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(54) Worksite support table

(57) A worksite support table incorporates a main tabletop (**a**) with fold away legs (**f, g**) and four small independent support platforms **(d1, d2, d3, d4)** projecting off three or more sides of the tabletop that can be locked into an extended position or be in close proximity with the main tabletop. The four independent support platforms consist of a smaller diameter square metal rod that can slide in and out within a larger diameter square metal rod **Fig. 18 & 19.** Both rods are separated by a plastic sleeving (**y**) to provide a low friction application. At one end of the narrower rods is a metal collar that also has a rod protruding through it **Fig. 11 & 12.** Attached to one end of this rod is a metal plate (**x1**) with a flat timber surface attached. This surface is adjustable in height in relation to the main table top by using a height adjustment facility (**k1**) located on the side of the metal collar at the end of all four independent supports. This table provides clear unobstructed cutting lines while simultaneously providing support of materials such as lengths as well as sheets of timber materials while being cut to size by a tradesman.

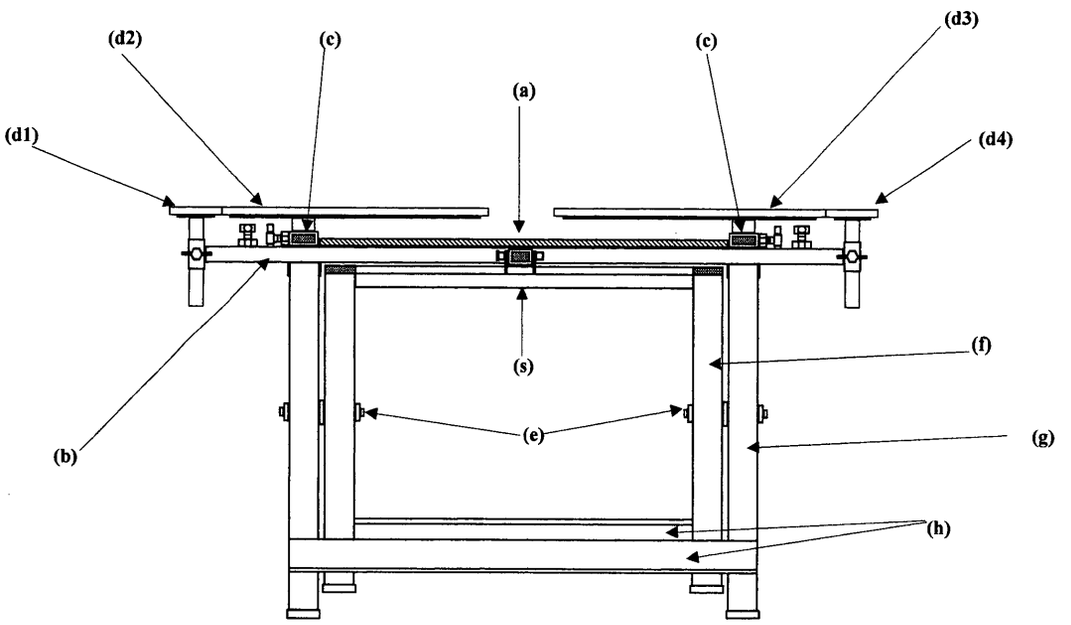

FIG. 1

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Description

[0001] This invention relates to a **portable** table for use by a carpenter. This table can support timber materials of all sizes & dimensions within construction industry standards whether they be **lengths of timber** or **sheets of timber material.** The materials will be supported to an advanced degree as to provide unobstructed cutting lines making it easy to cut without the material collapsing to the ground, or for the need of saw horses or a second person to hold timber.

[0002] Some tables aimed at carpenters are already on the market but suffer from a number of disadvantages when cutting timber on site. For example, most don't provide a large enough platform. What would be useful is a table that is adjustable in terms of providing good surface area support while not obstructing the power tool blade. Most also only act like a clamp to secure small pieces of timber. Some are also made just to support lengths of timber & not capable of supporting large sheets of material for cutting safely and accurately on site.

[0003] **Saw horses** also have disadvantages. They are difficult to move with materials on them, they tend to be unstable and certain materials need four sawhorses to be cut safely. Also, unless you cut in a certain direction in relation to the horses, once cut, the material generally speaking, collapses to the ground unless you have three or more sawhorses.

[0004] This is very important when cutting for example laminated kitchen worktops where any collapse or movement during the cutting process can ruin the material by ripping off the veneered surface making it useless. The object of this invention is to provide a totally supported working platform/table to be used on a building site that will support any **length** of timber or a sheet of material during cutting while also providing unobstructed **cutting lines** without fear of collapse while in the process of single handily cutting the material to size.

[0005] One preferred form of this invention will now be described with reference to the accompanying drawings of which consist of 24 detailed figures outlining the key and essential features.

Fig. 1 shows a fully constructed table from the front elevation view with main features pointed out.

Fig. 2 shows a fully constructed table from a plan or over top view with main features pointed out.

Fig. 3 shows a fully constructed table from the front elevation view with selected features pointed out.

Fig. 4 shows a fully constructed table from a plan view with selected features pointed out.

Fig. 5 shows a side elevation of a fully constructed table with main features shown.

Fig. 6 shows a side elevation of a fully constructed table with key features shown.

Fig. 7 shows a fully constructed table from the front elevation with two supports arms extended.

Fig. 8 shows a fully constructed table from a plan view with all four support arms extended.

Fig. 9 shows a side elevation of a fully constructed table with the support arms extended.

Fig. 10 shows a fully constructed table from the front elevation with the support platforms being illustrated in their differing height rangers.

Fig. 11 shows a close-up detailed view and breakdown of a support arm and platform.

Fig. 12 shows a close-up detailed view and breakdown of a support arm and platform from a side view.

Fig. 13 shows a close-up detailed view of the pin, pin selector and pin bracket.

Fig. 14 shows a close-up detailed view of the pin, pin selector and pin bracket from a side view.

Fig. 15 shows a three dimensional illustration of the pin, pin selector and pin bracket.

Fig. 16 & 17 shows a cross-sectional cut of the support frames, arms and internal plastic collars.

Fig. 18 & 19 shows a three dimensional cross-sectional illustration of the support frames, arms and internal plastic collars.

Fig. 20 & 21 shows a front and side view of the detailed components of the leg brackets and sequence of assembly.

Fig. 22 & 23 shows the detailed components of the central folding leg hinge from a front and side view.

Fig. 24 shows the support platforms in a different directional arrangement.

[0006] What will now be described is the essential construction and components of this table with references to the appropriate drawings.

[0007] **.Fig. 1& Fig.2** show the essential components of this invention consists of a table top or platform **(a)** with sturdy fold out legs **(f) (g)** to support it, that is adjustable in height in relation to the ground.

[0008] Also four small height adjustable platforms **(d1, d2, d3, d4)** that can extend away from the table top and be held in position of extension. The table top or platform **(a)** consists of a large flat surface with a durable hard wearing material layer on top made from metal /plastic or timber on which a chop saw or mitre saw can rest. Ideally this will be rectangular in shape and of a large enough size as to support chopsaws/mitresaws of all makes and models, plus being large enough to use as a work bench.

[0009] Attached to this platform is a metal frame consisting of four large diameter **square & rectangular hollow metal tubes (b),(c).** Two of the four tubes are longer than the other two **(b). The two longer tubes** are laid underneath and along the length of the table top/platform and **welded side by side** (parallel) to one another. **Fig. 17 & 19** illustrate this fact. The **two shorter tubes (c)** are then welded on top of the longer tubes but at 90° degrees to (b) in a position just to the side of the table top/platform **(a). Fig. 2** shows this best.

[0010] These tubes will house the **extendable support arms (b2) (c1)**. **Fig. 7, 8& 9** illustrate this best. The support arms will also be made of square hollow metal tubes but be of a slightly smaller diameter as to fit inside. **Fig. 16 & 18.** They will slide within the two large and two smaller square metal tubes that make up the main frame attached to the work platform. They will slide in and out with ease on tough plastic sleeves or collars (y) that are made to fit between the large and small diameter tubes. Each set of tubes will have one of these plastic collars. These collars will consist of a square shape plastic **tube. Fig. 16, 17, 18, & 19.** Each one will fit snugly inside each metal tube **(b), (c).** The smaller diameter metal tubes **(b2), (c1)** will then slide inside the **hollow square** core of the plastic collar. This allows for a smooth frictionless surface for the smaller metal tube to move back and forth on rather than metal grinding on metal. This is an important quality feature!

[0011] **Fig. 11** shows a bolt nut **(z1)** welded over a hole that is drilled through the centre of one side and at each end of the larger square metal tubes **(b)** .The hole is drilled right through the plastic collars inside. The same is done to the shorter metal frame tubes (c), but the hole is drilled on the side in locations **(l1), (l2) Fig. 3.** This allows for a regular bolt to be threaded into the nut. This bolt will have a handle welded on the end (as in this case) or a plastic moulded knob set on the head end to act as a handle. These are the locks to hold the position of the extendable support arms **(b2, c1)**.**Fig. 3 (j1,** j2, **l1, l2)** shows their positions. Tightening these handles results in the **extendable support arms (b2, c1)** being held at whatever position of length the user desires. This is an essential element that all the platforms must have. Welded at one end of these extendable support arms is a short piece of square metal tube **Fig. 6(r1, r2), Fig. 11(r1), Fig. 10(r4)**, in this case the same diameter as the large square metal tubes used in the frame. These are welded in the vertical position i.e. (in relation to the arms).They will act as collars for the small **adjustable support platform rods, Fig.10(q1, q2, q4)** to sit in.

[0012] On one side of these collars is the **height adjustment facility Fig. 3(k1, k2), Fig. 5(n1)**, which, as with the extendable support arms, consists of a hole being drilled through the centre of one side of the collar and then a bolt nut welded over the hole. This again allows for a regular bolt to be threaded into the nut. This bolt will have a handle welded on the end (as in this case) or a plastic moulded knob set on the head end to act as a handle. Tightening this handle results in the **support platform rod, Fig.10(q1, q2, q4)** being held at whatever height the user desires. This is an essential element that all the platforms must have. Welded to one end of this rod is the **support plate Fig. 6(x1, x2), Fig. 11& 12(x1)** which consists of a thin metal plate. This plate will have small holes drilled through it to allow a small wooden platform to be attached with small screws **Fig. 11 & 12.** This allows this wooden platform **Fig. 1 & 2(d1, d2, d3, d4)** to be replaced if over time it is damaged through wear and tear, plus being wood lessens the bruising damage that occurs when metal and wood collide.

[0013] The construction of the **legs, Fig. 1(f, g)** for this table are as follows. Each leg is made from square, or in this case **rectangular** metal tubing sturdy enough to take the weight of not only the entire table frame but also the weight of any timber being put on the table.

[0014] **Fig. 20 & 21** shows the details of a **leg bracket (o)** welded at one end and **underneath** the two shorter metal frame tubes **(c).** The leg brackets constitute an upside down **U-shaped** piece of metal with two holes drilled through the two opposing sides of the bracket. Two of these brackets in all, one for each short metal tube. Two legs **(g)** will also have holes drilled through two opposing sides at one end of the same diameter. One leg each will then be slotted inside this bracket and a **bolt (e1)** with **four washers (w1, w2, w3, w4) a spring washer (w5) and a nut (e2)** will be slotted though all in sequence. This is part of an arrangement that will allow the entire leg assembly to be folded down for easy storage. The next two legs **Fig. 1(f)** are of similar length but are attached with a **bolt (e) half-way** down nearer the **middle** and on the **inside** of the bracketed legs **(g).**

[0015] **Fig. 22 & 23** shows this in detail. **Two opposing holes** are drilled through **all four legs** in this position and are the same diameter. As before with the leg brackets, a bolt **(e),** washers **(w1, w2, w3),** a spring washer **(w5)** and nut **(e2)** is slotted through. Once assembled, this results in the legs being paired up and able to **swivel like** the legs of an ironing board for example.

[0016] The two bracketed legs **(g)** will then have a **metal crossbar Fig. 1(h)** welded at **90° degrees** in the **lower** portion of the legs. This **crossbar** will span both legs.

[0017] Another **two** crossbars will be welded at **90° degrees** to span legs **(f).** One will be welded in the **lower** portion of these legs in the same position as the crossbar on the legs **(g),** but set on the other side.

[0018] These crossbars are essential for the stability of the table by stopping any lateral movement of the table when erect. The crossbars do this by fixing one leg to the other, which keeps the legs square and at 90° degrees. The next and more important crossbar will again span legs (f), but will be welded in-between the **upper** portion of the two inside legs. This crossbar is illustrated in **Fig. 1 & Fig. 6** as **(s).**

[0019] A foot shown in **Fig. 4 & Fig. 5(m)** will be moulded from rubber and inserted on the bottom of all four legs to enhance stability of the table.

[0020] The following text & drawings explain just one idea for a facility to keep the table erect.

[0021] When unfolded the legs can be set in a number of angles to allow the table to sit at different heights. This is made possible by a pin set adjustment **Fig. 6(v)**. This facility is shown in detail in **Fig. 13, 14, & 15. A small length** of square metal tubing (v) is welded in **a perpen-**

dicular position on the side of one of the larger square metal frame tubes (b) running underneath the table top/ platform.

[0022] In this case it has been welded as to be at the centre of the table. This is called the **pin-hole selector.**

[0023] It has a number of **evenly spaced holes (u)** drilled through it in a lateral line along its length.

[0024] Next is the **pin bracket (t)** which consists of a **U-shaped** piece of metal, again with two holes drilled through the opposing sides and being welded on to the top centre of the top crossbar **(s)** of the inside leg assembly. It must be welded in the position which allows the pin bracket holes to slot over the pin-hole selector evenly on both sides. This results in all the holes lining up so a **metal pin (p)** can be slotted through in any of the pin-hole selector holes. This gives the table a height adjustment facility in relation to **ground level,** plus holds the table in the erect position.

[0025] The pin **(p)** itself will consist of a solid round cylinder shaped piece of metal that is long enough to go through the pin bracket and pin hole selector. The pin itself is what holds the table in the erect position by not allowing the legs and table top/platform to fold up or drop down.

[0026] In operation, the worksite support table can be brought to the job (folded down) in a tradesman's van or truck, then carried single handily to the location of work and unfolded or erected simply by sitting the **bracketed legs (g)** on the ground, then swinging the table top (a) up and over. Then by bringing forward the **pin bracket leg assembly (f, t,)** and slotting the pin-hole selector (v) (located under the table top) down into the pin bracket (t). Once the appropriate height has been chosen by lining up the holes (u) of both the pin bracket and pin-hole selector, insert the pin. The table is now fully erected. To fold the table away again, reverse the process.

[0027] The uses for this table are as follows.

[0028] When in use as a chopsaw/mitresaw table, the operation is as follows. First, once the table has been erected, the left and right long extensions are released by untightening the **locks Fig. 3(j1, j2).** Now the extendable support arms **Fig. 7(b2)** are pulled out to the required distance to support a length of timber. Once this is done, the saw is rested on the table top in the most preferable position, generally this will be the centre and fix in place. A length of timber can then be rested on the base of the saw. Because not all makes of saw have the same **base height,** it becomes necessary to adjust the two support **platforms (d1, d4)** in height so that the timber not only rests on the saw base but also on the small left and right support platform evenly. This means that once cutting begins, of for example a length of timber, it is fully supported and will not lift or fall away immediately after the blade of the saw completes its cut.

[0029] This is not new or novel **but** is an integral part of a cutting table to function for a carpenter.

[0030] **What is new and novel** is the fact that this same support process has also been applied to materials that come in construction industry sheets, normally the size of 1200 millimetres in width and 2400 millimetres in length. Materials such as **ply, sterling board, mdf board, chipboard and plasterboard** to name a few which are generally cut using such power tools as a circular saw or jigsaw.

[0031] To use the table to support such materials is a simple process again, which will not require one single **sawhorse.** To support one of these sheets ready for cutting, simply unlock and extend all four **small support platforms (d1, d2, d3, d4)** as in **Fig. 8** to the positions required so the sheet itself **rests** on **all four.** Clamps can be applied if required by setting the platforms close to the edge of the material and applying the clamp to hold both the sheet and platform together.

[0032] It is important that the platforms are not put in the line of cut so as to allow the cutting blade of the power tool to move forward unimpeded, this is **easily** done. Now cutting a section of the material off the sheet can be performed without fear of the material collapsing or the power tool blade grabbing which can be very dangerous.

[0033] Another key feature is the ability to turn the platforms **Fig. 24 (d1, d2, d3, d4) 90°degrees** in there collars **Fig. 6(r1, r2)** to support and hold any shape of material. Any combination of support platforms can be used and put into what ever position best suits the cutting process.

[0034] Laminated worktops which are used as kitchens worktops normally can also be cut with ease.

[0035] Any movement during their cutting can be costly. Using sawhorses for this process would usually involve having four lined up on a very stable and even floor or ground surface.

[0036] Because a timber material can be clamped to any number of the side supports at almost any angle, any tool, whether powered or not, which requires that the material be held firmly so as to be used, can be, on this table. If required, a vice or clamp could also be an added feature. Tools such as Routers and Planers for example, require that the timber be held in position firmly. Obtaining this **on site** can be a real challenge slowing down work efficiency.

[0037] It will be appreciated that the invention broadly consists in the parts, elements and features described in this specification, and is deemed to include any equivalents known in the art which, if substituted for the described integers would not materially alter the substance of the invention.

Claims

1. A free standing table or platform with folding or fixed legs which includes **three or more flat platforms or surfaces** which are each **independently** supported and that project off **three or more sides** of

a main **table top or platform** and have the ability to **extend or retract** as well as **lock** into various positions and are able to adjust in **height.**

2. A table or platform as claimed in Claim 1 where the independently supported flat platforms or surfaces on each side of the main table top or platform consists of a smaller platform or flat surface that is adjustable in length or height in relation to the main table top or platform.

3. A table or platform as claimed in Claim 1 or Claim 2 where the independently supported flat platforms or surfaces lock in positions by means of a locking **mechanism** which applies pressure or **holds stationary** an inner or outer tube or frame extension arm that slides within or outside another tube or frame.

4. A table or platform including the whole of its components as claimed in any proceeding Claim which is made from metal, plastic, composite or wood, or from a combination of these materials.

5. A table or platform as claimed in any proceeding Claim which will stand freely or be secured to an alternative base or have any vice or clamp mechanism fixed to it in any location on the table.

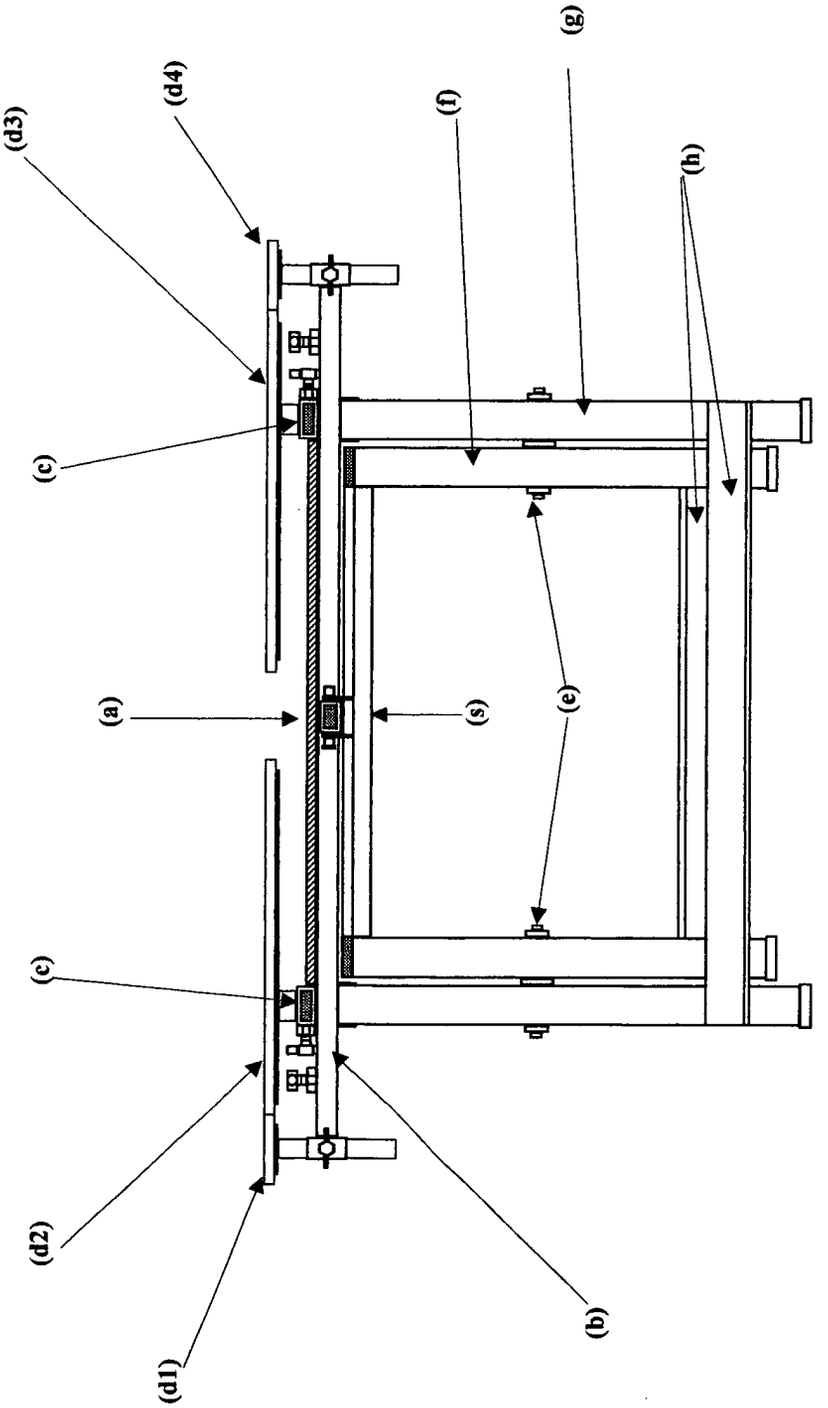

FIG. 1

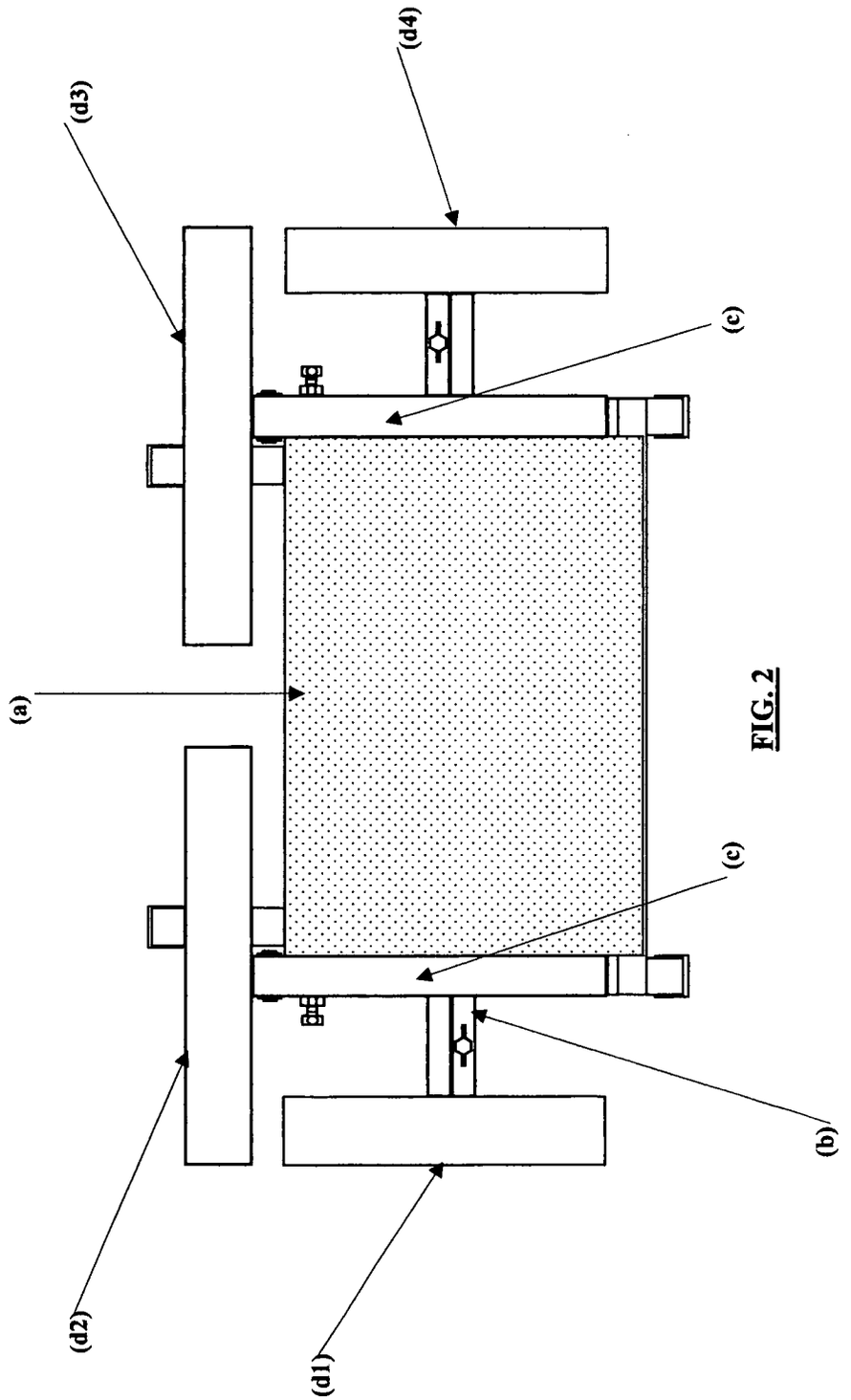

FIG. 2

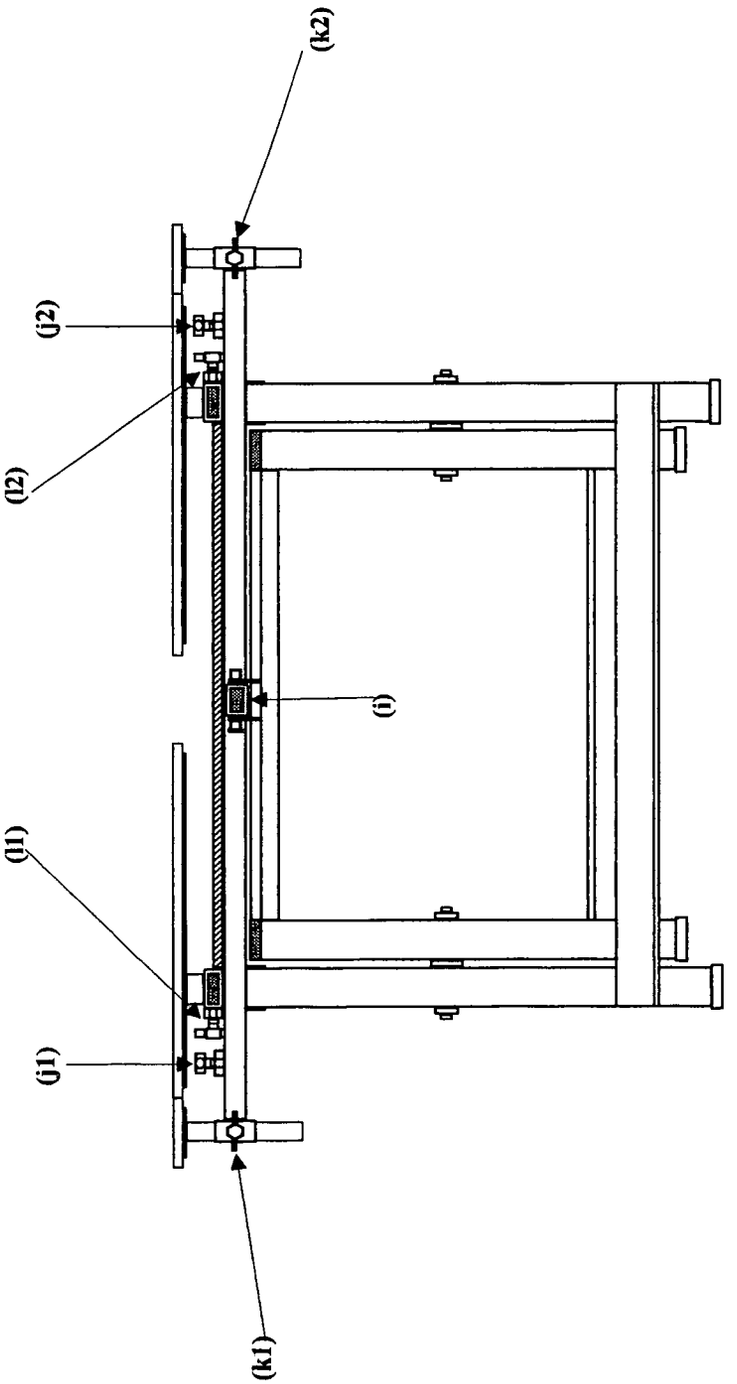

FIG. 3

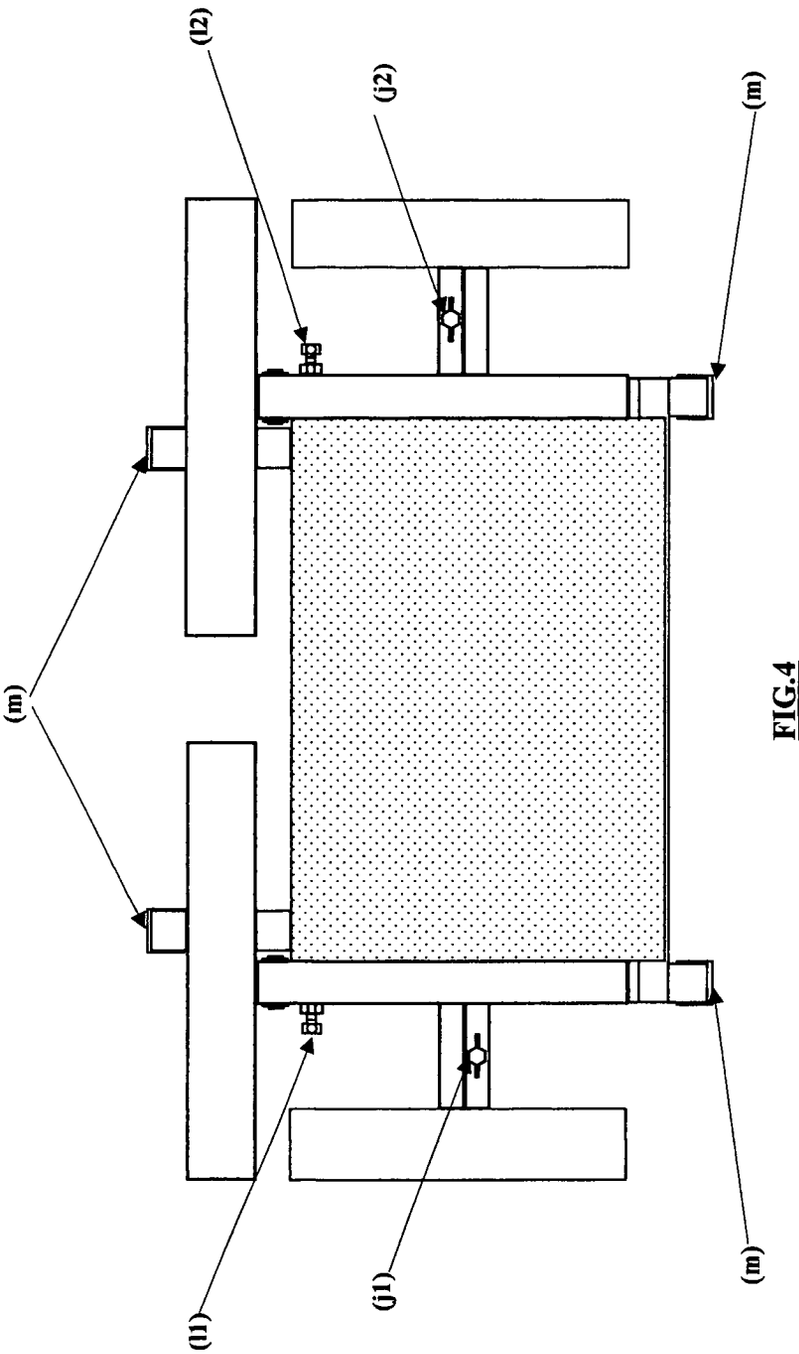

FIG.4

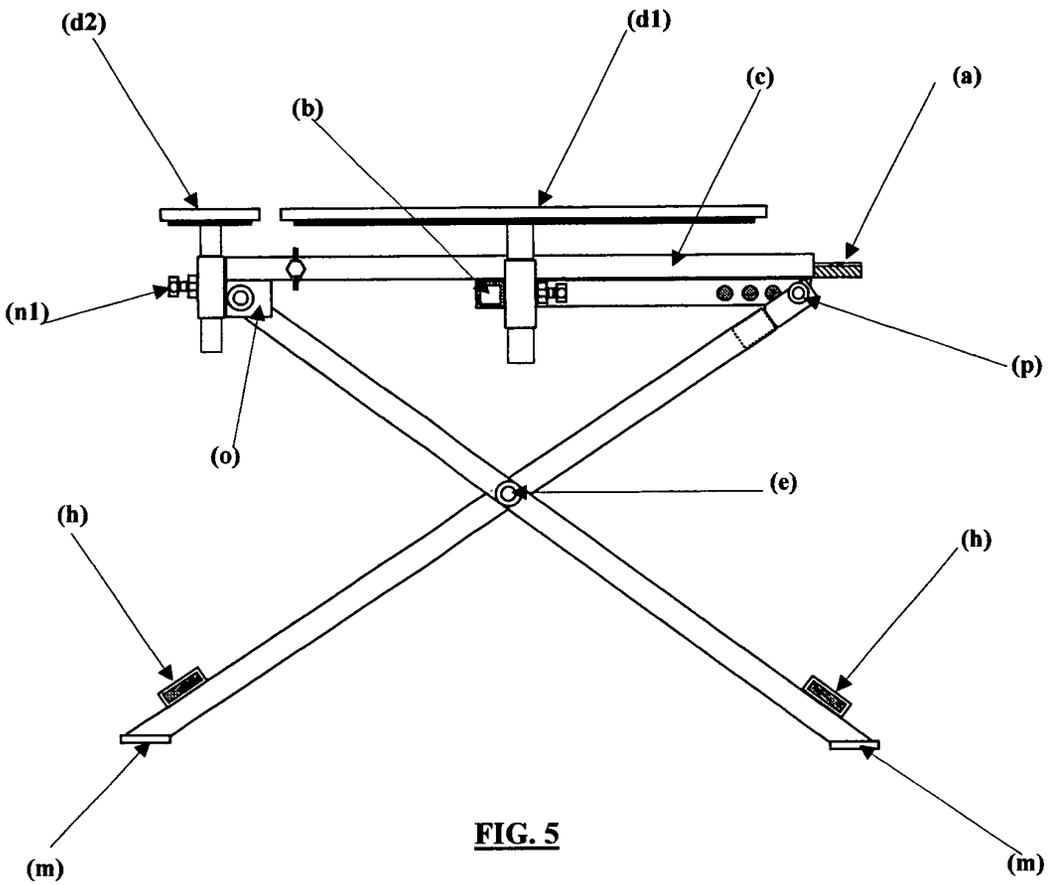

FIG. 5

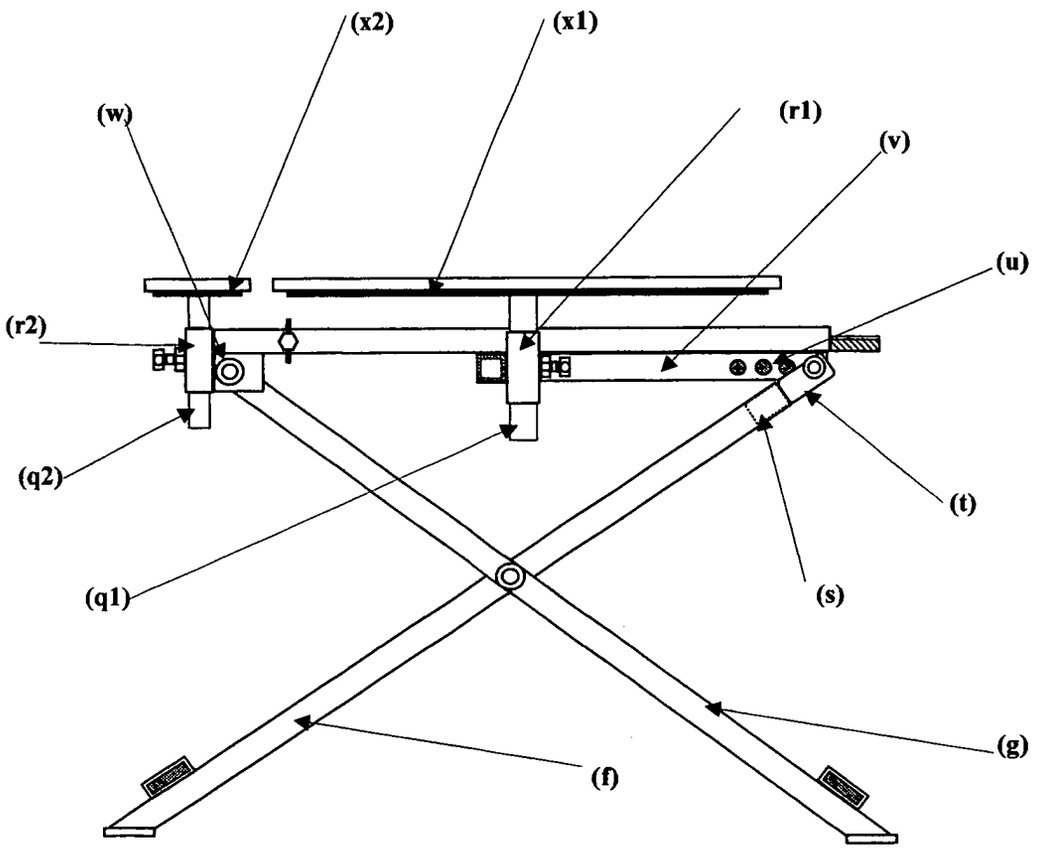

FIG. 6

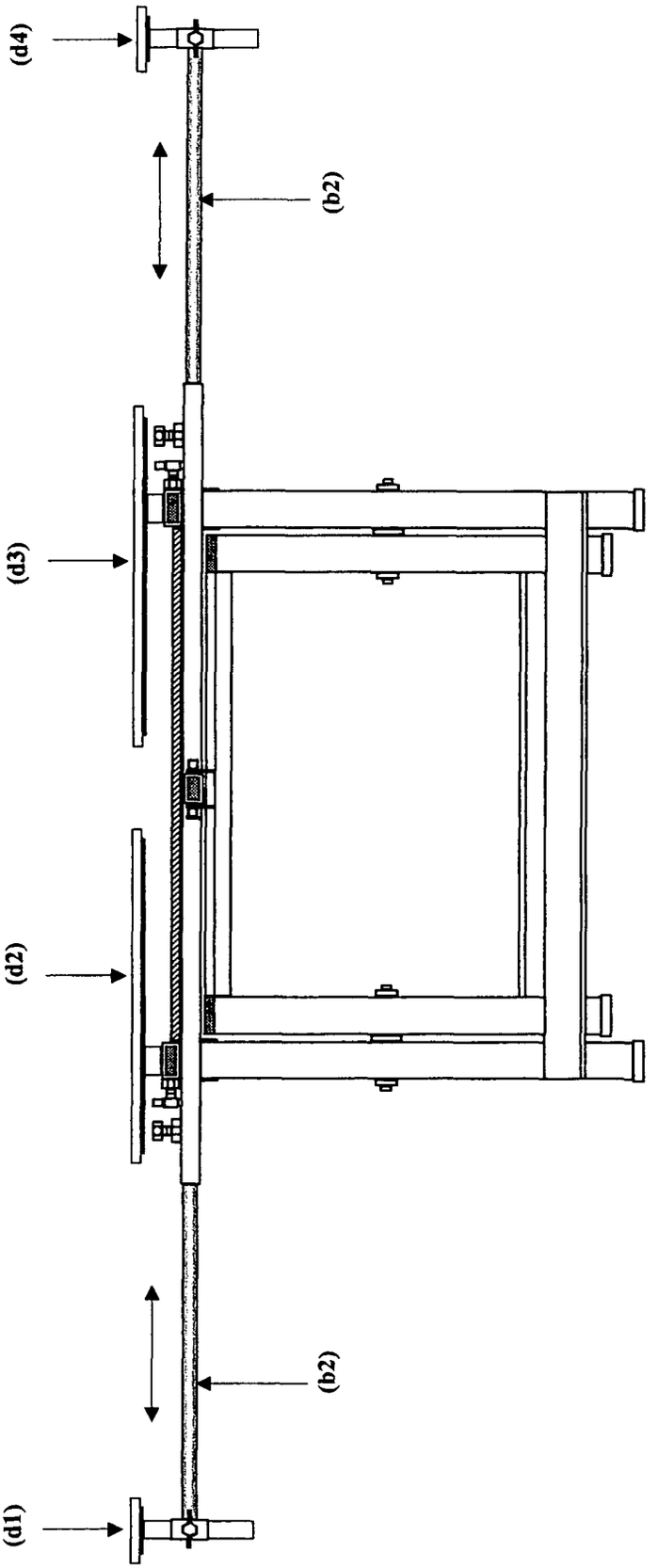

FIG. 7

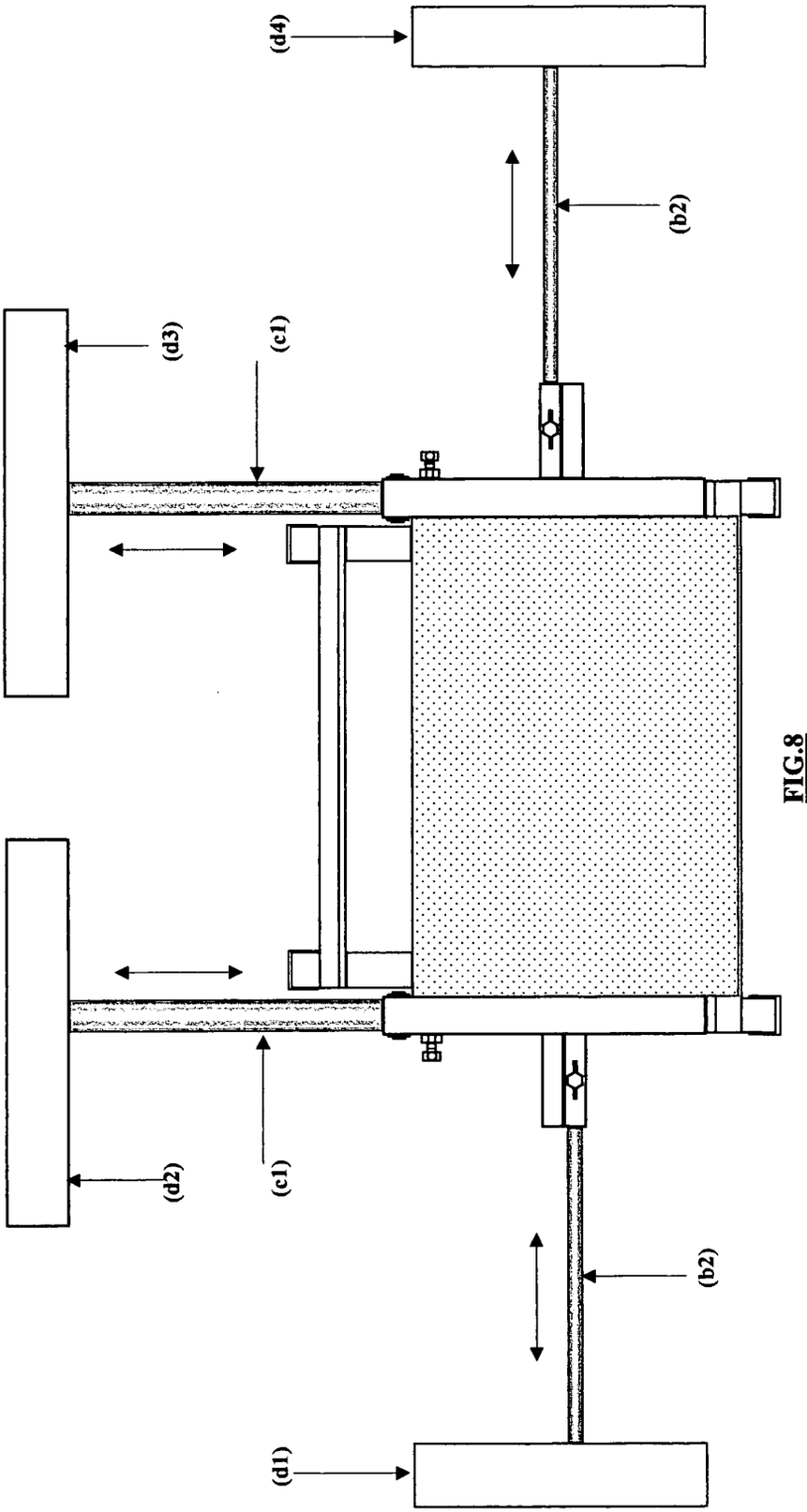

FIG.8

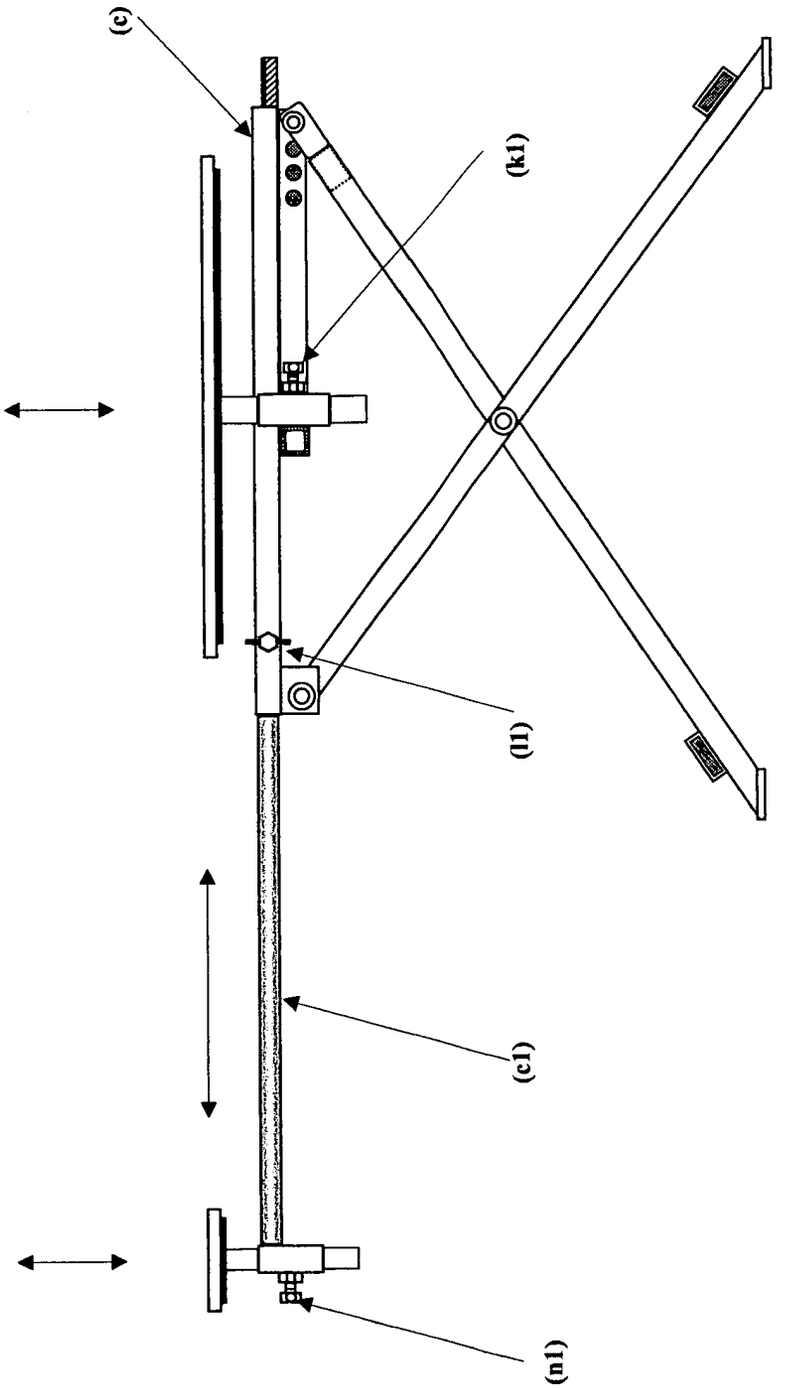

FIG. 9

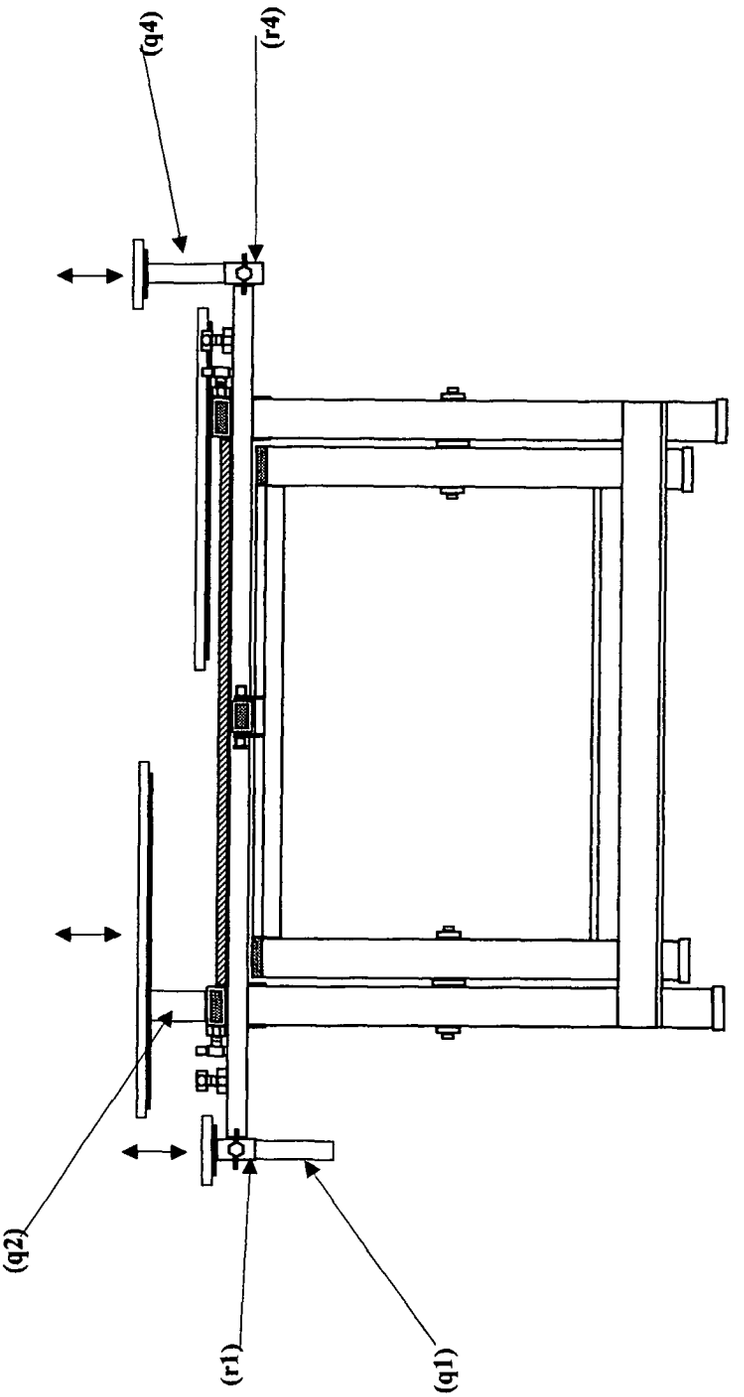

FIG. 10

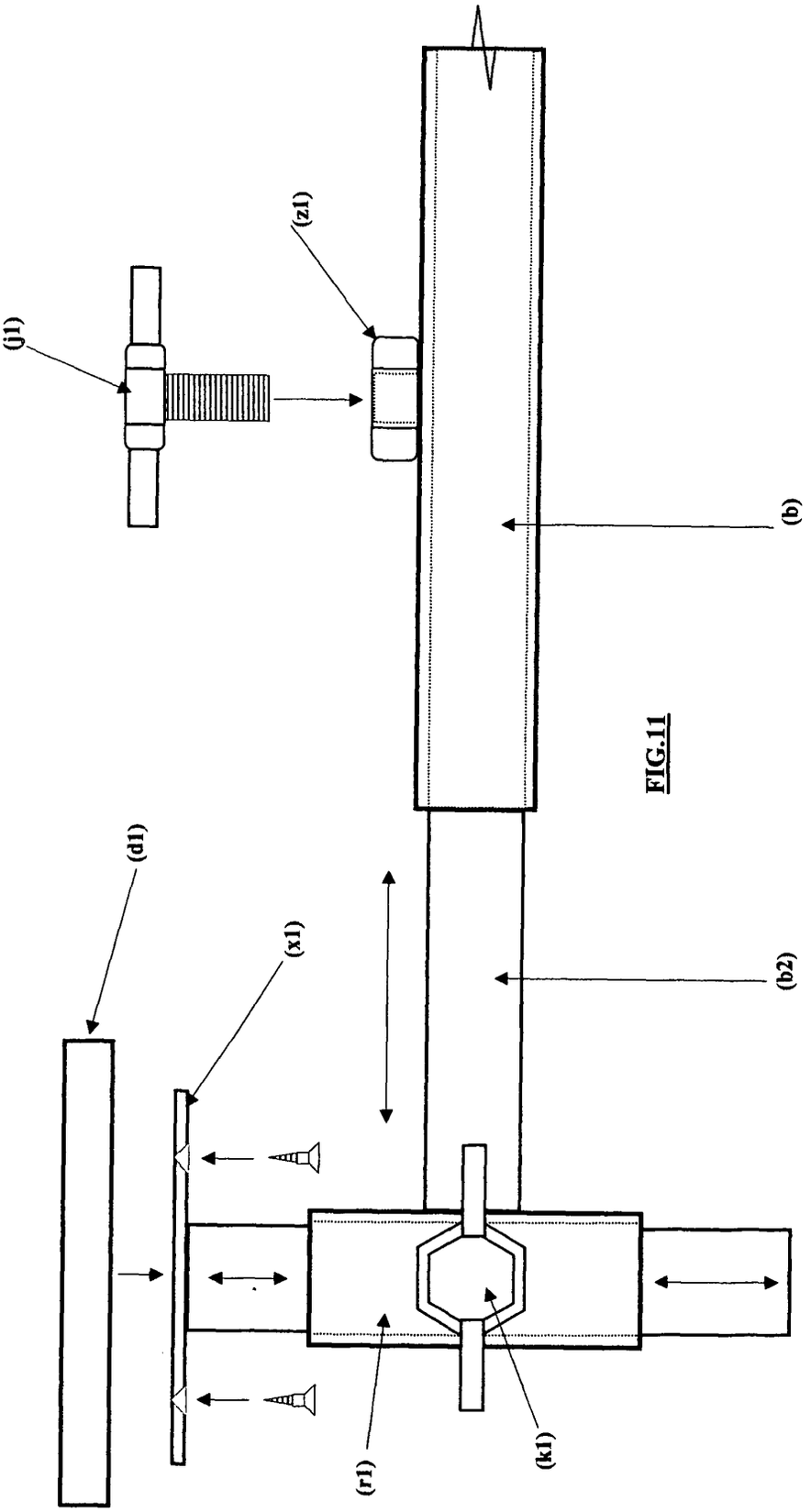

FIG.11

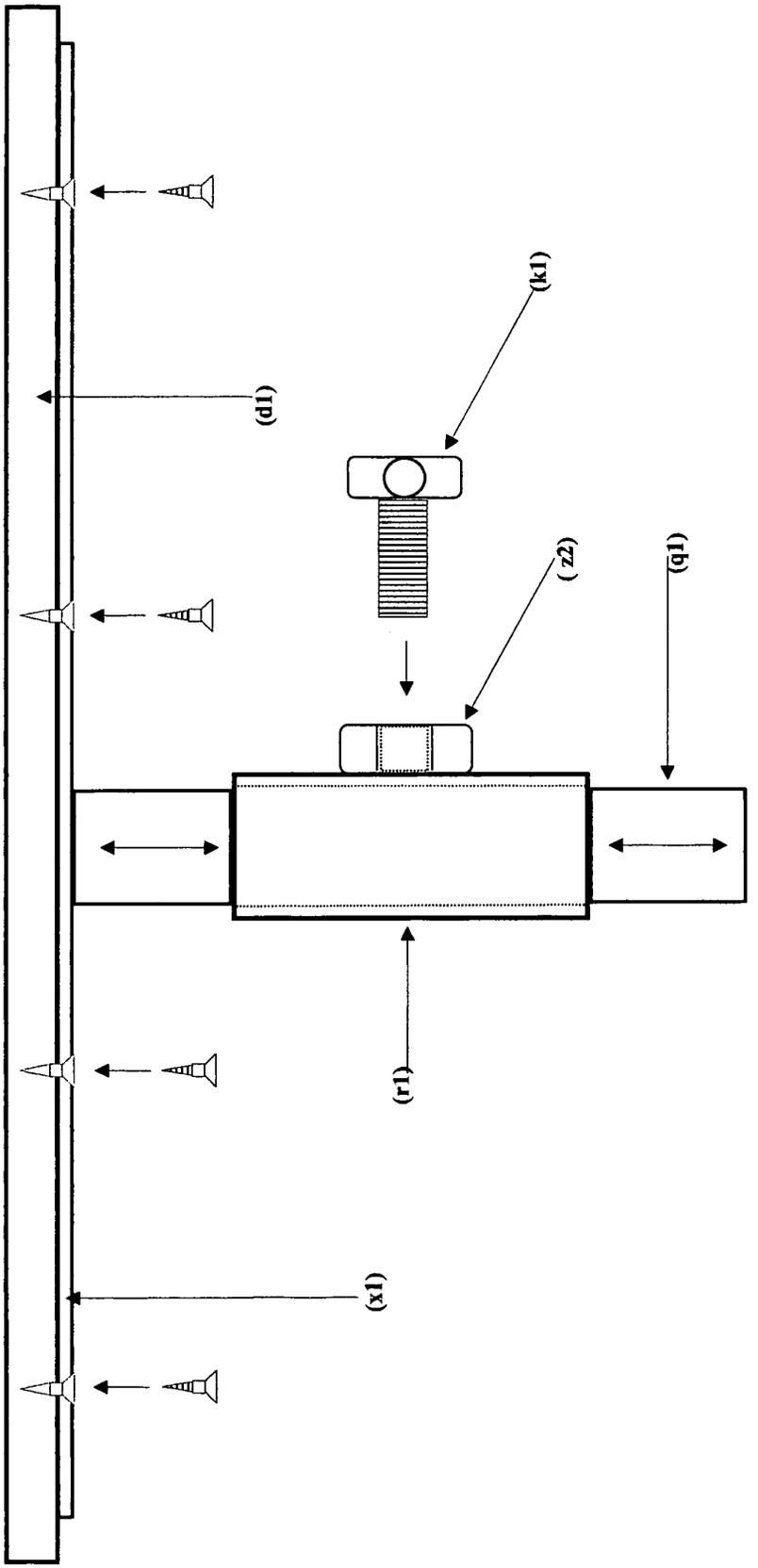

FIG.12

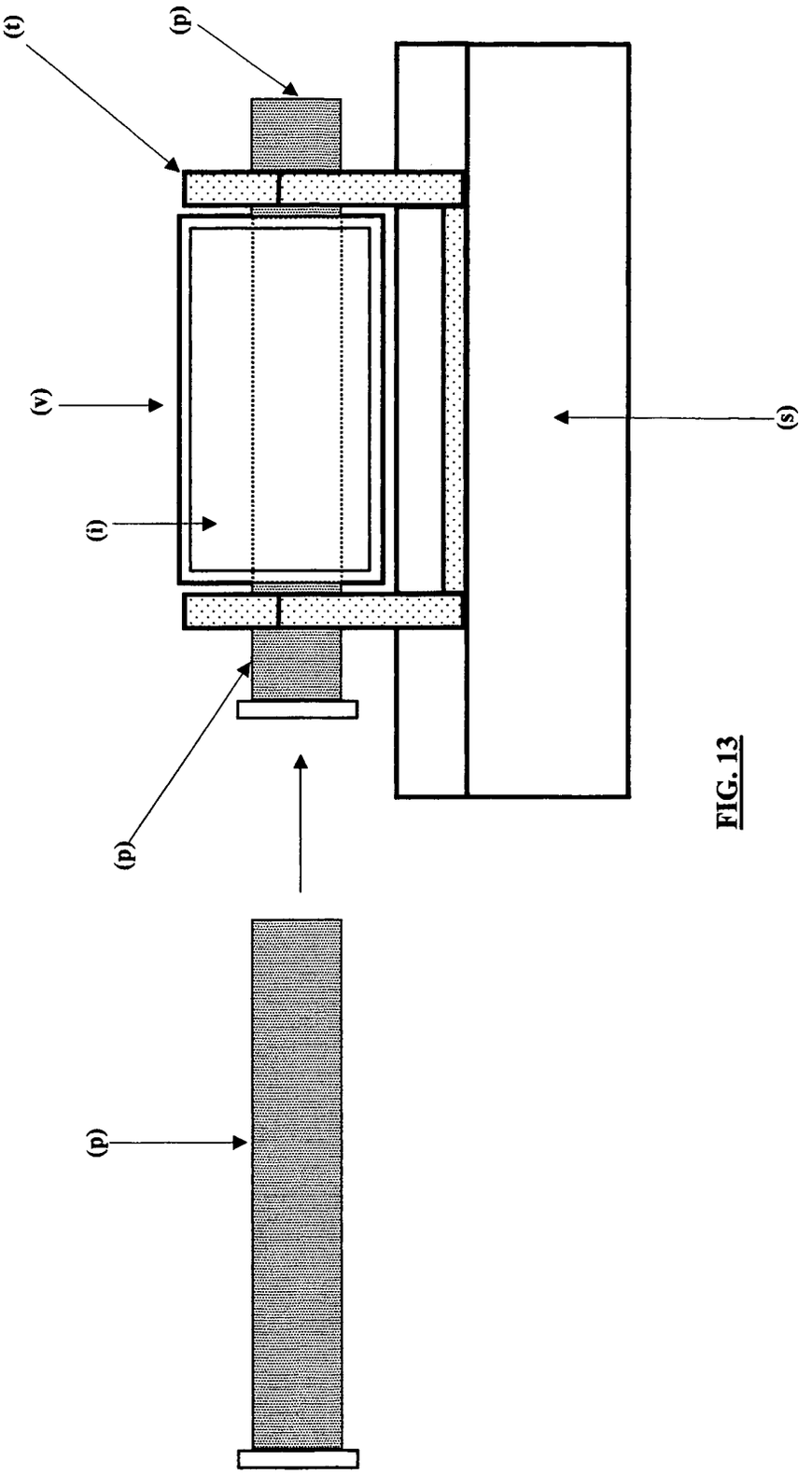

FIG. 13

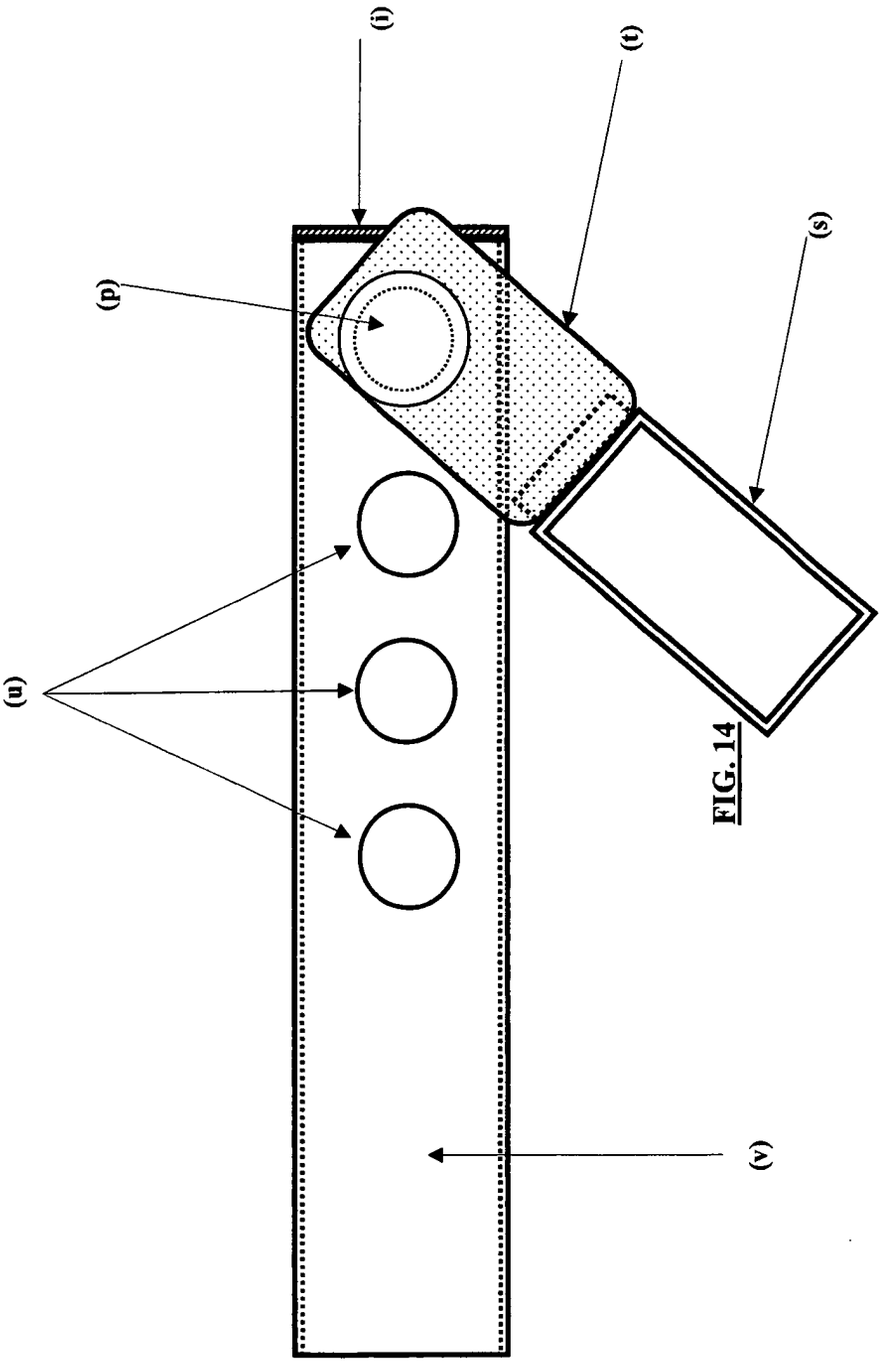

FIG. 14

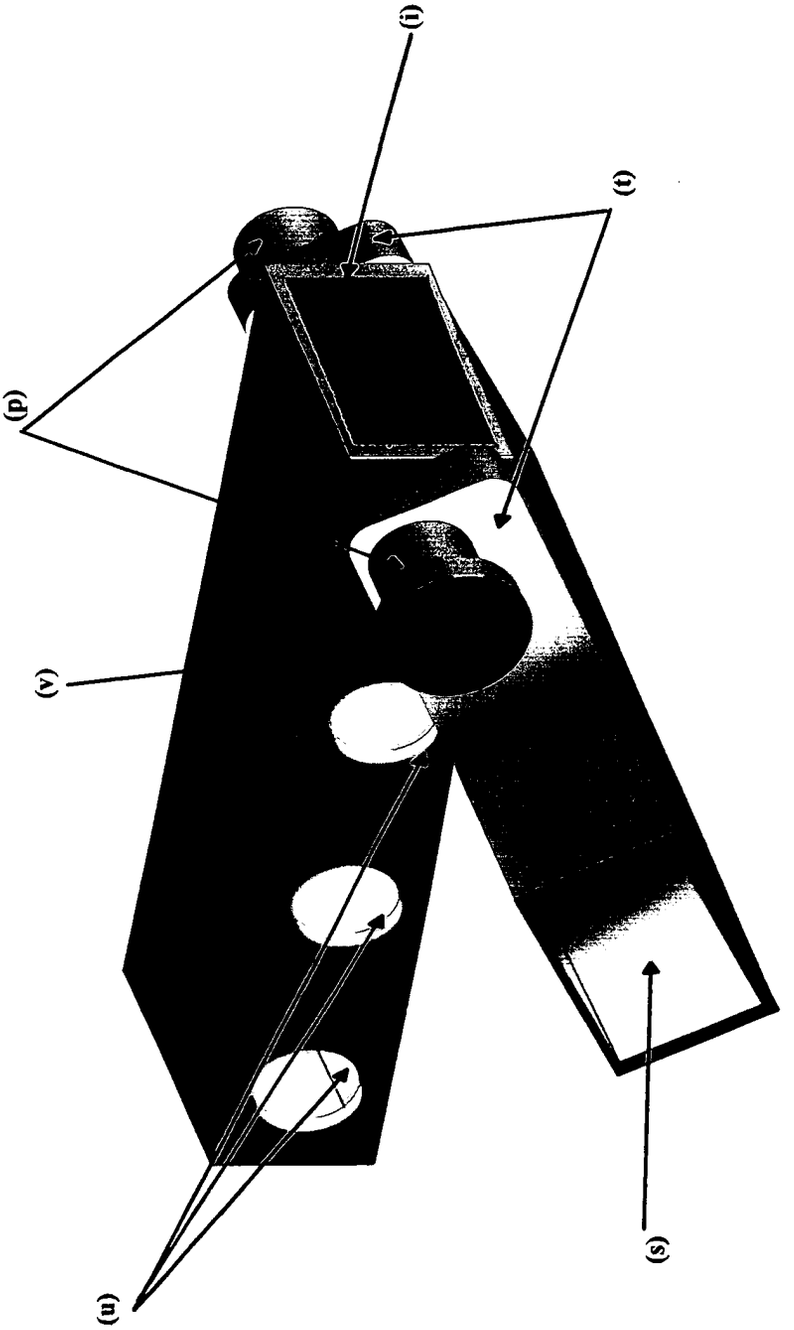

Fig.15

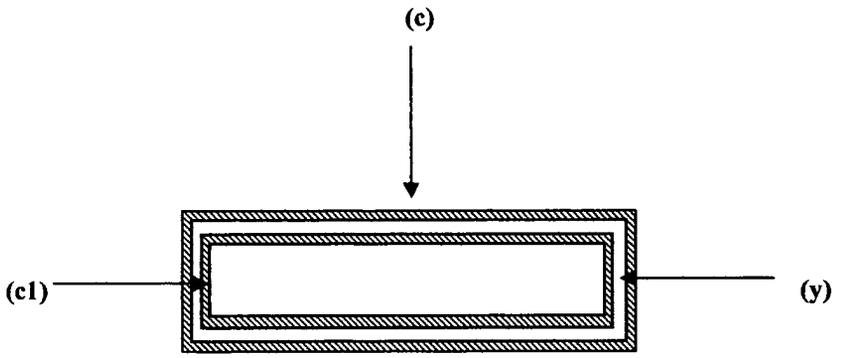

FIG.16

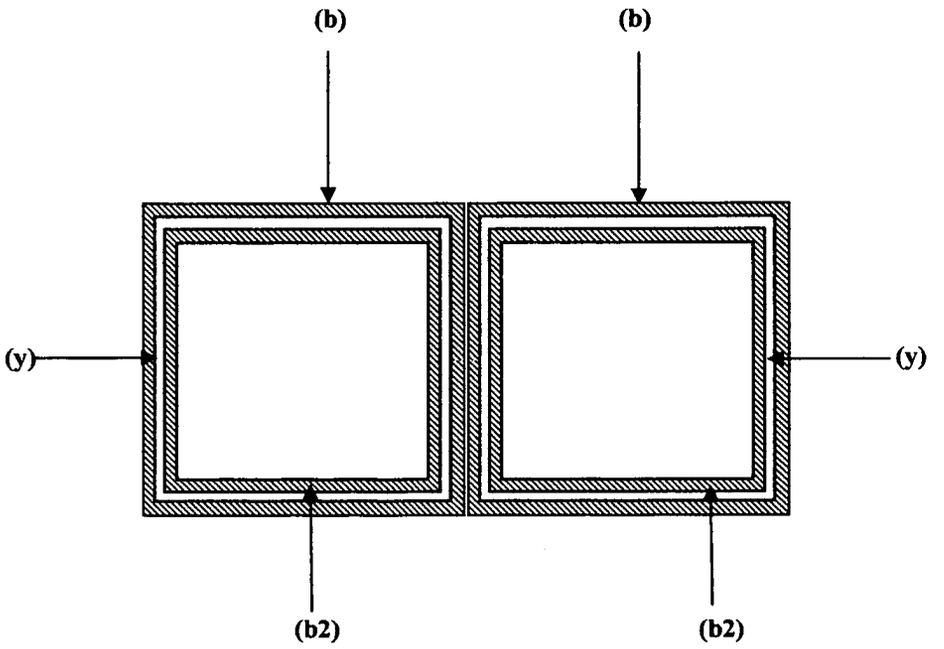

FIG. 17

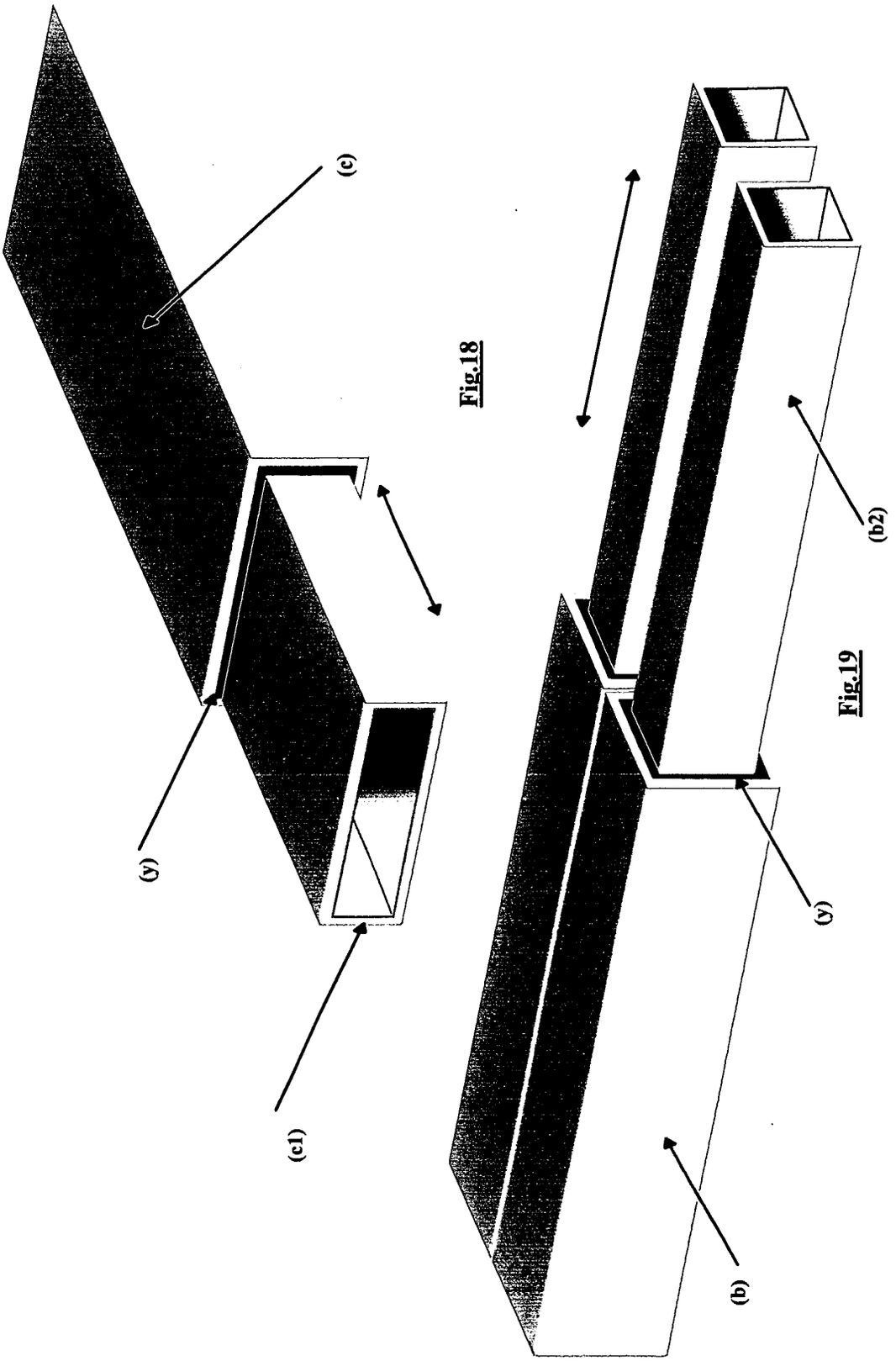

Fig.18

Fig.19

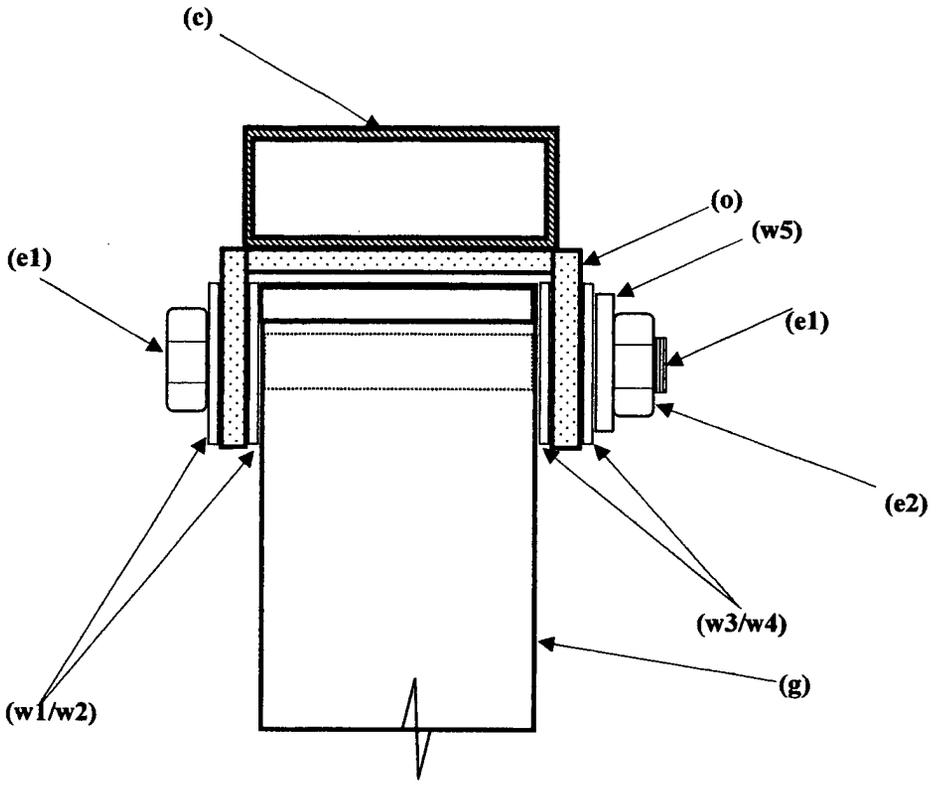

FIG. 20

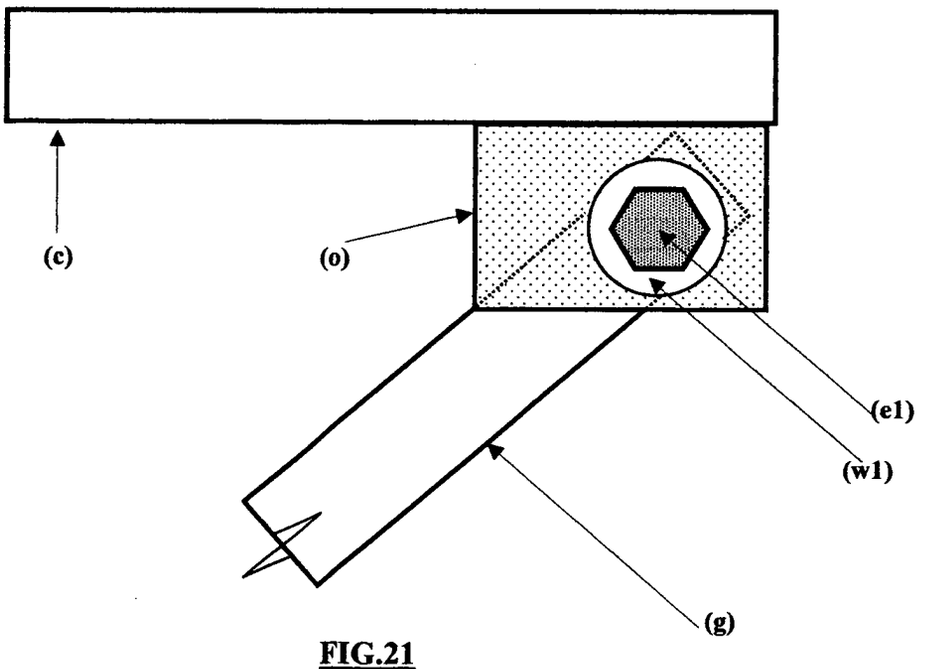

FIG.21

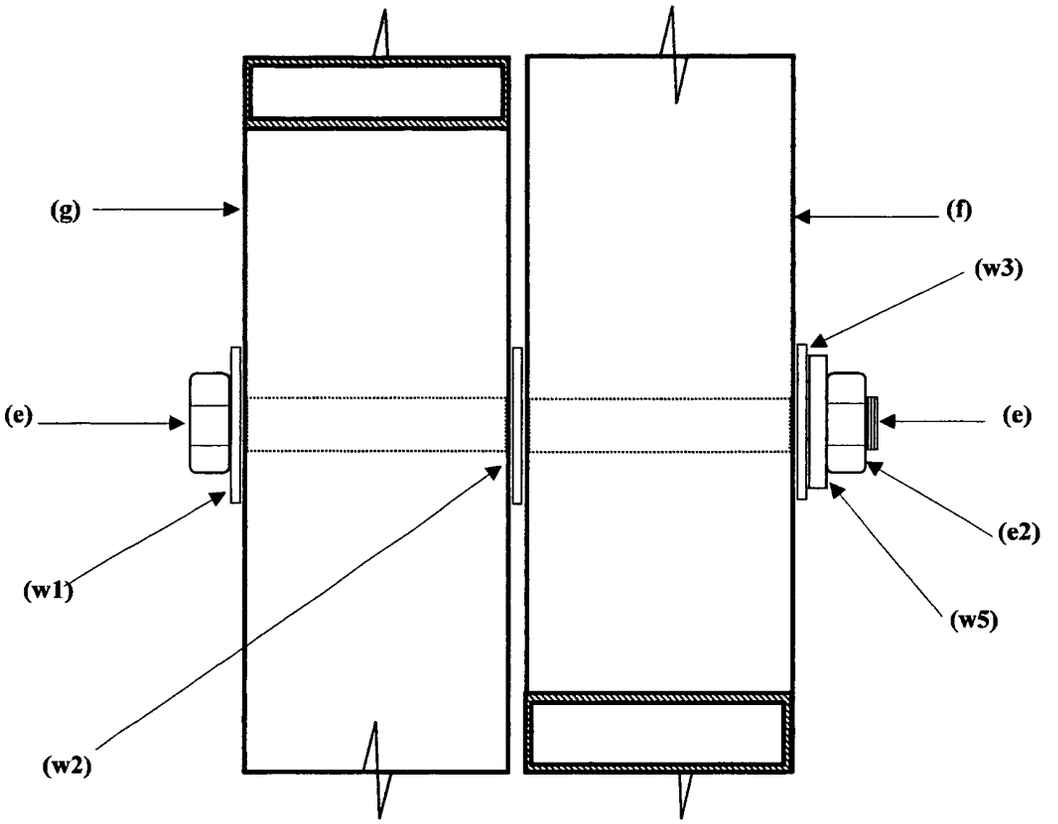

FIG. 22

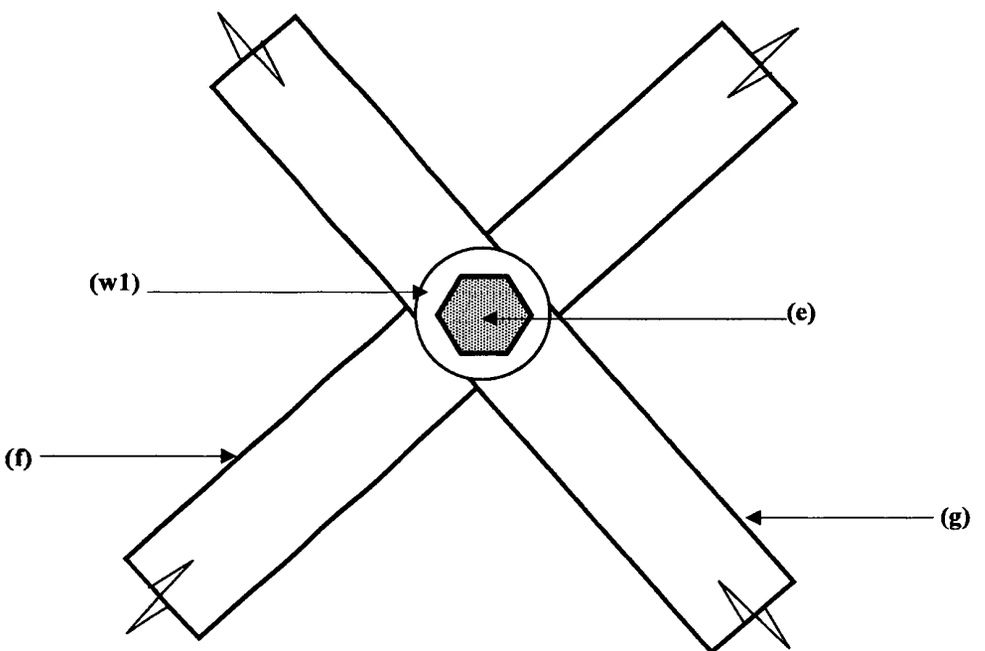

FIG.23

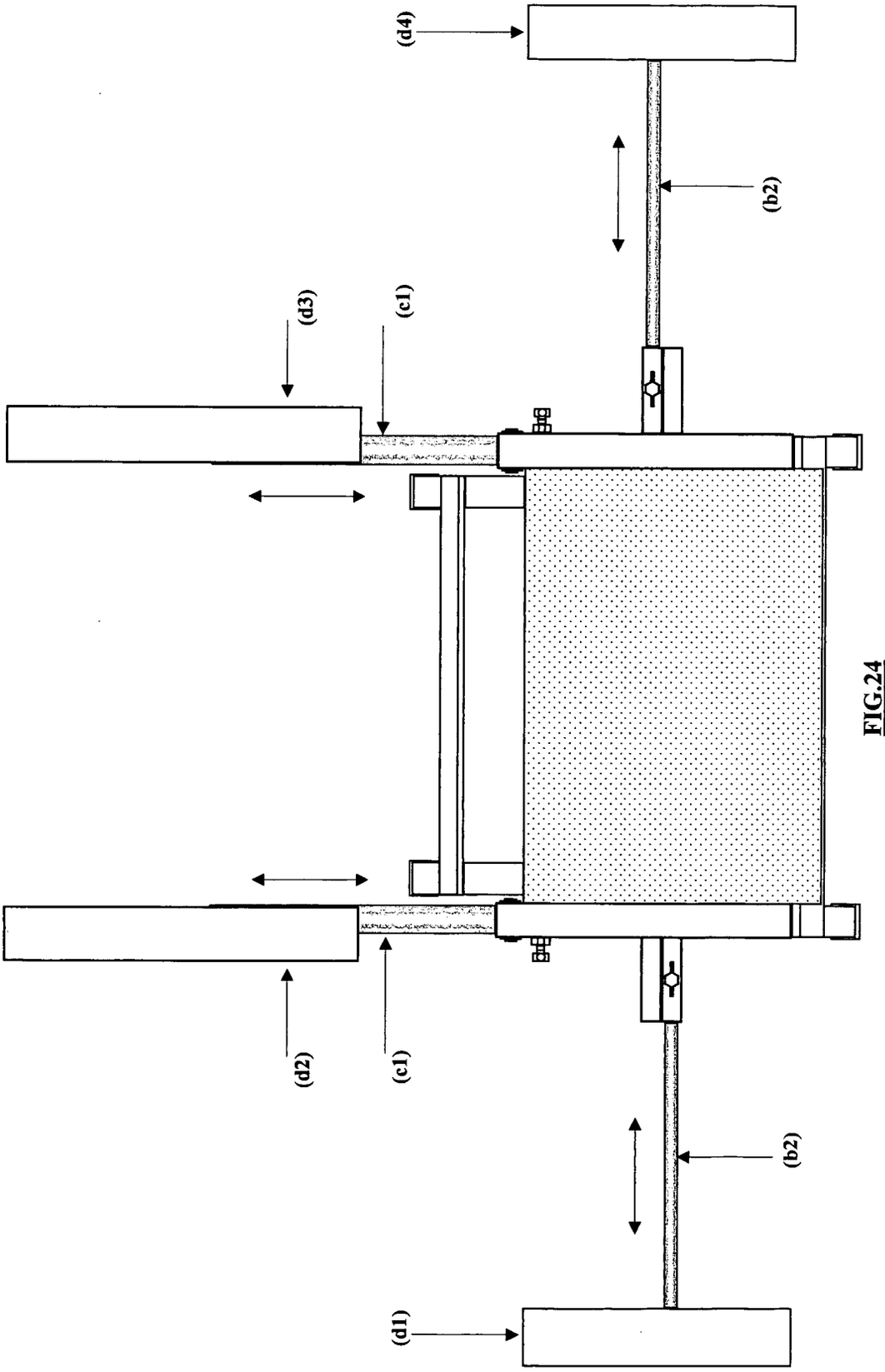

FIG.24

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Application Number
EP 04 01 4073

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B25H
A47B
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	17 February 2005	POPMA, R

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