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

(11) Publication number: **0 073 640**
B1

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **16.04.86**

(51) Int. Cl.[4]: **A 47 B 3/12**

(21) Application number: **82304468.0**

(22) Date of filing: **25.08.82**

(54) **Collapsible furniture.**

(30) Priority: **28.08.81 GB 8126392**

(43) Date of publication of application:
09.03.83 Bulletin 83/10

(45) Publication of the grant of the patent:
16.04.86 Bulletin 86/16

(84) Designated Contracting States:
AT BE CH DE FR GB IT LI LU NL SE

(56) References cited:
DE-A-1 946 626
DE-B-1 126 085
FR-A- 639 816
FR-A-2 238 451
GB-A- 24 599
GB-A- 396 166
GB-A- 772 116
US-A-2 591 797
US-A-2 947 587
US-A-3 835 795

(73) Proprietor: **Fray, Barry Norman**
95 Little Lane
Ilkley West Yorkshire (GB)

(72) Inventor: **Fray, Barry Norman**
95 Little Lane
Ilkley West Yorkshire (GB)

(74) Representative: **Behrens, Clemency Anne Susan**
c/o CAS Behrens & Co Birstwith House
Birstwith Harrogate North Yorkshire HG3 2NG
(GB)

EP 0 073 640 B1

Courier Press, Leamington Spa, England.

Description

The present invention relates to collapsible table systems which incorporate collapsible tabling.

Existing collapsible tables come in many forms. The most stable are those which comprise a base having sides which move towards each other to fold without detaching or folding legs. The sides are held out in the erect position by engagement with the table top. Two such prior tables are disclosed in U.S. Patent Specification No. 2,947,587 and DE—B—1,126,085. In both these designs, the table frame, when collapsed, is very bulky and the former has the additional disadvantages of being difficult to stack and a weakness in rigidity. While these difficulties are not significant for a single table, if the same principles were to be incorporated in a multi-table system the problems would become significant.

U.S. Patent Specification No. 4,112,855 describes a collapsible table with four pairs of legs, the legs of each pair being joined together by a connector to form a rigid side and the four sides being hinged together to form a collapsible parallelogram. A single piece of tubing is used to form one side (two legs and a connector) which means that there is a curved portion at the corners. This firstly does not support the table top throughout the length of the frame leading to a weakness in rigidity of the table so that the design is not suitable for longer tables or workbenches. Secondly the design is not adaptable to a system of interconnected tables.

Collapsible tabling has been used to construct adjustable format table systems but these usually involve peripheral equipment, such as a spanner, as in French Patent Specification No. 2,238,451.

It is the object of the invention to provide a collapsible table system which can be extended to form an adjustable format. It is a further object that the table system be simple to assemble and dismantle without tools and which can be stored in a minimum of space, while ensuring a complete rigidity when erected.

According to the present invention there is provided a table system comprising two collapsible base frames and one or more table tops, the or each table top including means for engaging the respective frame on which it is supported to hold the top in place, and each base frame comprising four pairs of legs, the legs of each pair being joined together by a respective connector to form a rigid side and the four sides being hinged together to form a collapsible parallelogram characterised in that the legs and the connectors are of rectangular cross-section and wherein the table system comprises a linking frame having no legs and rectangular section sides, two sides each comprising two link members which are adapted to form a mating engagement with the legs of one side of a respective base frame, whereby the linking frame is carried, in use, by the two base frames and the means whereby the or each table top engages a respective base frame includes battens adapted to contact the inside wall of the connectors on the base frame.

By using the tops of the legs to form a mating engagement with the link members of the linking frame an extra adaptability and simplicity is obtained. With no extra parts the linking frame can be connected to any side of the base frame enabling many different multi-table systems to be envisaged. Where more than one table top is used, the present system enables the tops to be fitted so that their ends abut with no gap between sections and with support throughout the length of the table top.

Brief Description of the Drawings

One embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings in which:—

Figure 1 is a general perspective view of a table according to the present invention, erected,

Figure 2 is a general perspective view of the frame of the table of Figure 1 partially collapsed,

Figure 3 is a perspective view of the underside of the top of the table of Figure 1,

Figure 4 is a cross-section of the table of Figure 1 and

Figure 5 is a top view of a linking piece illustrating its attachment to a frame for connecting two frames.

The table illustrated in the drawings comprises a flat surface table top 11 and a collapsible base frame 12. The frame 12 is a parallelogram of four sides 13 hinged internally at the corners so that the frame can be folded for storage or transportation, or made rectangular for use. Each side 13 comprises two legs 14 and at least one rigid connector or cross member 15 which can be welded or otherwise joined to the legs 14. Additional legs 14 or cross members like the connector 15 or other strengthening bars can be provided. Means can also be provided for supporting lower shelves. The sides are hinged together by hinges 16, which may be a single piano hinge for each corner, or a pair of separate hinges at each corner.

In the illustrated embodiment, the table top 11 has at least one batten 17 on each side, positioned so as to contact the connector 15 from the inside to hold the frame 12 square with respect to the table top. Other contacting means could be used, such as a continuous lip on each side. In one embodiment the table frame is held square by lugs at the corners which engage inside the frame. Once the table top has been located in position it may be held there, for example by pivot clips 18 which lie along the batten or lip 17 when the top 11 is being fitted and pivot to clip under the connector 15 for securing the top 11.

The table top can be made out of wood, plastics material, melamine or glass, and the frame can be metal, wood or plastics material or any combination of these. The top can be any suitable shape.

The base frame 12 collapses laterally by moving two sides towards each other, once the top has been removed, as illustrated in Figure 2. The

folded frame can be easily stored and transported and involves no wasted space.

To assemble the table, the frame is first made rectangular and the top is then dropped into the frame from above and the battens 17 engage inside the connector 15.

Where there are pivot clips 18, these are then rotated under the connector. A table thus erected is not liable to be collapsed accidentally, only by the removal of the top.

To create a table system two base frames 12 are connected together by a linking frame 20. The frame 20 comprises rectangular section sides 21, two of which carry link members in the form of lugs 19. The lugs 19 of each side of the frame 20 engage in seatings 22 at the top of the legs 14 of one side of a respective base frame 12. The side of the frame 20 abuts the legs 14 of the base frame 12. Each linking frame 20 will connect one side of one base frame 12 to one side of an adjacent base frame. Although the shape of the base frame is not material, small square base frames are most practical. A number of frames can be used with linking frames 20 to provide tables of different shapes and sizes. The table top for the construction can either be in a single piece or in two or more pieces. In either case means must be provided for holding the base frames 12 square. The table top or tops extend across the frames 12 and the linking frame or frames 20 with no gap between tops. It will be appreciated that with enough frames and linking pieces different format table systems can be built from the same equipment, thus providing a versatility not previously available.

Claims

1. A table system comprising two collapsible base frames (12) and one or more table tops (11), the or each table top including means for engaging the respective frame (12) on which it is supported to hold the top in place, and each base frame (12) comprising four pairs of legs (14), the legs of each pair being joined together by a respective connector (15) to form a rigid side and the four sides being hinged together to form a collapsible parallelogram characterised in that the legs (14) and the connectors (15) are of rectangular cross-section and wherein the table system comprises a linking frame (20) having no legs and rectangular section sides, two sides each comprising two link members (19) which are adapted to form a mating engagement with the legs (14) of one side of a respective base frame (12), whereby the linking frame (20) is carried, in use, by the two base frames (12) and the means whereby the or each table top engages a respective base frame (12) includes battens (17) adapted to contact the inside wall of the connectors (15) on the base frame (12).

2. A table system according to claim 1 characterised in that the link members (19) are in the form of lugs and the legs are each formed with a seating at the top thereof to receive a said lug.

3. A table system according to claim 1 or 2 characterised in that the battens contact the connectors for substantially the whole length of each connector contacted.

Patentansprüche

1. Tischanordnung, bestehend aus zwei zusammenklappbaren Basis-Rahmen (12) und einer oder mehreren Tischplatten (11) mit Mitteln zum Verbinden der zugehörigen Rahmen (12) mit diesen als Träger für das Halten der Tischplatten in der Gebrauchslage, wobei jeder Basis-Rahmen (12) vier Beinpaare (14) aufweist, von denen die Beine eines jeden Paares über eine zugehörige Querstrebe (15) verbunden sind zur Bildung eines starren Seitenteils, und wobei die vier Seitenteile zu einem faltbaren Parallelogramm gelenkig miteinander verbunden sind, dadurch gekennzeichnet, daß die Beine (14) und die Querstreben (15) rechteckförmigen Querschnitt aufweisen, daß die Tischanordung einen Gelenkrahmen (20) ohne Beine und ohne rechtwinklige Seitenteile umfaßt, in dem zwei Seitenteilen je zwei Verbindungsglieder (19) zugeordnet sind, die mit den zugehörigen Beinen (14) je eines Seitenteiles je eine Steckverbindung für den Aufbau des Gelenkrahmens (20) bilden, der im Gebrauch durch die zwei Basisrahmen (12) und durch die Mittel gehalten ist, durch die jede Tischplatte mit dem zugehörigen Basisrahmen (12) verbunden ist, welche Leisten (17) umfassen, die an den Innenseiten der Querstreben (15) der Basisrahmen (12) anliegen.

2. Tischanordnung nach Anspruch 1, dadurch gekennzeichnet, daß die Verbindungsglieder die Form von Einhängehaken (19) und jedes der Beine (14) am oberen Ende eine Aufnahme für den Eingriff der Einhängehaken aufweisen.

3. Tischanordnung nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Leisten (10) an den Querstreben (15) im wesentlichen über die ganze Länge anliegen

Revendications

1. Système de table comprenant deux châssis de base pliants (12) et un ou plusieurs plateaux de table (11), le ou chaque plateau comportant des moyens pour engager le châssis respectif (12) sur lequel il est supporté pour maintenir le plateau en place, et chaque châssis de base (12) comprenant quatre paires de pieds (14), les pieds de chaque paire étant reliés ensemble par un raccordement respectif (15) pour former un côté rigide et les quatre côtés étant articulés ensemble pour former un parallèlogramme pliant, caractérisé en ce que les pieds (14) et les raccordements (15) ont une section transversale rectangulaire, et en ce que le système de table comprend un châssis de liaison (20) n'ayant pas de pieds et ayant des côtés de section rectangulaire, deux côtés comprenant chacun deux organes de liaison (19) qui sont adaptés pour former un engagement d'emboîtement avec les pieds (14) d'un côté d'un châssis de base respectif (12), par quoi le châssis de liaison

(20) est porté, en service, par les deux châssis de base (12), et en ce que les moyens grâce auxquels le ou chaque plateau de table engage un châssis de base respectif (12) comportent des baguettes (17) adaptées pour venir en contact avec la paroi intérieure des raccordements (15) sur le châssis de base (12).

2. Système de table selon la revendication 1, caractérisé en ce que les organes de liaison (19) sont réalisés sous forme de pattes et en ce que les pieds comportent chacun un siège à leur extrémité supérieure pour recevoir une desdites pattes.

3. Système de table selon la revendication 1 ou 2, caractérisé en ce que les baguettes viennent en contact des raccordements sur sensiblement toute la longueur de chaque raccordement.

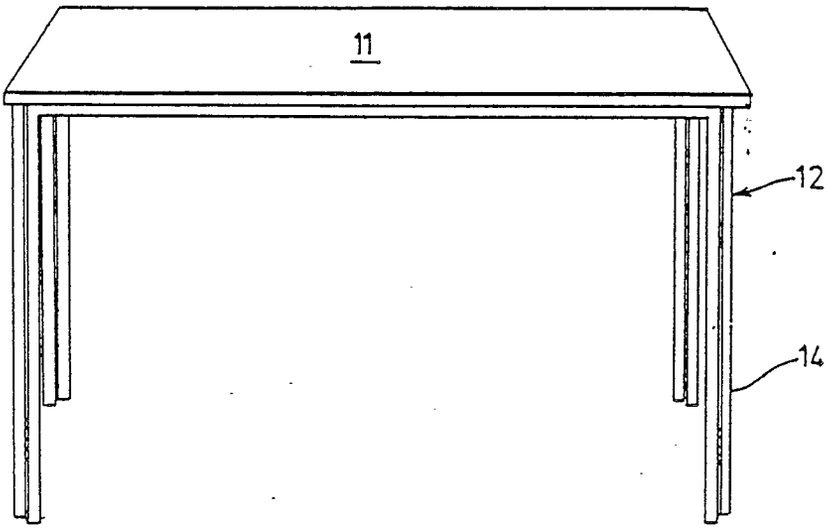

Fig.1.

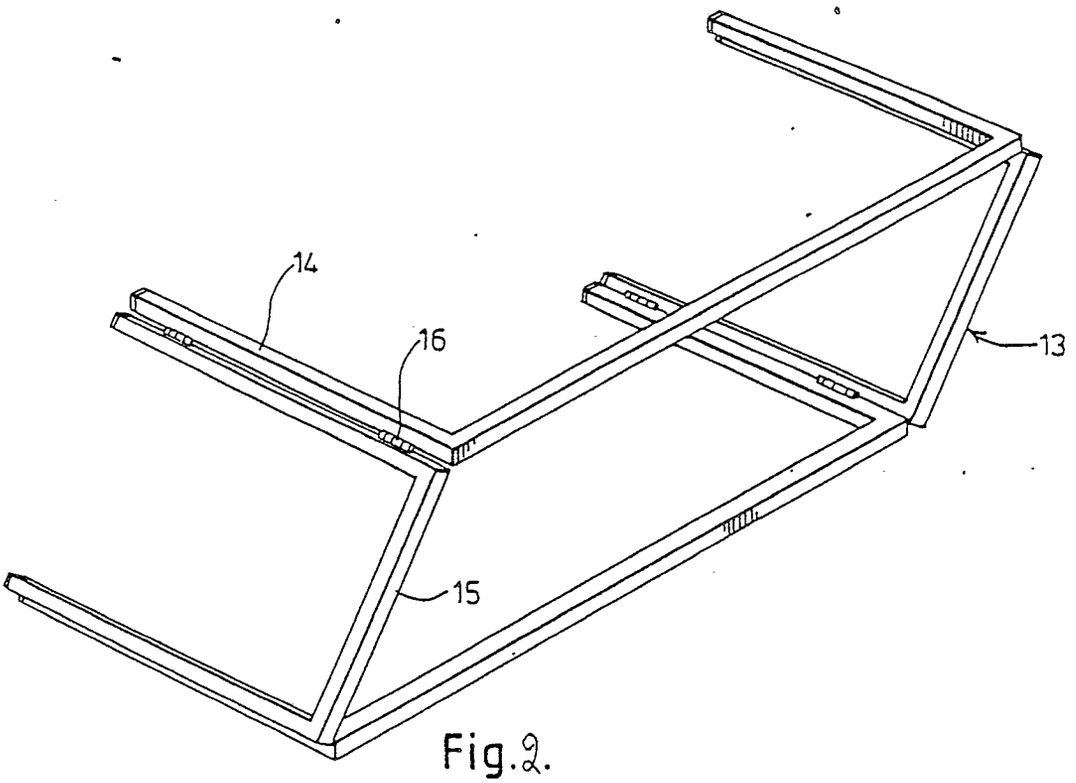

Fig.2.

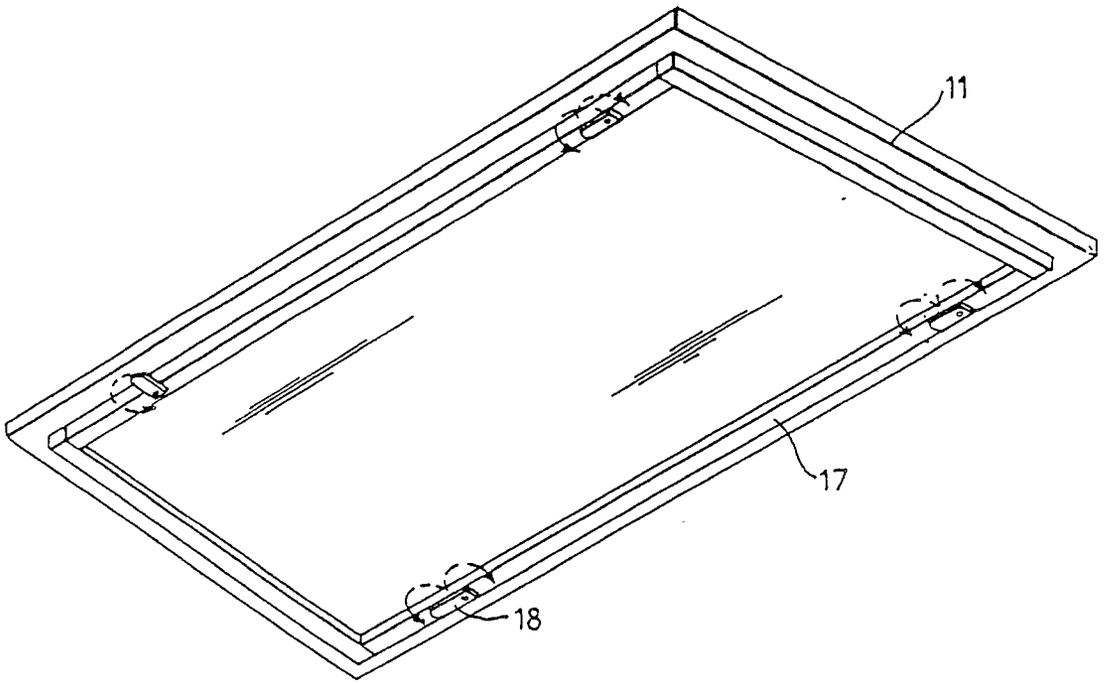

FIG.3.

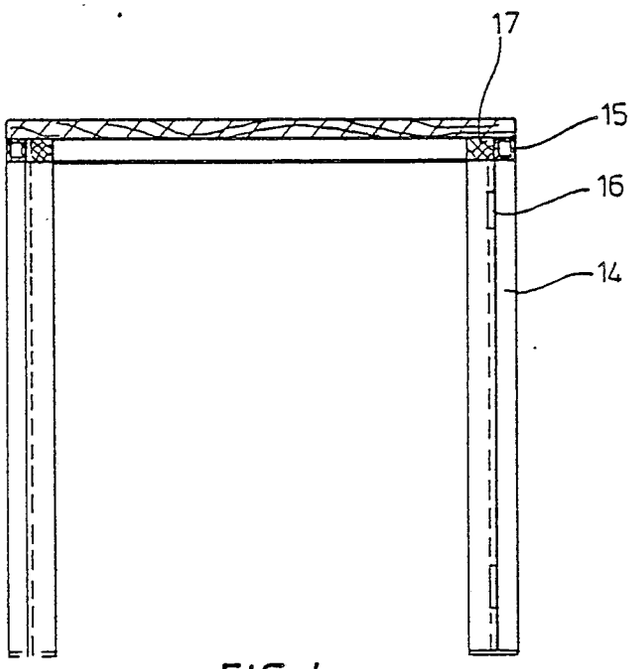

FIG.4.

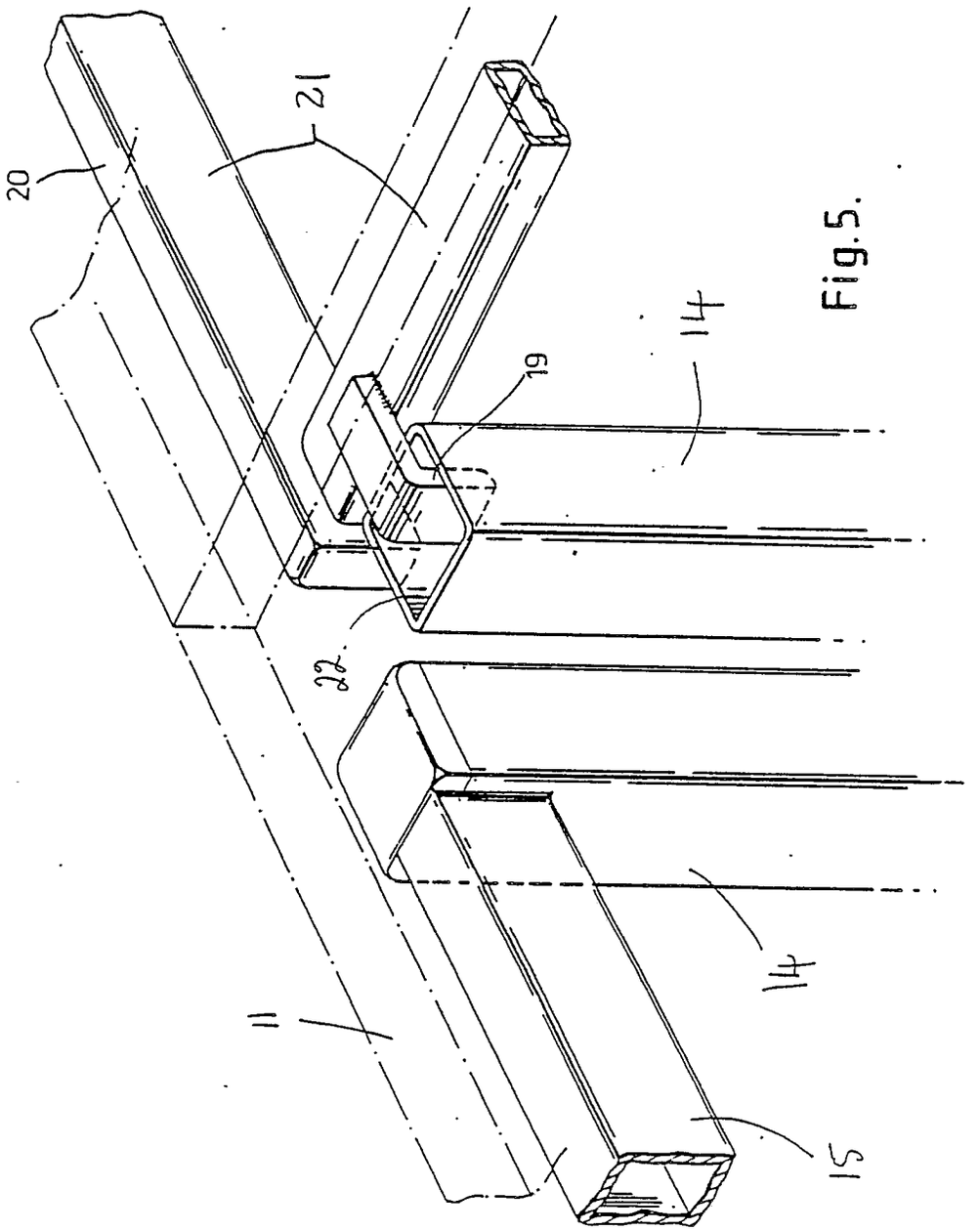

Fig.5.