(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 536 055 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
12.09.2007 Bulletin 2007/37

(51) Int Cl.:
D06F 81/04 *(2006.01)* ***D06F 81/10*** *(2006.01)*

(21) Application number: **03380273.7**

(22) Date of filing: **27.11.2003**

(54) **Folding board for ironing**

Faltbares Bügelbrett

Table à repasser pliable

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

(43) Date of publication of application:
01.06.2005 Bulletin 2005/22

(73) Proprietor: **Rayen S.L.**
08850 Gava (Barcelona) (ES)

(72) Inventor: **Casajuana Lindhorst, Ivo**
08850 Gava (Barcelona) (ES)

(74) Representative: **PROPI, S.L.**
Jorge Juan, 19
28001 Madrid (ES)

(56) References cited:
GB-A- 2 256 877
GR-B- 1 002 477
US-A- 4 991 325

EP 1 536 055 B1

Description

OBJECT OF THE INVENTION

[0001] The present invention refers to an ironing board, i.e. to a support for clothing during ironing operations thereof, having a special application in the domestic scope.

[0002] The object of the invention is to achieve an optimal degree of foldability, determining a minimum space occupation for it in an inoperative state.

[0003] The invention is therefore within the scope of domestic use mechanical devices, and more specifically within the scope of ironing accessories.

BACKGROUND OF THE INVENTION

[0004] As is known, ironing boards receive this name since they were originally materialized in an elongated wooden platform that was basically rectangular, but having one of its ends narrowed with a triangular configuration, a platform supported by a generally metal structure suitably lifting it with regard to floor level so that the ironing is comfortable.

[0005] Currently, and even though the name "board" is maintained, the working platform has evolved into a metal structure, specifically a sheet metal structure, its contour being duly edged for strengthening its structure, the platform thus becoming lighter in weight and the useful life thereof being prolonged.

[0006] Since the use of ironing boards is sporadic within the aforementioned domestic scope, the working platform support is materialized in a scissor-type structure based on two double legs, such that one of them is hinge-connected to the lower face of the platform, whereas the other one is connected to the cooperation of slides, provided with locking means, so that said scissor can adopt a working position in which it suitably lifts the platform with regard to the floor, or so that it can be adapted to the lower face of the platform, converting the ironing board as a whole into an essentially flat element, which obviously facilitates storage thereof.

[0007] However, the dimensions of the ironing board in said inoperative state are determined by the working platform dimensions, from which platform the legs or support structure noticeably project at its ends.

[0008] This implies that even though the ironing board tends to have the flat configuration in said inoperative state, its length substantially limits its storage possibilities, since it requires a space for that purpose, for example, a closet, the height of which at least coincides with the length of the platform, and in most cases even exceeding said length.

[0009] GR 1002477 discloses a foldable ironing board according to the preamble of claim 1.

DESCRIPTION OF THE INVENTION

[0010] The foldable ironing board proposed by the invention solves the drawbacks set forth above, since not only does it allow drastically reducing its dimensions with regard to the conventional art, but rather it also allows substantially reducing said dimensions with regard to length, such that the longitudinal height of the ironing board in an inoperative state approaches a value which is half of the longitudinal height of the working platform in an operative state, therefore the dimensions of the storage space used for that purpose can be considerably smaller, practically half of those required for conventional boards.

[0011] Therefore, and more specifically, the working platform is fragmented into three hinged sectors, an intermediate and majority sector, and two end sectors folding over the upper face of said intermediate sector through hinging means limiting the degree of swing between this limit position of folding over the central sector and another stable limit position in which the other three sectors of the platform are coplanar.

[0012] Complementarily and according to another feature of the invention, the support structure, materialized in a "scissor"-type structure, as is conventional, connected to the lower face of the platform, as is also conventional, but specifically to the intermediate sector thereof, presents the particularity that each one of its legs is fragmented into two hinged spans, which are also susceptible to maintaining two limit positions with a stable character, one position in which each end span is laterally and parallelly coupled to the nearest span, corresponding to the folded position, and another position in which it is placed in a position opposite thereto, as an extension of it, in correspondence with the operative state of the ironing board.

[0013] Thus, not only is the length of the working platform in the folded position reduced to half, but the length of the support structure folded over the lower face of said platform is also reduced to half.

DESCRIPTION OF THE DRAWINGS

[0014] To complement the description being made and for the purpose to aid in better understanding the features of the invention according to a preferred practical embodiment thereof, a set of drawings is attached as an integral part of said description, a set of drawings in which the following has been shown with an illustrative and non-limiting character:

Figure 1 shows an upper-side perspective view of the working platform of a foldable ironing board, which is unfolded, carried out according to the present invention.

Figure 2 shows a view similar to the previous figure, but in which the end sectors of the working platform are folded over the intermediate sector.

Figure 3 shows a lower plan view of the working platform in the unfolded position shown in figure 1.

Figure 4 shows a side elevational, plan, profile and perspective view of the link acting as the hinged connection means between each pair of platform sectors.

Figure 5 shows views similar to those of figure 4, but corresponding to the rods connecting each platform sector with the corresponding link.

Figure 6 shows a perspective view of a detail of the working platform support structure of the previous figures, said support structure being in the unfolded position.

Figure 7 shows, also according to a perspective view, the structure of the previous figure in the folded position.

Figure 8 shows a plan view of the assembly shown in figure 6.

Figure 9 shows a likewise plan view of the assembly shown in figure 7.

Figure 10 shows two perspective views of the hinging part for the two spans of each support structure leg.

Figure 11 shows a side elevational and profile view of the part of the previous figure, a profile in which the fixing of the two leg spans is seen in both the folded and unfolded position.

Figure 12 shows a profile view of the foldable ironing board as a whole in a working position.

Figure 13 shows another profile view of the assembly shown in the previous figure, in which the end sectors of the working platform have been folded over the central sector.

Figure 14 again shows a profile view of the assembly of figures 12 and 13, with the scissor-type support structure folded.

Figure 15 finally shows the last operative folding sequence of the ironing board, in which the two spans of each leg have been folded over one another to drastically shorten its length.

PREFERRED EMBODIMENT OF THE INVENTION

[0015] In view of the figures described, it can be seen how the ironing board proposed by the invention is constituted of a reliable working platform dimensionally similar to that of a conventional ironing board, but with the special particularity that three hinged sectors are defined therein, an intermediate, majority sector (1) and two end sectors (2) and (3).

[0016] In correspondence with the hinged connection edges of said sectors (1), (2) and (3), these incorporate respective centered rectangular notches (4) having a considerable length and limited depth, between which a link (5) is housed, between each sector pair, said link materialized in a "U"-shaped part, especially visible in the detail shown in figure 4, provided on its side branches with a pair of holes (6) intended for allowing the through passage of respective pivot shafts (7), each one of them materialized in an annular rod, especially visible in figure 5, with an orthogonal bending (8) on its ends allowing adaptation of its branch (7) to the lower face of the corresponding sector (1), (2) and (3) to which it is fixed by means of welding, at the same time allowing the ends of said shaft (7) to go through the edge (9) of the metal plates constituting the platform (1), (2) and (3) at a mid-height level of said edge.

[0017] Furthermore, each rod incorporates an outwardly projected broad intermediate span (10), opposite to the shaft (7), intended for acting as a stop on the adjacent rod corresponding to the same hinge in the unfolded limit position of the working platform, and as is shown in figure 3, such that said rods (7) not only constitute pivot shafts of each link (5) with regard to sectors (1), (2) and (3) of the working platform, allowing folding of end sectors (2) and (3) over the intermediate sector (1), but rather they also act as unfolding limiting means ensuring that, in the working position shown in figure 1, the three sectors (1), (2) and (3) of the repeatedly mentioned platform are perfectly coplanar with one another and with the upper face of the links (5) occupying the spaces defined by the notches (4).

[0018] The conventional scissor-type structure based on two double legs (11-11'), connected to one another at their mid-area by means of a transverse pivot shaft (12), are hinge-connected to the lower face of the intermediate sector (1) of the working platform, one pair of legs (11) being hinge-connected to the lower face of the platform, whereas the other double leg (11') is connected through a sliding runner with locking means, which are not shown in the drawings as they are entirely conventional, the features of the invention, with regard to the support structure, being focused on the fact that both pairs of legs (11-11') are fragmented into two spans hinge-connected to one another, such that the pair of legs (11) extends into an end span (13), whereas the pair of legs (11') extends into another end span (13'), all of them connected by means of a transverse connecting rod (14) near their free end and suitably welded to said elements.

[0019] For the hinged connection between the first span (11-11') and the second span (13-13') of each leg, a hinging part (15), shown in detail in figures 10 and 11, has been provided, adopting a grooved configuration, having a "U"-shaped section, one side branch (16) of which is provided with an internal inflection (17) at the level of its entrance opening, determining a restriction of said entrance opening, keeping the spans (11) and (13) of the corresponding leg stable, in the unfolded position for said spans shown in figure 6, as well as in the folded position shown in figure 7. This hinging part (15) is logically provided with a hole (18) centered on each one of its side branches for passage of the corresponding pivot shaft.

[0020] According to this structure and from a position of the ironing board such as that shown in figure 12, which provides the user with a working platform having conven-

tional dimensions and an also conventional working height, the board is susceptible to drastically reducing the length of its working platform, as shown in figure 13, and, after folding its scissor-type support structure, as shown in turn in figure 14, also drastically shortening the length of its legs so that the latter do not project from the already folded working platform, as shown in figure 15, achieving a drastic reduction of the general volume of the ironing board in said folded position.

Claims

1. A foldable ironing board, of the type incorporating an elongated working platform being hinge-connected and connected by a slide thereto, **characterized in that** said working platform rests on a scissor-type support structure which can be folded over the lower face of said platform and is constituted of three hinged sectors (1), (2) and (3), specifically a majority and intermediate sector (1), on the upper face of which the end sectors (2) and (3) can be folded in an inoperative state of the assembly, said sectors being connected to one another through hinging means (5) simultaneously acting as limiting elements of the degree of swing of the end sectors (2) and (3), limiting them to a position coplanar with the intermediate sector (1), it also having been provided that each leg of the lower support structure be in turn fragmented into two hinged spans allowing the shortening thereof when the board is in an inoperative state, such that the support structure does not project from the ends of the intermediate sector (1) of the working platform in said folded position.

2. A foldable ironing board according to claim 1, **characterized in that** the three sectors constituting the working platform incorporate, in correspondence with their hinge-connected edges, respective rectangular notches (4), having a considerable width and limited depth, in the cavity of which a hinging link (5) moves, which link is materialized in a "U"-shaped part, provided on each one of its side branches with a pair of holes (6) for the passage of respective pivot shafts, materialized in respective rods (7) having an annular and elongated configuration, which are fixed by welding to the edge of the plate constituting the sectors (1), (2) and (3) of the platform, and which, in their span (10) parallel to the sector constituting the pivot shaft (7), outwardly project, forming pivot limiting stops for the end sectors (2) and (3) of the platform when the rod of the latter acts on the corresponding rod of the intermediate sector (1).

3. A foldable ironing board according to claim 1, **characterized in that** the two spans of each leg (11-13), (11'-13') are hinge-connected to one another through a hinging part (15), having a "U"-shaped configuration, with holes (18) on its side branches for the passage of the pivot shaft between said spans, with the particularity that one of the side branches (16) of the part (15) incorporates an internal inflection (17), determining a restriction in the entrance opening of the part itself, acting as a stable retention means for the end span (13-13') of the corresponding leg in a folded as well as unfolded position thereof.

Patentansprüche

1. Ein klappbares Bügelbrett, von der Art, die eine verlängerte Arbeitsplattform einschließt, wobei diese gelenkverbunden und mittels einer Gleitführung mit dieser verbunden ist, **dadurch gekennzeichnet, dass** die besagte Arbeitsplattform auf einer scherenartigen Stützstruktur liegt, die über der unteren Seite der besagten Plattform zusammengeklappt werden kann und aus drei klappbaren Abschnitten (1), (2) und (3) gebildet ist, im Besonderen ein Mehrheits- und Zwischenabschnitt (1), auf dessen oberer Seite die Endabschnitte (2) und (3) in ruhendem Zustand der Baugruppe zusammengeklappt werden können, wobei die besagten Abschnitte über Gelenkmittel (5) miteinander verbunden sind, die gleichzeitig als begrenzende Elemente mit dem Schwenkgrad der Endabschnitte (2) und (3) wirken und diese auf eine planparallele Position gegenüber dem Zwischenabschnitt (1) begrenzen, wobei ebenso vorgesehen wurde, dass jeder Schenkel der unteren Stützstruktur seinerseits in zwei klappbare Bereiche unterteilt ist, die die Verkürzung derselben erlauben, wenn sich das Brett nicht im Betrieb befindet, so dass die Stützstruktur in der besagten zusammengeklappten Position nicht über die Enden des Zwischenbereichs (1) der Arbeitsplattform herausragt.

2. Ein klappbares Bügelbrett nach Anspruch 1, **dadurch gekennzeichnet, dass** die drei Abschnitte, die die Arbeitsplattform bilden, in Übereinstimmung mit ihren gelenkverbundenen Ecken entsprechende rechteckige Kerben (4) einschließen, die eine beträchtliche Breite und eine begrenzte Tiefe besitzen, in dessen Hohlraum sich eine Gelenkverbindung (5) bewegt, dessen Verbindung in einem U-förmigen Element ausgeführt ist, das auf jedem einzelnen seiner Seitenausläufer mit einem Paar Öffnungen (6) für den Durchlass von entsprechenden Zapfstiften ausgestattet ist, die in entsprechenden Stangen (7) verkörpert sind, die eine ringförmige und verlängerte Ausführung besitzen, die mittels Schweißen an der Ecke der Platte befestigt sind, die die Abschnitte (1), (2) und (3) der Plattform bildet, und die in ihrem zu dem den Zapfenstift (7) bildenden Abschnitt parallelen Bereich (10) nach außen hervorragen, wobei

Zapfen begrenzende Anschläge für die Endabschnitte (2) und (3) der Plattform gebildet werden, wenn der Stange des letzteren auf der entsprechenden Stange des Zwischenabschnitts (1) einwirkt.

3. Ein klappbares Bügelbrett nach Anspruch 1, **dadurch gekennzeichnet, dass** die beiden Bereiche jedes Schenkels (11-13), (11'-13') mittels eines Gelenkelements (15) gelenkverbunden sind, wobei diese eine U-förmige Ausführung mit Öffnungen (18) an dessen Seitenausläufer für den Durchlass des Zapfenstifts zwischen den besagten Bereichen besitzen, mit der Besonderheit, dass einer der Seitenausläufer (16) des Elements (15) eine innere Biegung (17) einschließt, die eine Beschränkung der Eingangsöffnung des Elements selbst bestimmt, die als ein festes Rückhaltmittel für den Endbereich (13'-13') des entsprechenden Schenkels sowohl in einer zusammengeklappten als auch ausgeklappten Position desselben agiert.

Revendications

1. Une planche à repasser pliante, du type qui inclut une plateforme de travail allongée, sur une structure de support de type ciseaux qui peut être pliée sur la face inférieure de la dite plateforme, étant connectée par charnière et y étant connectée par une glissière, **caractérisée en ce que** cette dite plateforme de travail est appuyée sur une structure de support de type ciseaux qui peut être pliée sur la face inférieure de la dite plateforme et est constituée par trois secteurs à charnières (1), (2) et (3), spécifiquement un secteur majoritaire et intermédiaire (1), sur la face supérieure de laquelle les secteurs finaux (2) et (3) peuvent être pliés dans un état inopérant de l'assemblage, les dits secteurs étant connectés les uns aux autres par des moyens de charnière (5) agissant simultanément en tant qu'éléments de limitation du degré d'oscillation des secteurs finaux (2) et (3), en les limitant à une position coplanaire avec le secteur intermédiaire (1), et est aussi fournie avec chaque pied de la structure de support inférieur étant à son tour fragmenté en deux espaces à charnières permettant le raccourcissement de ceux-ci quand la planche est en étant inopérant, d'une telle façon que la structure de support ne fait saillie pas sur les éléments finaux du secteur intermédiaire (1) de la plateforme de travail dans la dite position pliée.

2. Une planche à repasser pliante selon la revendication 1, **caractérisée en ce que** les trois secteurs qui constituent la plateforme de travail incorporent, en accordance avec leurs bords connectés par charnière, des encoches rectangulaires respectives (4), ayant une largeur considérable et une profondeur limitée, dans la cavité de laquelle une articulation à charnières (5) bouge, laquelle est matérialisé par une partie en forme de « U », avec, sur chacune des branches latérales, une paire de trous (6) pour permettre le passage des axes basculants respectifs, matérialisés dans des barres respectives (7), ayant une configuration annulaire et allongée, lesquels sont fixés par une soudure sur le bord de la plateforme constituant les secteurs (1), (2) et (3) de la plateforme, et lesquels, dans leurs espaces (10) parallèles au secteur constituant l'axe de pivot (7), fait saillie sur l'extérieur, formant un pivot limitant les arrêts pour les secteurs finaux (2) et (3) de la plateforme quand la barre de ces derniers agit sur la barre correspondante du secteur intermédiaire (1).

3. Une planche à repasser pliante selon la revendication 1, **caractérisée en ce que** les deux espaces de chaque pied (11-13), (11'-13') sont connectés par charnière les uns aux autres par un élément de charnières (15), ayant une configuration en forme de « U », avec des trous (18) sur les branches latérales pour le passage de l'axe de pivot entre les dits espaces, avec la particularité que l'une des branches latérales (16) de l'élément (15) intègre une inflexion interne (17), déterminant une restriction de l'ouverture d'entrée de l'élément lui-même, agissant en tant que moyen de rétention stable pour l'espace final (13-13') du pied correspondant, dans une position pliée et non-pliée de celui-ci.

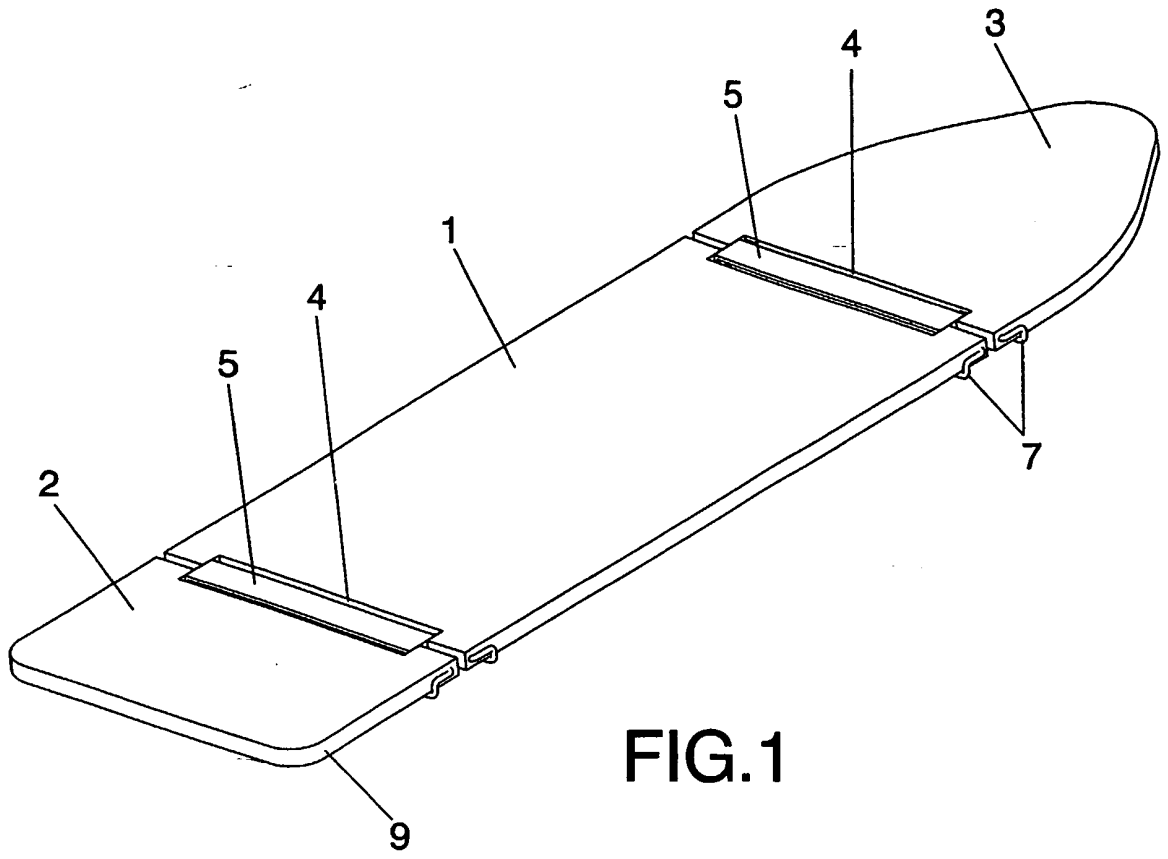

FIG.1

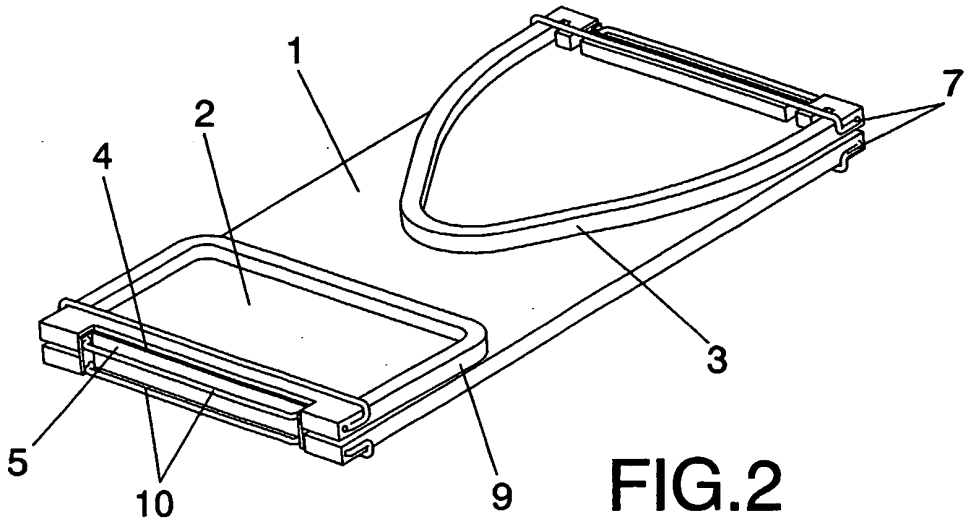

FIG.2

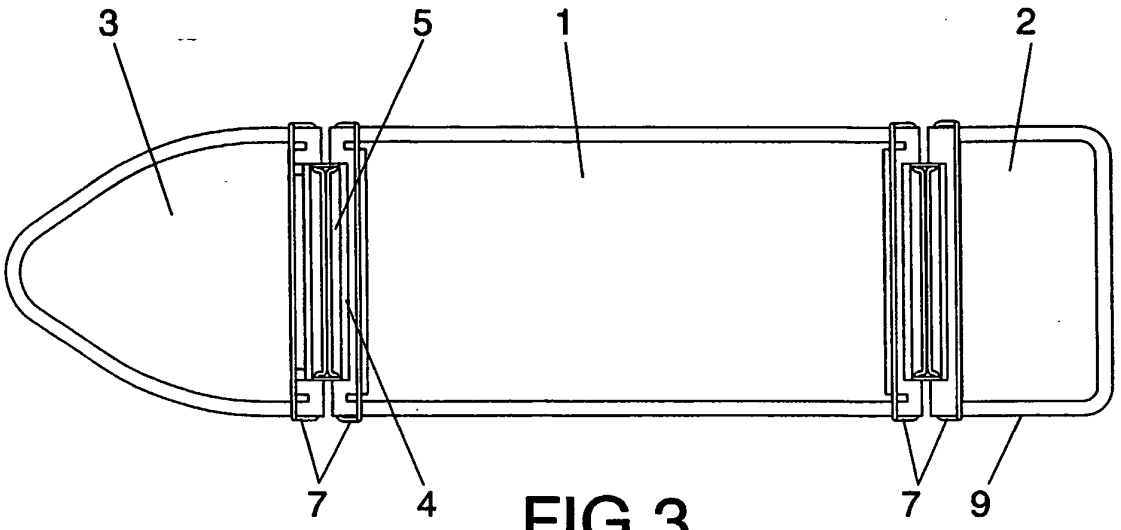

FIG.3

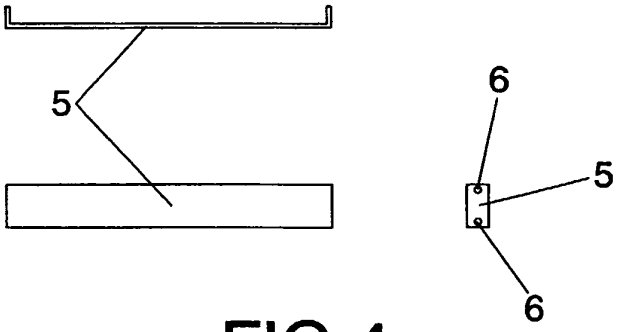

FIG.4

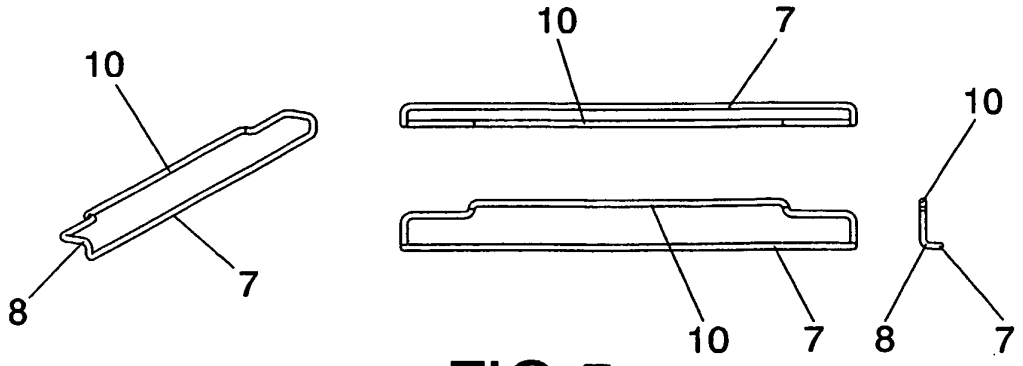

FIG.5

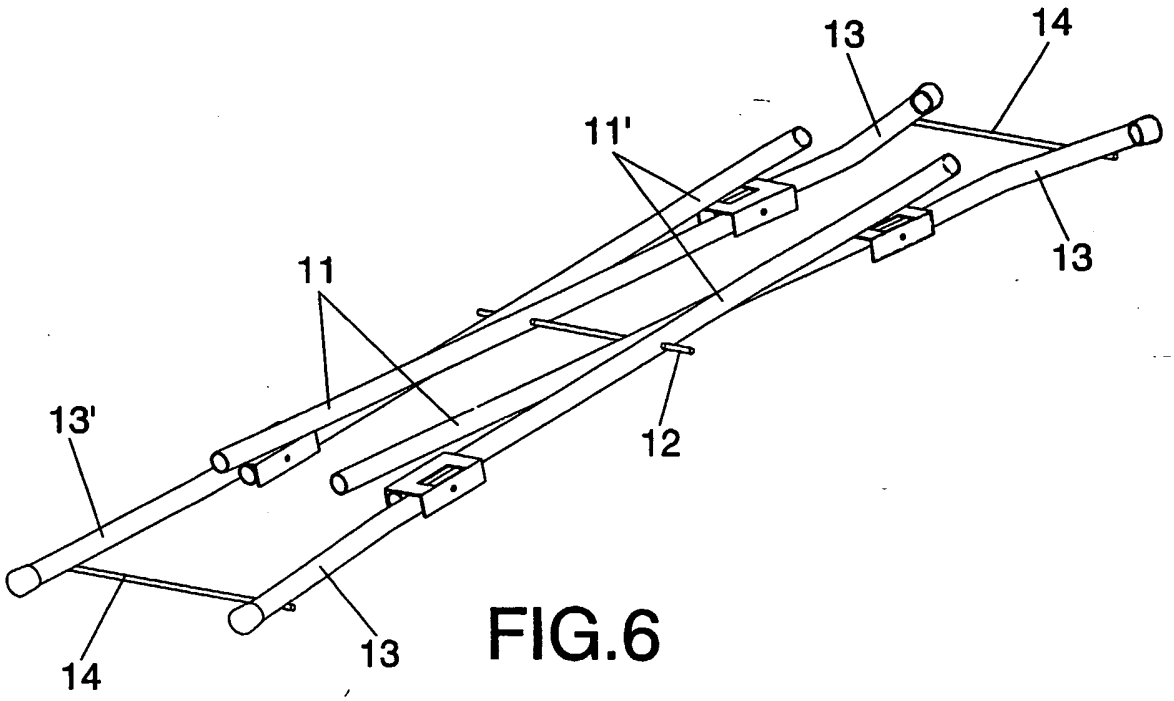

FIG.6

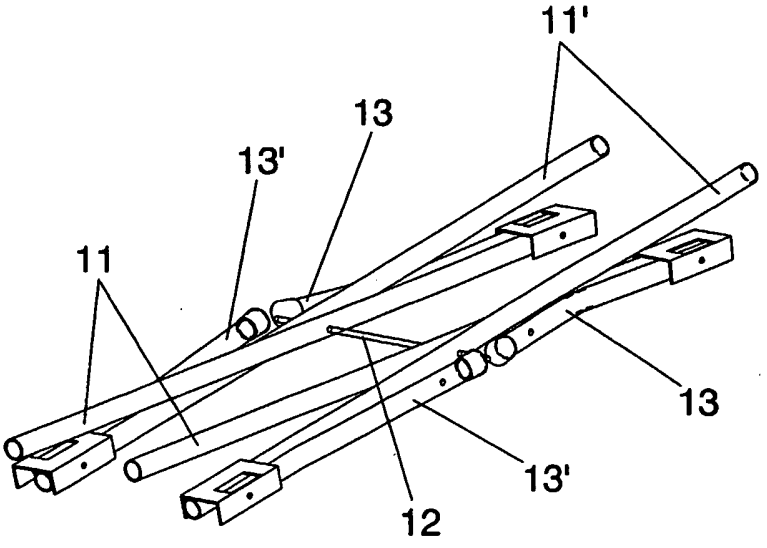

FIG.7

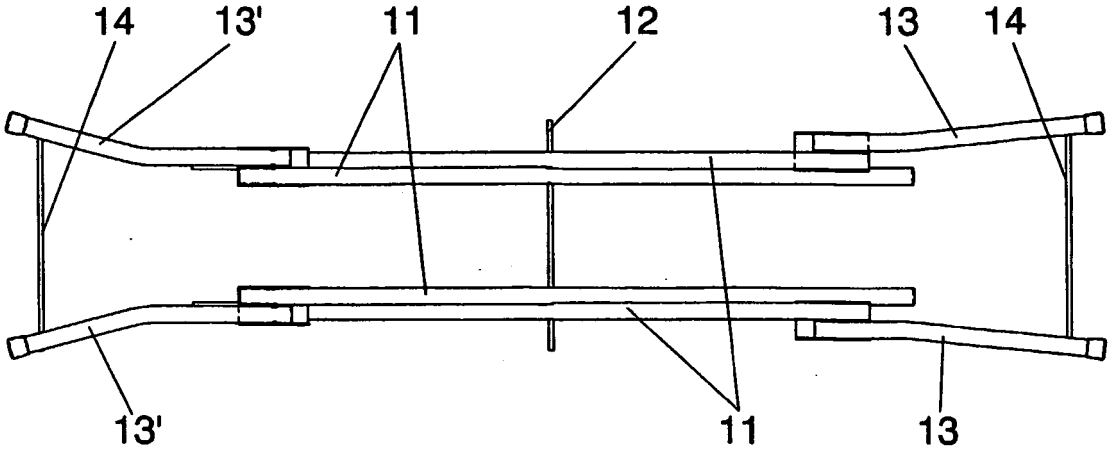

FIG.8

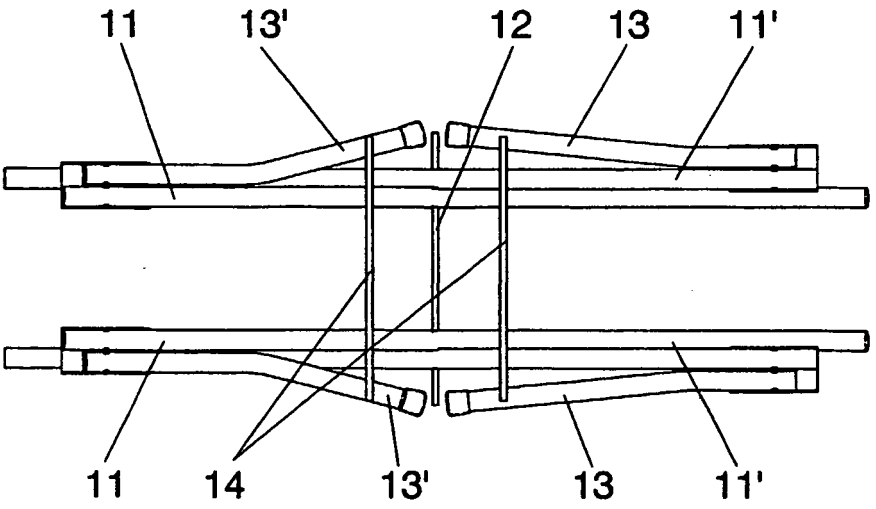

FIG.9

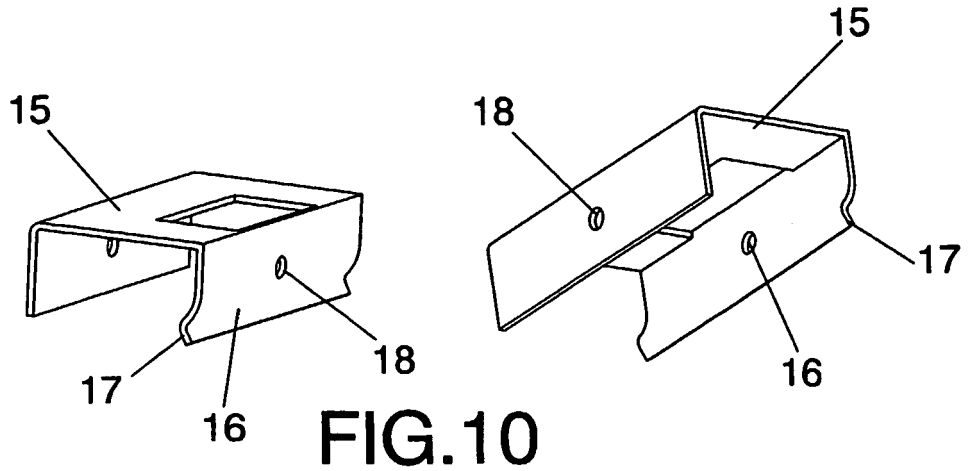

FIG.10

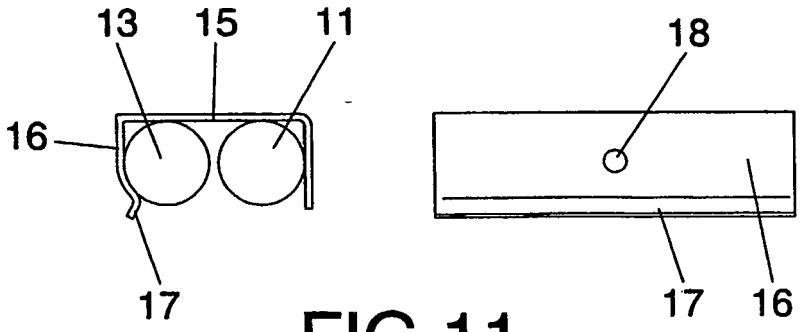

FIG.11

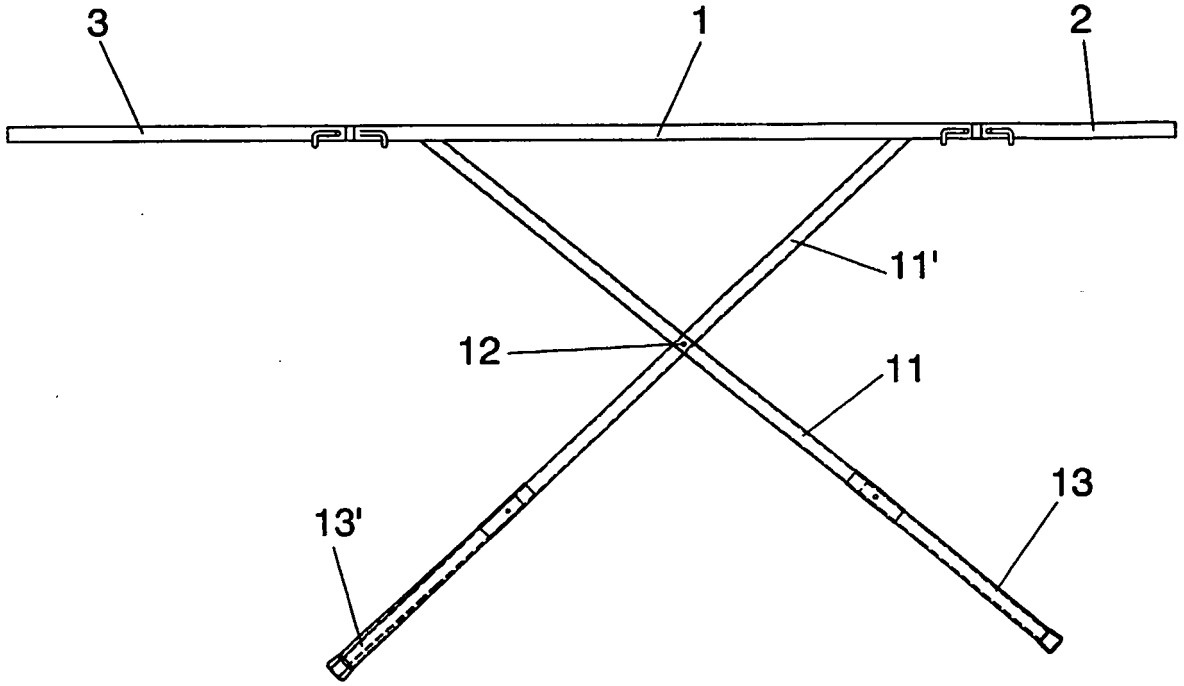

FIG.12

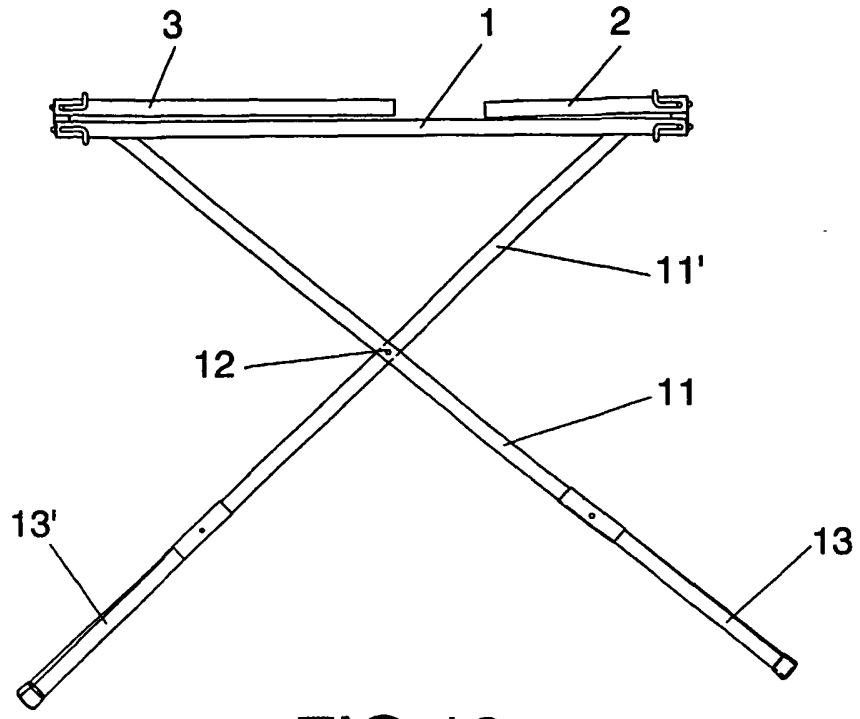

FIG.13

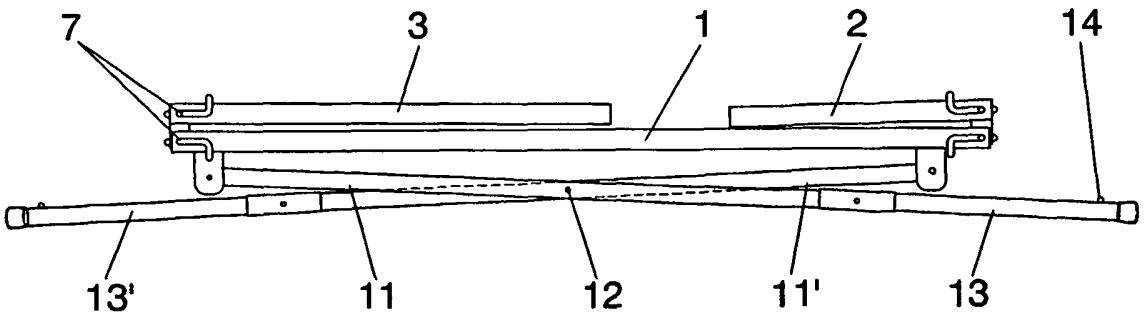

FIG.14

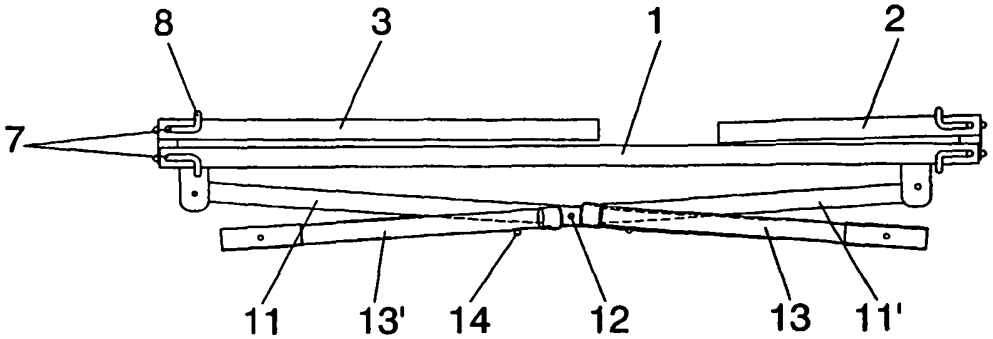

FIG.15