PATENT SPECIFICATION (11) 1 565 120

1 565 120

(21) Application No. 41634/77 (22) Filed 6 Oct. 1977

(31) Convention Application No. 2646177 (32) Filed 13 Oct. 1976 in

(33) Fed. Rep of Germany (DE)

(44) Complete Specification Published 16 Apr. 1980

(51) INT. CL.[3] A47B 9/16
A47C 3/36

(52) Index at Acceptance
A4H 11M 11Y 1A2 1S1 28 48 57 89
W14C W17A2A W17Y W19

(19)



(54) DEVICE FOR ADJUSTING A TABLE, CHAIR OR STOOL

(71) I, OSWALD BRUNN, a German citizen, of Bunzlauer Platz 1, D-8000 München 50, Federal Republic of Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention relates to table, chair or stool at least one end of the table top, chair seat or stool platform being adjustable in height. Such a piece of furniture is known in which one pair or legs can be displaced and simultaneously pivoted at the upper end, and one pair of struts, or the other pair of legs, is hinged at the upper end to the top, seat or platform being hinged at the other end or in its central region to the central region of the movable pair of legs.

Such folding furniture is very popular, particularly as garden furniture. To adjust height, the upper ends of the movable pair of legs, or pins fixed thereto, can be engaged in any one of a row of recesses arranged along a displacement path. In this way the inclination of the pair of legs concerned is changed, and with it the height of at least one end of the table top, chair seat, or stool platform. However, this arrangement only affords step-wise adjustment. A disadvantage is that the table top has to be lifted up a little when changing from one height level to another so that the supporting pins on the legs can be moved out of one positioning recess and into another. This is made more difficult if a table has been laid, or if there are objects on the table. Crockery may even fall off the table. Generally, the table has in any case to be cleared completely and laid on its side for the legs to be adjusted while it is in the horizontal position, which is inconvenient, particularly since it is not possible to see, while the adjustment is being made, whether the position selected corresponds to the desired height of the table top.

It is an object of the invention to provide a table, chair or stool which avoids these disadvantages and is of simple construction, and so that the height of the table top, chair seat, or stool platform can be adjusted continuously and without the top, seat or platform having to be lifted manually.

According to this invention there is provided a table, chair or stool, at least one end of the table top, chair seat or stool platform being of adjustable height, and having legs at least two of which form a pair which is attached at its upper end to the top, seat or platform for simultaneous pivoting and displacement, a pair of struts being hinged at its upper end to the top, seat or platform and at its lower end to the pair of legs, wherein a cable is connected to the pair of legs and passes through a channel member mounted on the underside of the top, seat or platform and extending substantilly in a direction towards the position at which the cable is connected to the pair of legs, the channel being tapered to form an opening in which the cable can be moved or be held against movement.

Also according to this invention there is provided a table, chair, or stool at least one end of the table top, chair seat or stool platform being of adjustable height and having one pair of legs which is attached at its upper end to the top, seat or platform for simultaneous pivoting and displacement, another pair of legs being hinged at its upper end to the top, seat or platform and being hinged in its central region to the central region of the said one pair of legs, wherein a cable is connected to the upper end of the said one pair of legs and passes through a channel seat member mounted on the underside of the top, seat or platform and extending substantially in a direction towards the position at which the cable is connected to said one pair of legs and

disposed near to one end of the top, seat or platform, the channel being tapered to an opening in which the cable can be moved or held against movement.

The invention will now be described by way of example with reference to the drawings in which:-

Figure 1 is a side view of one embodiment of the invention;

Figure 2 is a perspective view showing a height adjustment device on a larger scale, as viewed obliquely from below in the direction of the arrow II of Figure 1;

Figure 3 shows the invention applied to a table-tennis table;

Figure 4 is a perspective view of another embodiment; and

Figure 5 is a perspective detail view showing a recommended cable.

In the folding table shown in Figures 1 and 2, the boards 2 which form the table top 1 lie transversely over two horizontal bearing beams 3. The bearing beams 3, and with them the table top 1, are connected together on their underside by means of a strong hinge joint 4. Each half of the table has a pair of legs 5 appertaining to it. A pin 6 on the upper end of each leg is guided in a straight horizontal groove 7 in a respective bearing beam 3. The legs of each pair of legs 5 are connected together and held apart by means of cross-struts 8, 9 at the upper and lower ends respectively. In the central region of each of the pairs of legs 5 a pair of struts 10 is hinged at 11, each pair being hinged at 12 at its upper end near to the edge of the table on the narrow face of the bearing beams 3.

Whilst in known tables pins such as the pins 6 are each engaged in a recess or niche in the table or in the bearing beam 3, in the present invention they are inserted in a straight horizontal groove 7. A cable 13 is connected to the upper end of each pair of legs 5, and is securely clamped in clamping members 14 near to the edge at the front face of the table. The angle of inclination of the pair of legs 5 and thus the height of the table are adjusted according to the length of the clamped part of the cable.

As can be seen clearly in Figure 2, the clamping members 14 fitted to the lower face of the table top each have a bore or channel 15 extending in a direction towards the upper end of the respective leg or the fixing point of the cable or the vicinity thereof. The channel 15 is open at the bottom in the region nearest to the end of the table and the channel walls which point downwards are tapered into a wedge-shape in the said direction so as to form clamping jaws. The cable is securely clamped in each clamping member 14 by a pull on the pendent part of the cable so that the table is locked at the required height.

Two such clamping parts 14 are provided, arranged at an appropriate angle to each other, between which the cable forms a loop 16 to which a ball-shaped weight 17 is attached. The weight 17 keeps the cable 13 clamped. At the same time the weight 17 serves as a hand-grip.

To improve clamping, the cable 13 can be elastically compressed or may have an elastically compressible core 13*a* (Figure 5). The ends of the cable are each passed through a bore in the cross-struts 8 and secured behind them by a simple knot 18. This connection is simple and reliable.

The clamping parts 14 are not fitted directly to the table top, but via longitudinal and transverse beams 19, 20, 21 which are connected to each other, so that the traction of the cable is distributed over all the boards 2 of the table top 1.

As explained, and as can be clearly seen, the table top can be adjusted easily to the desired height. The two pairs of legs can be adjusted independently of each other, so that the table top can be adjusted to the desired height and kept horizontal even if the ground is sloping (Figure 1). The table surface moves generally only vertically down or up, and a sunshade 23 inserted through a hole 22 in the table top with adequate play can remain *in situ* while the height is being adjusted.

Figure 3 shows the adjustment device of the invention used to adjust the horizontal position of a table-tennis table. The table-tennis top 24 lies on the horizontal member 3*a* of an angle bracket, the vertical member 5*a* of which forms a leg of constant height. On the other side the horizontal member 3*a* is supported by a height adjustment device 5*b*, 10*b*, 13*b*, 14*b*, so that the table top can be adjusted to the horizontal. The fixed member 5*a* can be replaced by a height adjustment device of the invention.

Figure 4 shows a table with a circular top 1*a*, in which instead of the pair of struts 10, another pair of legs 10*a* is provided in known way.

In this embodiment rollers 25 are provided at the bottom of one pair of legs, so the legs can roll on the ground, which makes height adjustment easier and can afford some protection to a planted area. In addition, the whole table can be moved like a wheelbarrow on the rollers 25 merely by slightly lifting the table top at the side opposite the rollers 25, and then pushing it.

WHAT I CLAIM IS:-

1. A table, chair or stool, at least one end of the table top, chair seat or stool platform being of adjustable height, and having legs at least two of which form a pair which is attached at its upper end to the top, seat or platform for simultaneous pivoting and displacement, a pair of struts being

hinged at its upper end to the top, seat or platform and at its lower end to the pair of legs, wherein a cable is connected to the pair of legs and passes through a channel member mounted on the underside of the top, seat or platform and extending substantially in a direction towards the position at which the cable is connected to the pair of legs, the channel being tapered to form an opening in which the cable can be moved or be held against movement.

2. A folding table, chair, or stool, at least one end of the table top, chair seat or stool platform being of adjustable height, and having one pair of legs which is attached at its upper end to the top, seat or platform for simultaneous pivoting and displacement, another pair of legs being hinged at its upper end to the top, seat or platform and being hinged in its central region to the central region of the said one pair of legs, wherein a cable is connected to the upper end of the said one pair of legs and passes through a channel member mounted on the underside of the top, seat or platform and extending substantially in a direction towards the position at which the cable is connected to said one pair of legs and disposed near to one end of the top, seat or platform, the channel being tapered to an opening in which the cable can be moved or held against movement.

3. A table, chair or stool according to claim 1 or claim 2 wherein the channel member has an open lower side at its end remote from the pair, or the said one pair, of legs the open lower side having the tapered formation to provide a wedge-like action on the cable.

4. A table, chair or stool according to any preceding claim having two channel members, the cable being passed from one leg of the pair, or the said one pair, of legs through one channel member and via a loop of cable through the other channel member and back to the other leg.

5. A table, chair or stool according to any preceding claim having a weight on the free end, or on the loop of the cable.

6. A table, chair or stool according to any preceding claim, wherein a cable end or the cable ends is or are each passed through a bore in the pair, or the said one pair, of legs or in a cross-strut connecting them, and secured behind by a knot.

7. A table, chair or stool according to any preceding claim wherein the cable is elastically compressible or has an elastically compressible core.

8. A table, chair or stool according to claim 2 having rollers on the lower ends of one pair of legs.

9. A table, chair or stool according to claim 8 wherein the axes of the rollers are coaxial with a cross-strut at the lower end of the one pair of legs.

10. A table, chair or stool constructed and arranged substantially as herein described and shown in the accompanying drawings.

WITHERS & ROGERS,
Chartered Patent Agents,
4, Dyer's Buildings,
Holborn, London, EC1N 2JT.
Agents for the Applicant.

Printed for Her Majesty's Stationery Office,
by Croydon Printing Company Limited, Croydon, Surrey, 1980.
Published by The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.

1565120 COMPLETE SPECIFICATION

4 SHEETS *This drawing is a reproduction of the Original on a reduced scale*

Sheet 1

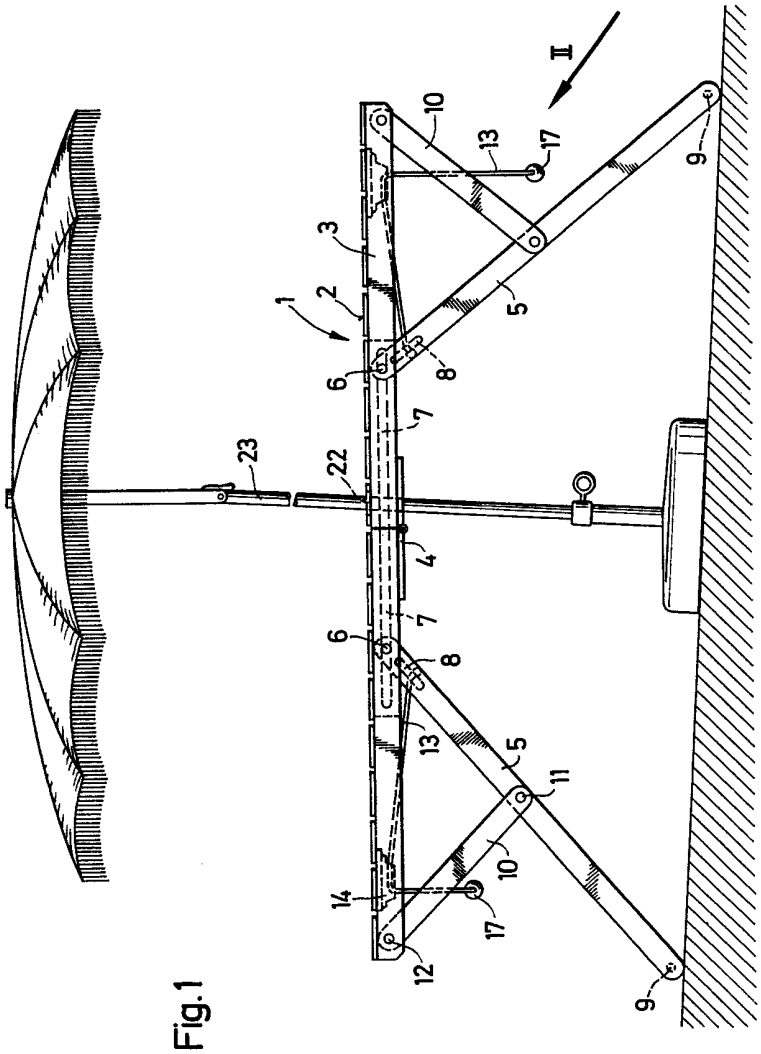


Fig.1

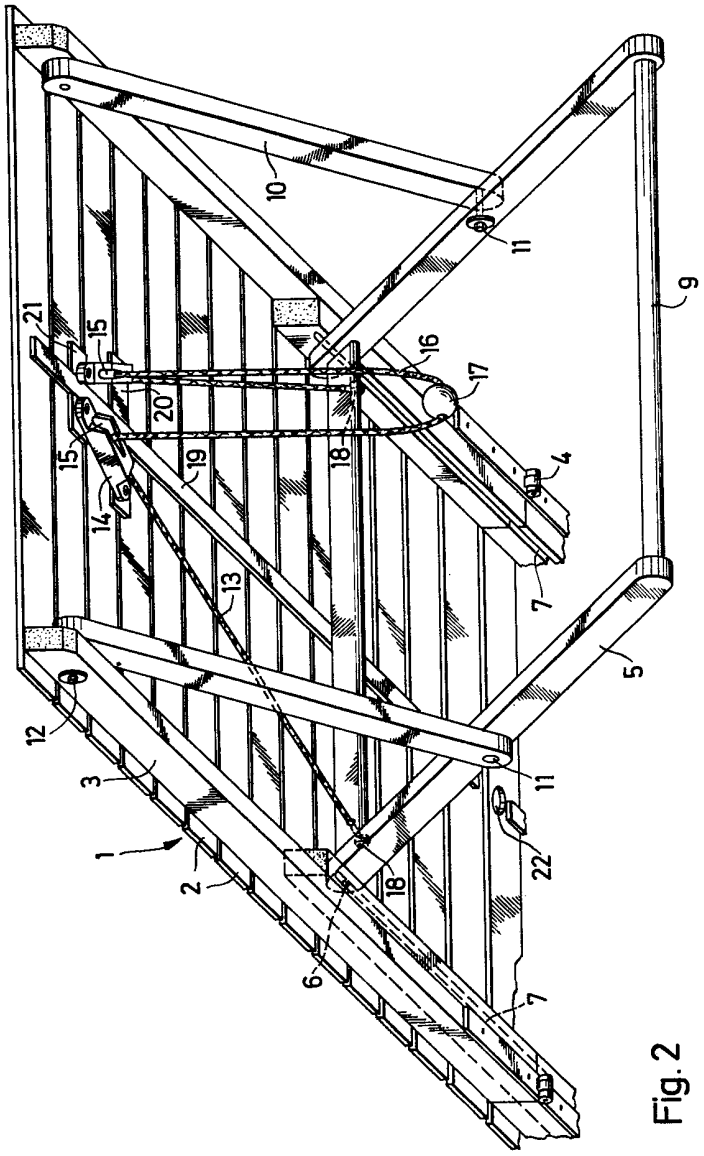


Fig. 2

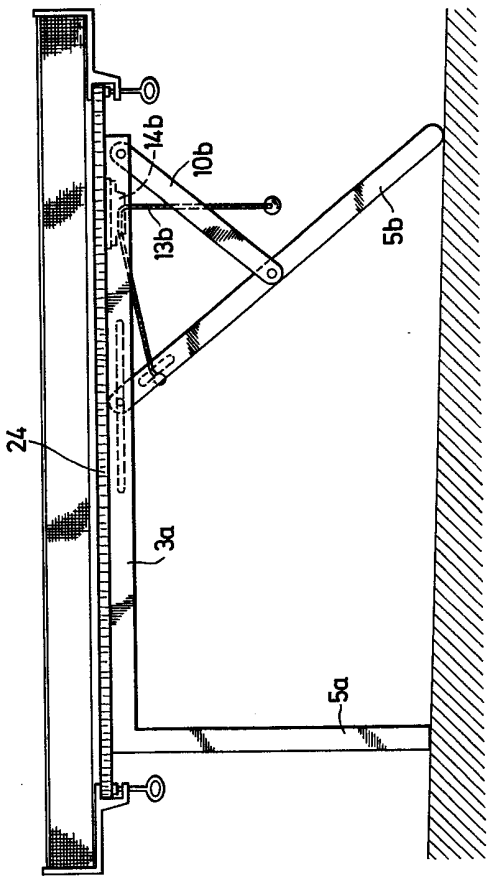


Fig. 3

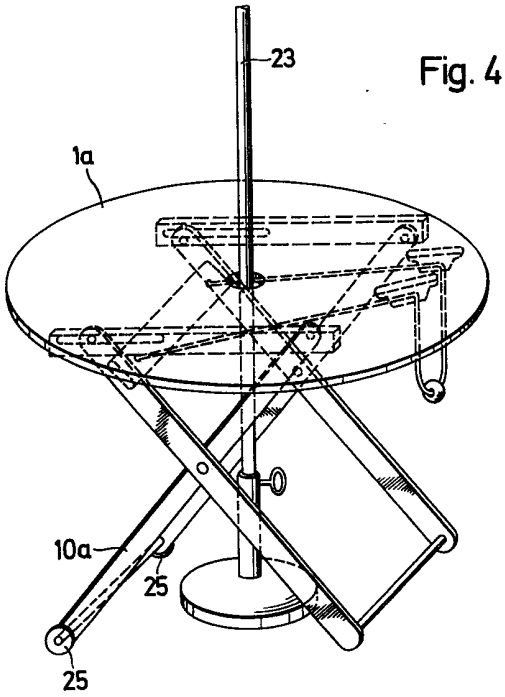


Fig. 4

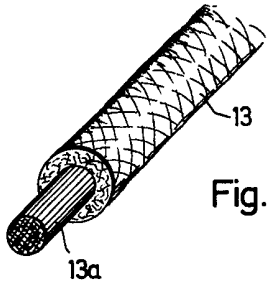


Fig. 5