionnement des tiges(12) des ressorts de torsion sur une surface rigide des deux panneaux(2) et(3) faisant fonctionner les ressorts et laissant à l'utilisateur le choix du degré de flexibilité adapté à son poids qui est nécessaire afin de replier le siège.
11. Un siège à ressorts selon les revendications 1 et 3 caractérisé par une barre de torsion (15) sur laquelle sont enroulés les ressorts de torsion (5) par exemple pouvant être t'eloigner de la charnier, mettant les ressorts hors de portée du panneau supérieur (2) lorsque l'on entame le repli du siège; en outre, des trous (17) situés au moins dans le panneau inférieur et dans lesquels les tiges des ressorts (5) on-désirés viennent se glisser, les rendant ainsi inefficaces.
12. Un siège à ressorts selon la revendication 1 caractérisé par au moins deux ressorts (8) fixés l'un a l'autre de façon à pouvoir déplacer plusieurs ressorts simultanément.
13. Un siège à ressorts selon la revendication 1 caractérisé par des fentes (14) dans lesquelles les tiges des ressorts (12) sont calées pour éviter tout glissement lorsque le panneau supérieur (2) est rabattue sur le panneau inférieur (3)
14. Un siège à ressorts selon les revendications 1 et 9 caractérisé par un capuchon (7) situé sur la partie externe de/des panneau/x au dessus ou sous de chaque trou (6) de façon à éviter toute perforation des tissus du siège.
15. Un siège à ressorts selon la revendication 1 caractérisé par une cale (18) coulissante sur laquelle le ressort (5) repose, pouvant être déplacé sur un axe à vis (19) de façon à faire varier le degré de résistance de ce ressort qui repose directement ou indirectement sur l'autre panneau du siège.
16. Un siège à ressorts selon la revendication 1 caractérisé par une poignée de transport (FIG 1)
17. Un siège à ressorts selon la revendication 1 caractérisé par une charnière (5) située en retrait par l'in-

tersection des deux panneaux (3)(FIG7)

- 18.** Un siège à ressorts selon la revendication 1 caractérisé par les ressorts (8)(9) et (12) situés sur la barre de torsion dans une position transversale. 5
- 19.** Un siège à ressorts selon la revendication 1 caractérisé par des blocs (20) situés sur la face interne au moins d'un panneau, et sur lesquels les tiges des ressorts (5) choisis reposent pour appliquer la résistance souhaitée lors du repli du siège. 10
- 20.** Un siège à ressorts selon les revendications 1 et 19 caractérisé par des espaces (22) entre les blocs (20) permettant d'abaisser les ressorts non-désirés par utilisateur et de les rendre inefficaces; chaque ressort à son propre espace, donc, le siège peut être replié sans qu'aucun d'eux n'oppose de résistance; les blocs sont fixes ou coulissant sur au moins un des deux panneaux. 15
20
- 21.** Un siège à ressorts selon la revendication 1 caractérisé par deux panneaux dans lesquels une ouverture à été creusée, le panneau supérieur (2) servant de lunette de toilettes; le siège est fixé aux toilettes par le panneau inférieur (3) et les ressorts y reposent au moins indirectement, l'autre extrémité des ressorts reposent sur la panneau supérieur et la charnière (4) sera placée en avant des toilettes (23) 25
30
- 22.** Un siège à ressorts selon la revendication 1 caractérisé par deux panneaux (2) et (3) rigides articulés par une charnière qui les relie directement ou indirectement l'un à l'autre. 35
- 23.** Un siège à ressorts selon les revendications 1 et 22 caractérisé par son panneau inférieur (3) qui est biseauté (25) de façon a pouvoir être glissé entre le dossier et l'assise d'un fauteuil (24) 40
- 24.** Un siège à ressorts selon les revendications 1 et 22 caractérisé par son panneau inférieur (3) qui possède des tiges extensibles ou une tige extensible (26) sur le/les côté/s de façon a pouvoir coincer le siège à ressorts entre les accoudoirs/ l'accoudoir (24) d'un fauteuil. 45
- 25.** Un siège à ressorts selon la revendication 1 caractérisé par la possibilité qu'il a d'être construit directement dans un fauteuil standard. 50

55

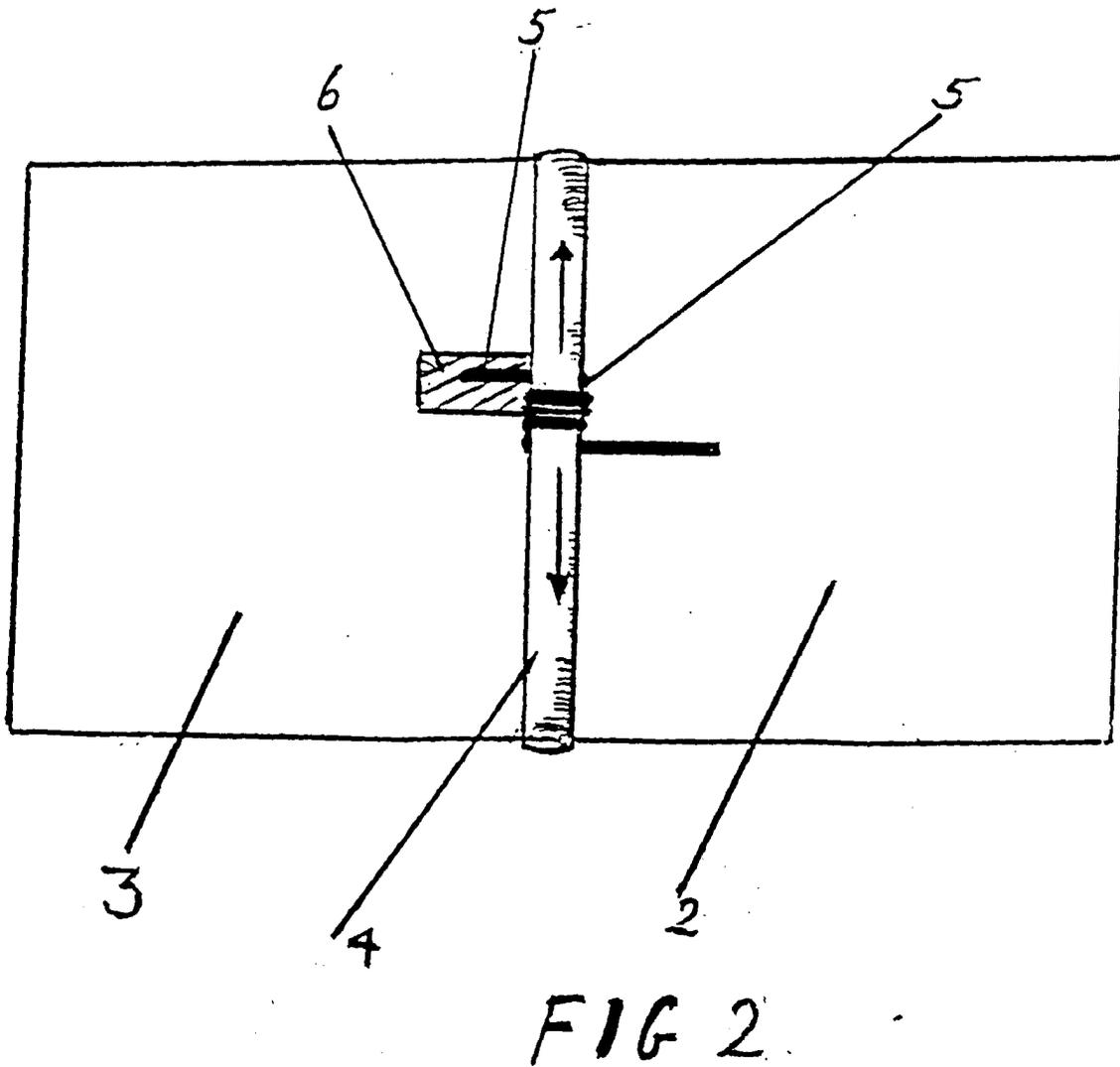
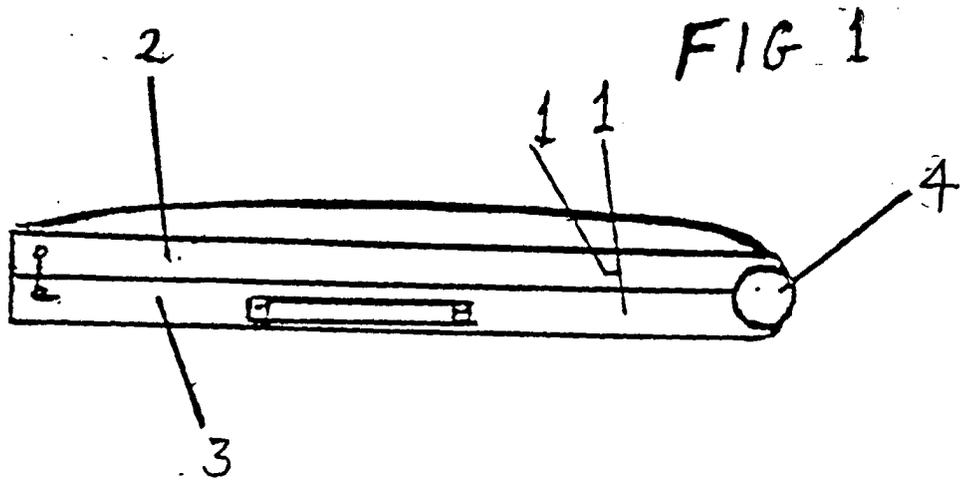
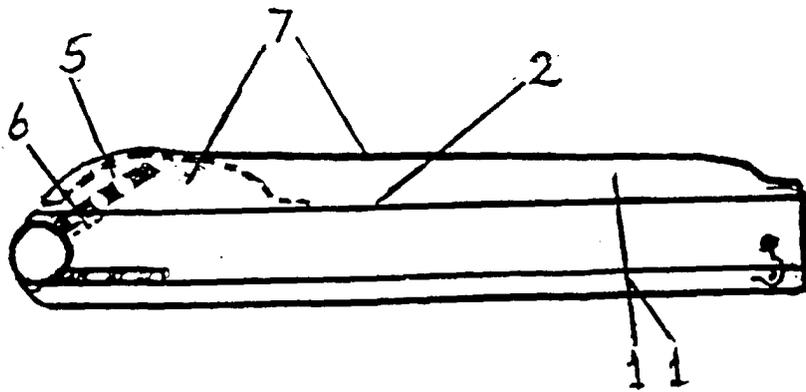


FIG 3



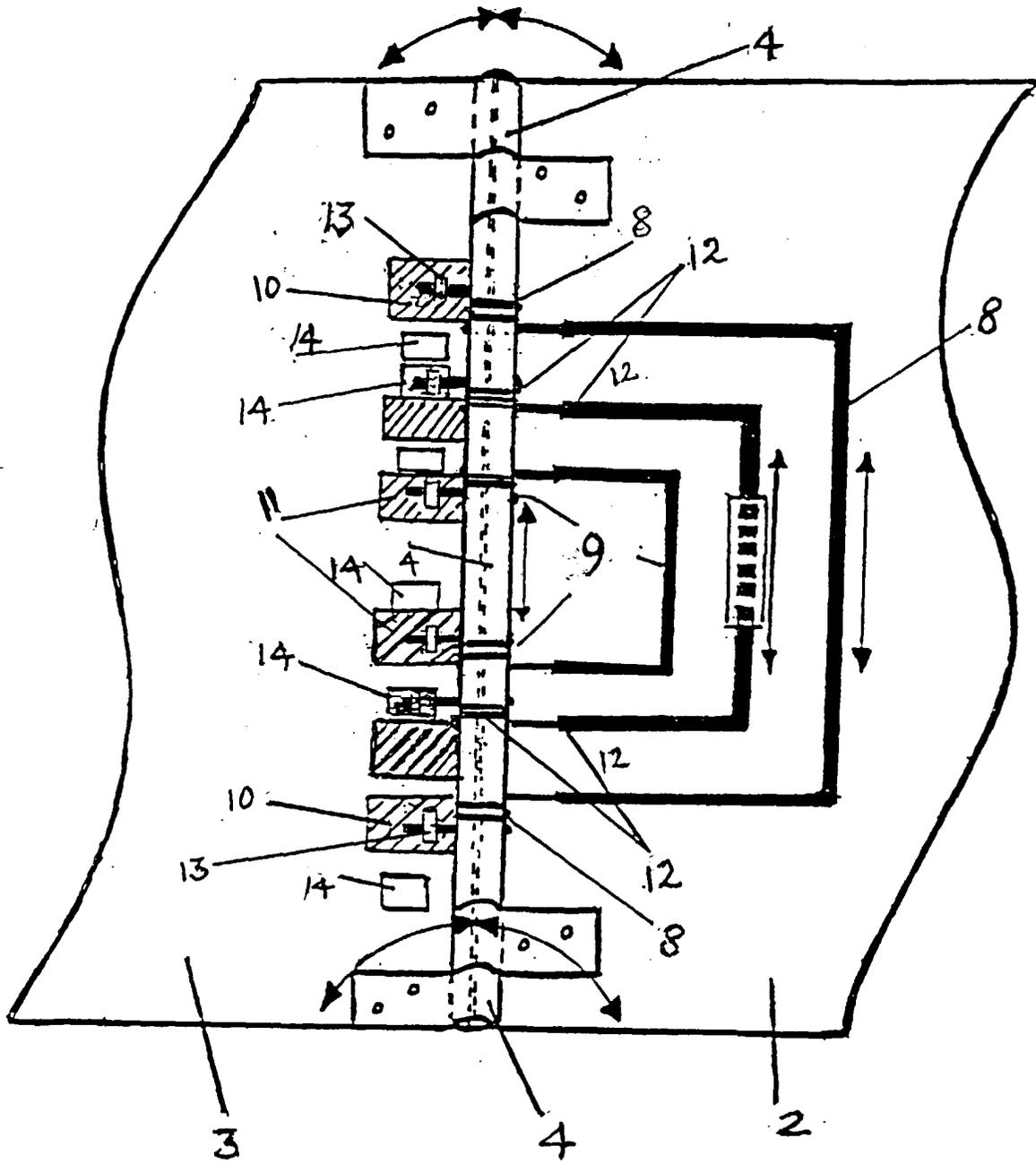
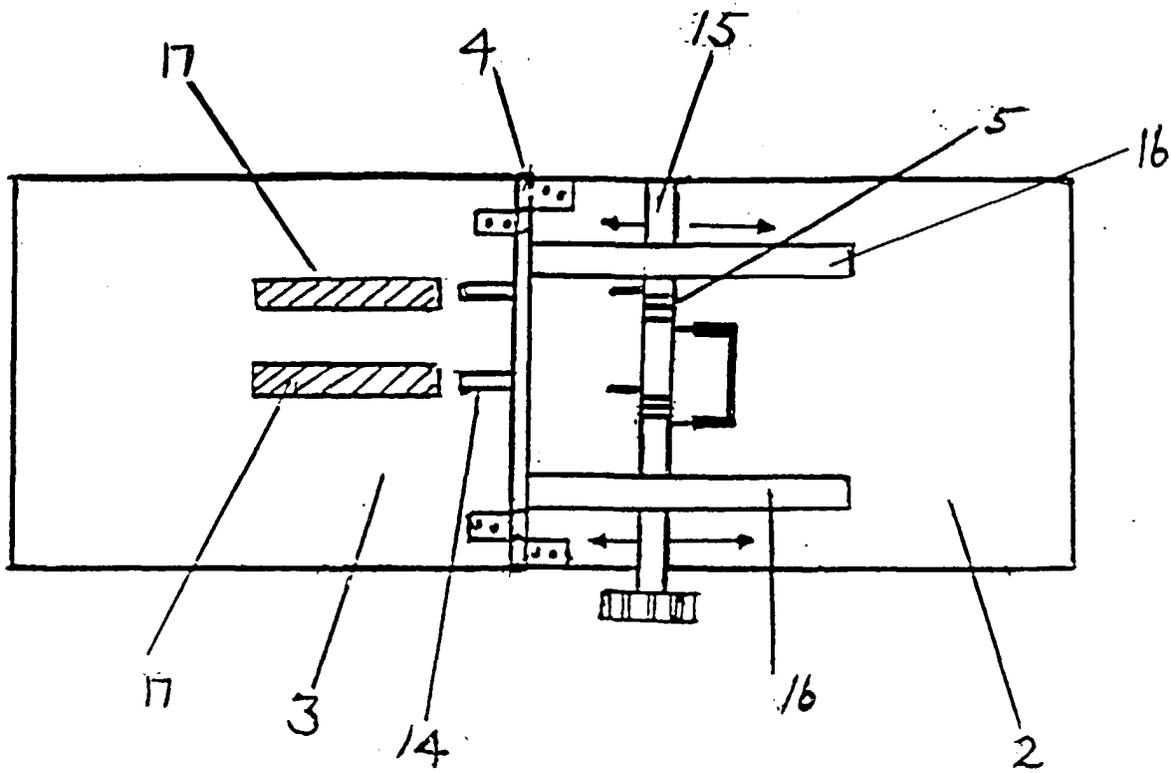


FIG 4

FIG 5



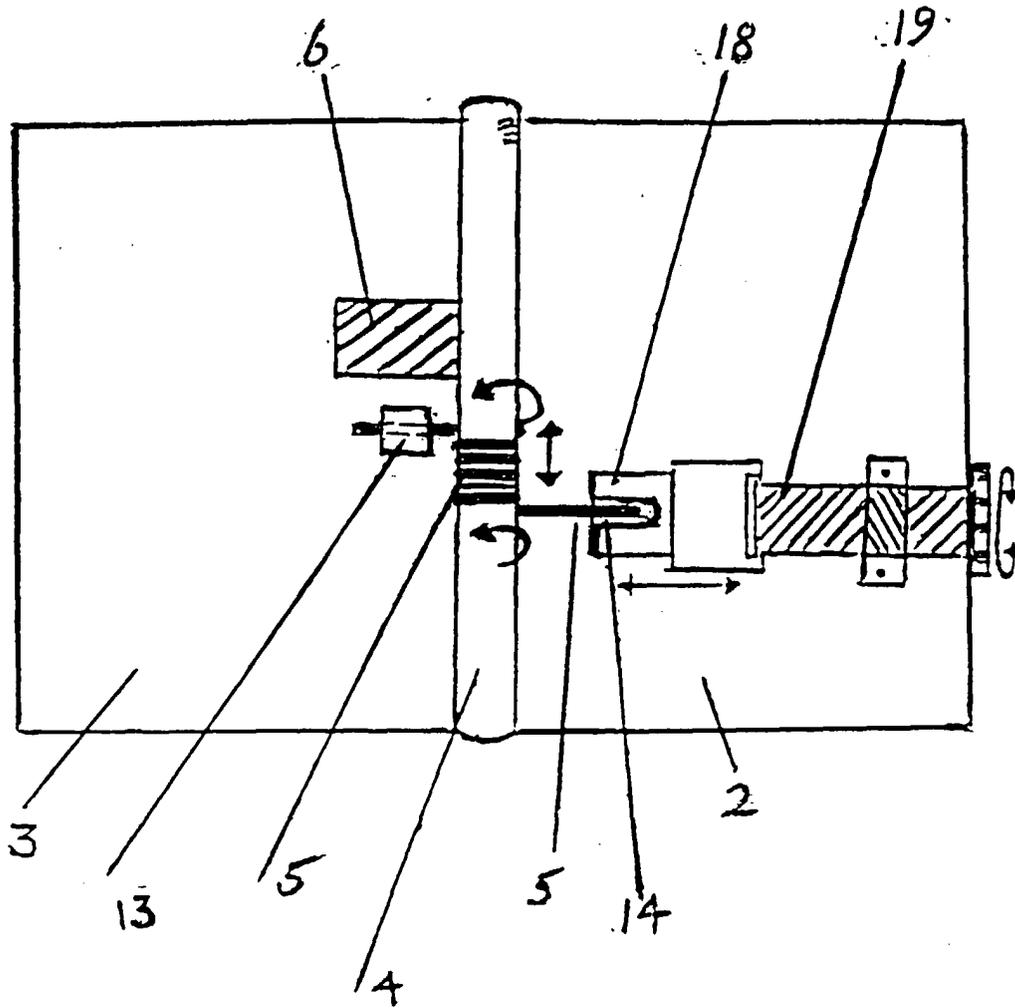


FIG 6

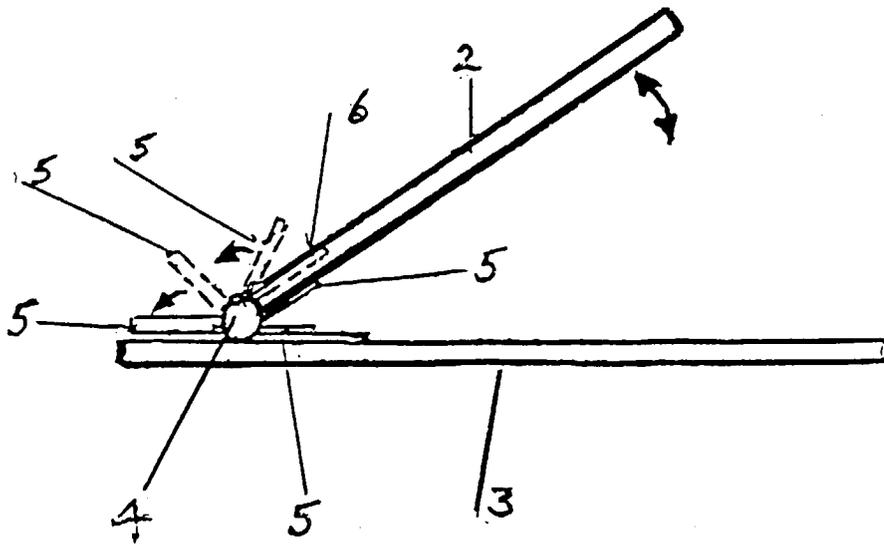


FIG 7

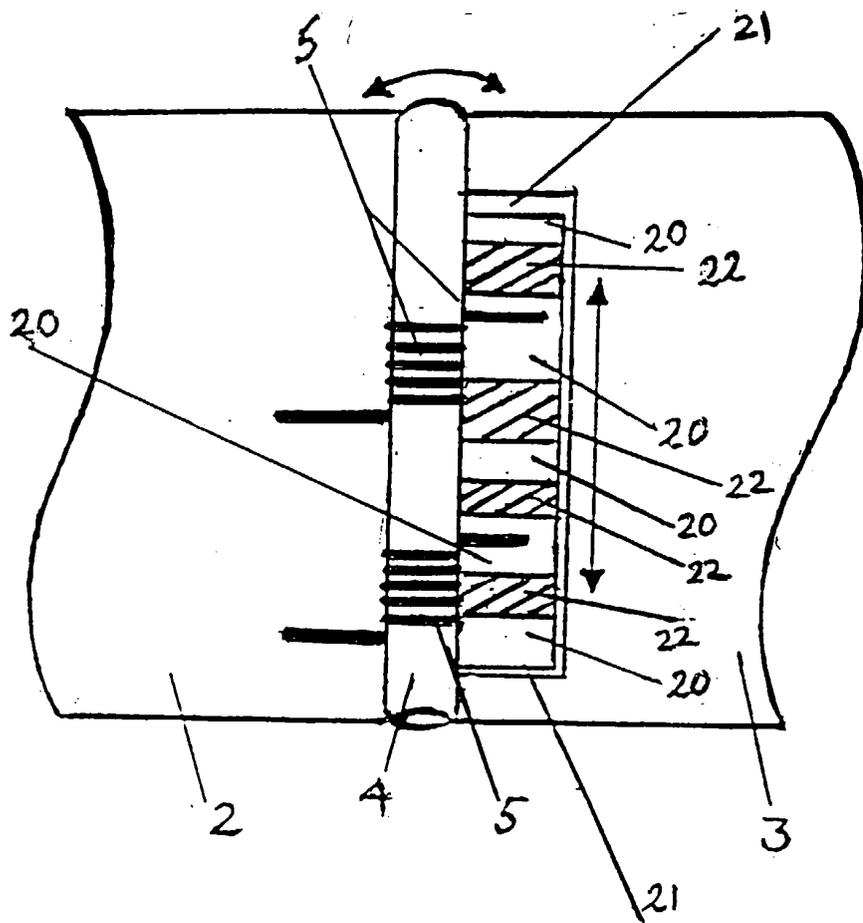


FIG 8

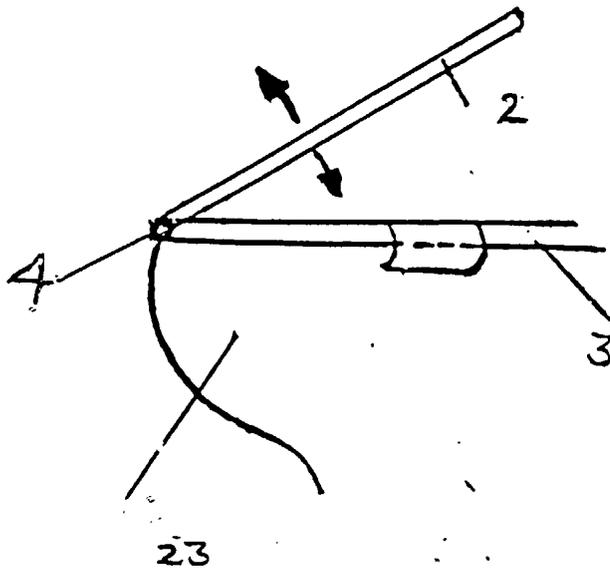


FIG 9

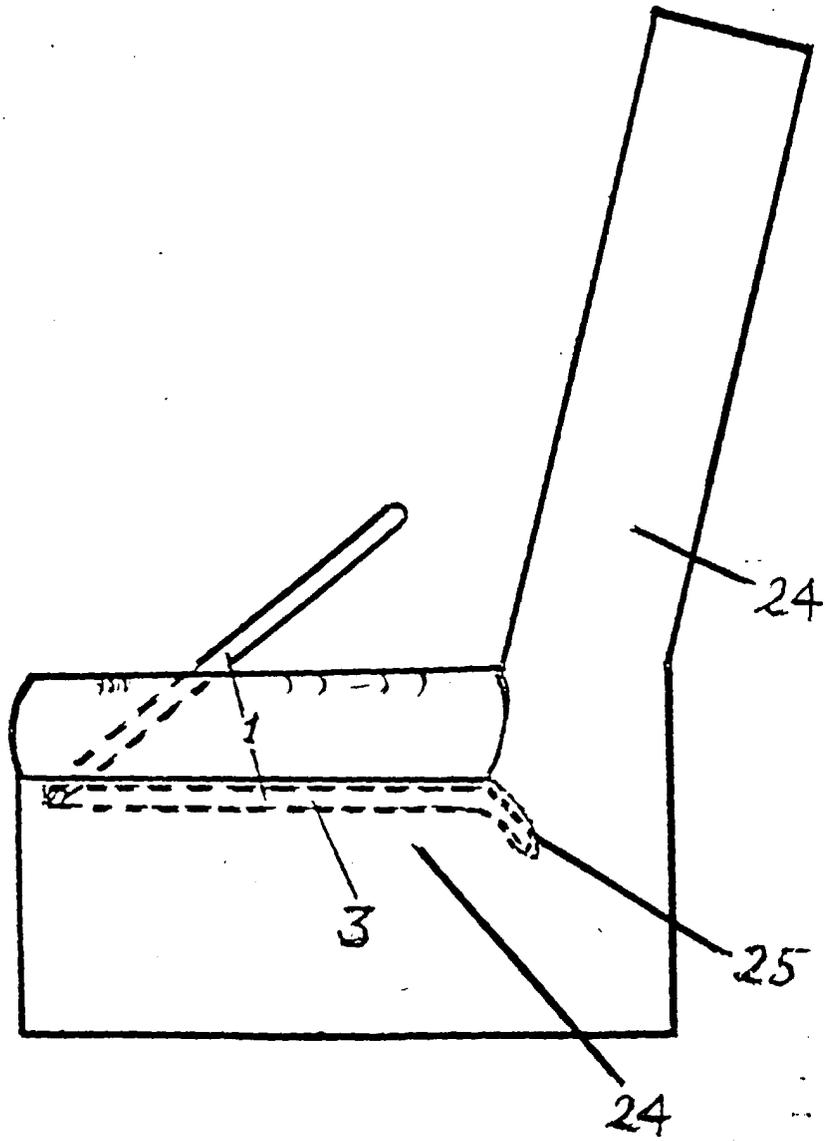


FIG 10

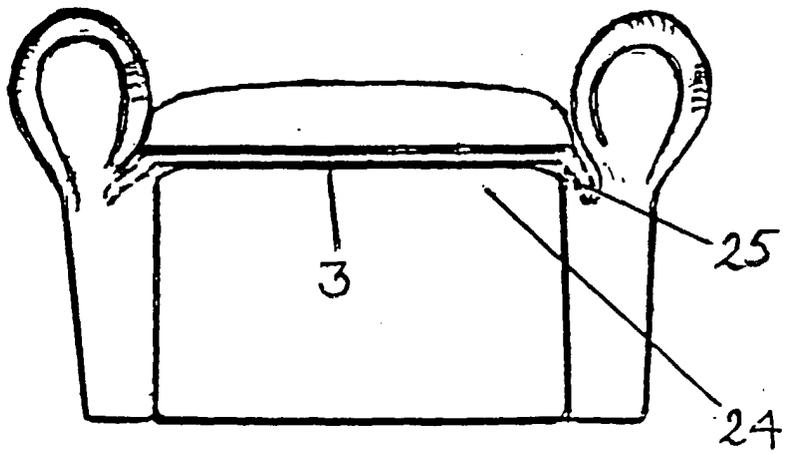


FIG 11

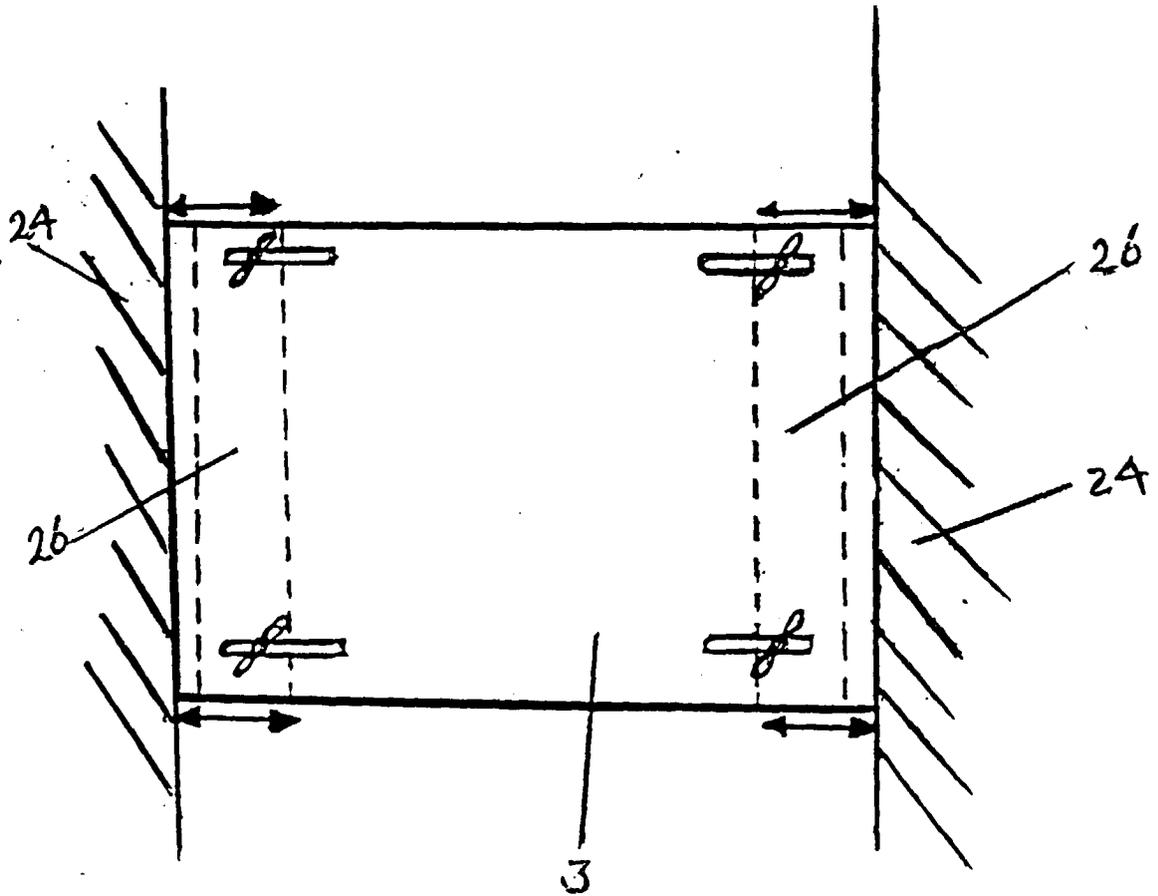


FIG 12