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(54) Titre : TABLE PLIANTE POURVUE D'UN DISPOSITIF MOBILE DE RETENUE DE TENDEUR
(54) Title: FOLDABLE TABLE HAVING MOVABLE STRUT-RETAINER

This invention relates to foldable tables and more particularly to a table having a movable strut-retainer which facilitates the adjustment of the angle of the table top.

Foldable tables are known having telescopic legs and table tops having means for adjustment of its angle or slope. One such table is described in Canadian patent no. 2,110,875 and U.S. patent no. 5,417,168 both to Douglas Soper. The foldable table described in these patents has a table top which is pivotally connected to a pair of legs. The legs are braced by means of a strut which extends from the table top to the legs. The strut is attached to the table top by means of a pair of retainers each having a number of resilient hooks. The strut can be attached to any one of the hooks in one retainer and a corresponding hook in the other retainer. A change in the hooks to which the strut is attached results in a change in the angle of the table top.

The foldable table described above has a number of shortcomings. First, adjustment of the angle of the table top is awkward and inconvenient unless the table is turned upside down. Before the table can be turned, of course, all the items on the table top must be removed. As well, when the table is upside down it is difficult to determine which hooks the strut should be attached to in order to achieve the desired angle of the table top. In practice, the desired angle can only be determined by trial and error. The strut is attached to a pair of hooks while it is upside down, then righted. The angle of the table top is then checked. If the angle is not the one desired, the table must be turned upside down again and the strut attached to another pair of struts. The process must be repeated until the desired angle is achieved.

A second shortcoming of the Soper folding table and others like it is that there are relatively few hooks. Accordingly there is a limited number of angles at which the table top can be set. Fine adjustment of the angle of the table top is not possible.

I have invented a foldable table having a movable strut-retainer for adjusting the angle of the table top while the table is upright. The angle can be adjusted by reaching under the table top, and pushing one end of a key to disengage the strut from the strut-retainer. The angle of the table top is then adjusted while the strut is disengaged. When the angle is correct, the strut is reattached to the by pushing the other end of the key in order to secure the table top at the correct angle.

My foldable table has the advantage of ready adjustment of the angle of the table top while the table is upright. An added advantage is that there is a relatively large number of angles at which the table top can be set. Fine adjustment of the angle of the table top is therefore possible

Briefly the foldable table of my invention includes a table top having an upper surface and an underside. The underside is equipped with a leg retainer, a track, a rack and a strut-retainer. The strut-retainer is movable in the track and is provided with a key selectively engageable with the rack for immobilizing the strut-retainer. A leg assembly is pivotal with respect to the leg retainer and has a foot assembly adapted to rest on a surface with resulting supporting of the table in an upright position. A strut extends from the strut-retainer to the leg assembly for preventing the leg assembly from pivoting.

The table of the invention is described with reference to the accompanying drawings in

which:

Figures 1 and 2 are a perspective views of the table assembled for use in an upright position;

Figure 3 is a view of the underside of the table top;

Figure 4 is a perspective view of the legs and the underside of the table top;

Figure 5 is an exploded perspective view of the components for adjusting the position of the strut-retainer;

Figure 6 is an enlarged perspective view of some of the components illustrated in Figure 5.

Like reference characters refer to like parts throughout the description of the Figures.

With reference to Figures 1 and 2, the table includes a table top, generally 10, a leg assembly 12, a pair of foot assemblies 14 and strut 16. The table top is generally flat while both the leg and foot assemblies are tubular. The strut is preferably composed of a solid rod.

With reference to Figures 1, 2 and 4, the leg assembly is U-shaped having a central portion 12a and a pair of downwardly extending limbs 12b. Each foot assembly is L-shaped and has a horizontal portion 14a and a vertical portion 14b. The horizontal portion contacts a floor or other horizontal surface for supporting the table in an upright position while the vertical portion 14b has an open upper end for receipt of one of the limbs 12b of the leg assembly. Once received, the vertical portions are concentric with the limbs and may be rotated relative to the limbs.

A number of apertures 20 is spaced along the length of the vertical portion of the foot

assembly for receipt of a conventional spring loaded lock pin (not illustrated). The lock pin is mounted to the lower end of each limb 12b and the spring urges the lock pin diametrically outward of the limb and into one of the apertures for securing the leg to the foot assemblies.

The legs of the table are telescopic. To change the effective lengths of the legs, the lock pins are squeezed so that they withdraw from the apertures in the foot assembly. Each foot assembly is then pulled downward to increase the effective length of the leg. Alternatively, the foot assembly is pushed upward to decrease the effective length of the leg. In the latter case, as the foot assembly is pushed upward, the leg assembly slides further into the vertical portion of the foot assembly. Each foot assembly is then rotated and moved slightly upward or downward until the lock pin pops outward and into an aperture. The lock pin will then interconnect the leg and foot assemblies at the new length.

When the lock pin is not in an aperture, the foot assemblies can be rotated relative to the leg assemblies to facilitate storage of the table.

With reference to Figures 3 and 4, a pair of spaced apart leg retainers 30 is mounted to the underside 10a of the table top. Each retainer consists of a clip having a curved central area 30a which extends half-way around the central portion 12a of the leg assembly. The outer portions 30b of the retainer are generally horizontal and are bolted, rivetted or otherwise permanently fastened to the underside of the table top. The retainer allows the leg assembly to rotate relative to the table top but prevents the leg assembly from separating from the table top.

With reference to Figures 2 and 3, strut 16 is generally U-shaped and comprises a central web 16a and two outer arms 16b. The outer ends of the arms are removably received in apertures 34 formed in the limbs of the leg assembly while the web of the strut is attached to a strut-retainer, generally 36, on the underside of the table top. The strut-retainer can be moved by the means described below and as it moves, the angle of the table top changes also as explained below.

With reference to Figures 5 and 6, a pair of spaced apart parallel rails 40 are affixed to the underside 10a of the table top. A rack 42 runs parallel to the rails and between them. The rack too is affixed to the underside of the table top. The rails and rack run parallel to the side edges 10b of the table top.

The strut assembly has a base 44 which is located above the rails and rack. The base has a flat central portion 44a and downwardly extending flanges 44b on opposite sides of the central portion. The flanges engage with the rails such that the base can slide horizontally along the rails but cannot be removed from them.

A slot 46 is formed in the central portion of the base for receipt of a key 48. The key has a pair of legs 50, 52 which extend downwardly and terminate at lower edges 54. The key also has distal portions 56, 58 having lower edges 60 which run parallel to the lower edges of the two legs. When the key is within the slot, the lower edges of the legs contact the underside 10a of the table top while the lower edges of the distal portions contact the central portion of the base. The key is free to slide laterally from right to left in the slot and as it slides, it remains perpendicular to the

underside 10a of the table top and the central portion 44a of the base.

When the key is within the slot, its legs are disposed on opposite sides of rack 42. The lower edge of the key between the two legs is stepped up from a lower step 61 adjacent to leg 50 to an upper step 62 adjacent to leg 52. The lower step 61 is sufficiently high that it clears the upper edges 42a of the rack between its teeth but not high enough to clear the upper edges 42b of the teeth. The upper step 62 clears the upper edge 42b of the teeth.

When the key slides to a position in which the rack is vertically beneath the upper step 62, the key allows plate 44 to slide along the rails. When however the rack is vertically beneath step 61, the step is located between two adjacent teeth of the rack and the two teeth then prevent the movable plate from sliding along the rails.

A cover 70 fits over the base of the strut-retainer. The cover has slots 72 on its side walls for the key so that the key can be manipulated from outside the cover. Slots 74 are also provided for the web 16a of the strut.

The location of the strut-retainer on the underside of the table top governs the location of the web of the strut since the web is attached to the retainer and the location of the web governs the slope or angle of the table top. The front wall of the table top tilts downward as the web of the strut approaches the front wall 80 of the table top and tilts upward as the web moves in the opposite direction.

Adjustment of the angle of the table top is accomplished by means of key 48. With

reference to Figure 5, when the right end of the key is pushed inward to cause it to move to the left, the upper step 62 moves until it is vertically above the rack. The outside edge of leg 50 prevents it from moving further. The slidable plate is then free to move along the rails and as it does the angle of the table top changes. When the table top is at the correct angle, the left end of the key is pushed inward thereby causing its lower step 61 to move vertically over the rack where it is received between two teeth, The key then serves to immobilize the table top at the correct slope or angle.

The shape of the key is such that at the limit of its travel to the left, distal portion 56 protrudes outwardly from side wall 70a of the cover while distal portion 58 is substantially flush with the other side wall 70b of the cover. At that limit of travel, the outside edge of leg 50 is in contact with an end of slot 46. Conversely, when the key is at its other limit, distal portion 58 protrudes from the side wall 70b of the cover while the outer edge of distal portion 56 is flush with side wall 70a At this time, the outside edge of leg 52 is in contact with the other end of slot 46.

In summary, when the key has reached its limit of travel to the left, the rack is vertically beneath the upper step 62 and slidable plate can be slide along rails 40 whereas when the key has reached its limit of travel to the right, the rack is vertically beneath the lower step 61 and the slidable plate is immobilized.

The table of the invention when not in use can be folded for storage. To order to fold the

table, first the lock pins in the leg assembly are squeezed to disengage the assembly from the foot assemblies. The feet are then turned 90 degrees so that they are parallel to the central portion 12a of the leg assembly. The ends of the strut are then withdrawn from the apertures in the leg assembly. The legs can then be folded flat onto the underside of the table top.

It will be understood, of course, that modifications can be made in the structure of the table which is described herein without departing from the scope and purview of the invention as defined in the appended claims.

I claim:

1. A foldable table comprising: a table top having an upper surface and an underside, said underside having a leg retainer, a track, a rack and a strut-retainer, said strut-retainer being movable in said track and having a key selectively engageable with said rack for preventing said strut-retainer from moving in said track; a leg assembly pivotal with respect to said leg retainer and having a foot assembly adapted to rest on a surface with resulting supporting of said table in an upright position; and a strut extending from said strut-retainer to said leg assembly for preventing pivoting of said leg assembly

2. The foldable table of claim 1 wherein said rack has a plurality of teeth and said key is slidable relative to said teeth, said key having a protrusion which, upon sliding of said key, slides from a first position in which said protrusion is in a space between adjacent said teeth with resulting stoppage of the movement of said strut-retainer in said track to a second position in which said protrusion is out of said space and allows movement of said strut-retainer in said track.

Application number / numéro de demande: 2584341

Figures: 1, 2, 3, 4, 6,

Pages:

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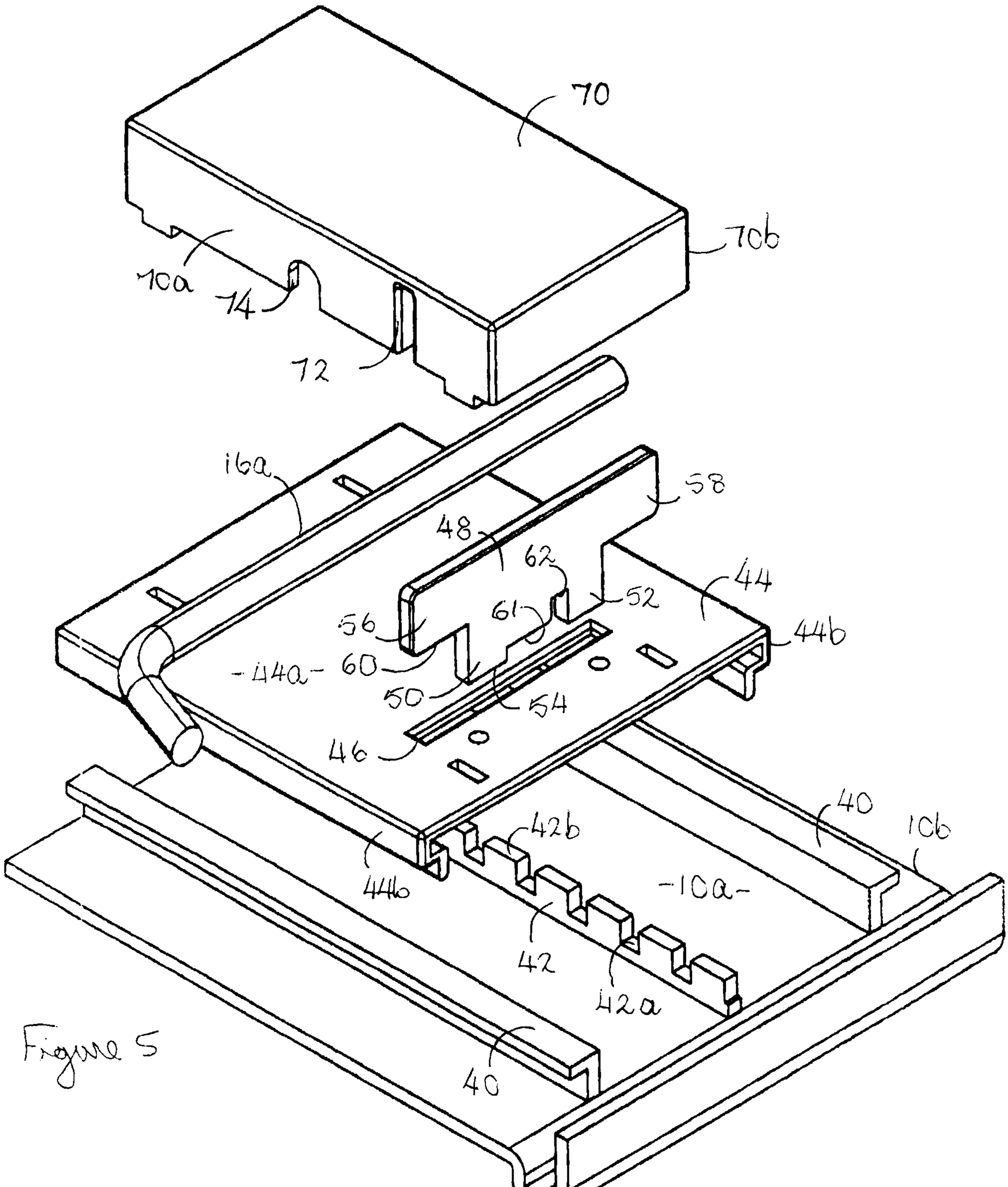
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106
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Figure 5