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⑹ Applicant: **ALPHA TECHNICS LIMITED, Amp House 2 Cyprus Road Regents Park Road, London, N33 9Y (GB)**

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㉒ Inventor: **Church, Barry Alan, Littler Grange Littler Lane, Winsford Cheshire CW7 2NE (GB)**  
Inventor: **Leech, Andrew John, Littler Grange Littler Lane, Winsford Cheshire CW7 2NE (GB)**

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㉔ Representative: **Ajello, Michael John, 38a Bramhall Lane South, Bramhall Stockport Cheshire SK7 1AH (GB)**

㉕ **Improvements in or relating to display systems, partitions and the like.**

㉖ The invention provides a display system comprising a plurality of panel assemblies which are adapted to be selectively connectable to each other in two alternative ways, the first is by providing hinging means between adjacent panel assemblies to form a rigid but foldable display structure. The second is by providing a plurality of poles having elongate channels therein adapted to receive correspondingly shaped pegs which are in turn securable to respective panel assemblies such that a rigid but non-foldable display structure can be assembled.

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IMPROVEMENTS IN OR RELATING TO DISPLAY SYSTEMS,PARTITIONS AND THE LIKE

THIS INVENTION relates to display systems, partitions and other such structures, particularly of the kind adapted to be easily transportable.

Conventional portable display systems generally fall into two categories, one known as the "panel and pole" system and the other known as the "folding" system. The panel and pole system allows assembly of the display or partition structure by providing a plurality of panels, each of which is releasably securable to rigid upright poles interposed therebetween and in this manner structures of varying sizes and shapes can be quickly constructed from a single portable kit. A major advantage of this system is that the resulting structure is extremely strong and rigid. However, disadvantages are that assembly can be time consuming and because the components of the structure are separate, such components can become mislaid or lost.

On the other hand, the folding display system typically comprises a single assembly of panels each interconnected by hinges which allow where necessary 360° movement of the panels such that the structure can be closed to a position where it occupies a relatively small space. The major advantage of this system over the panel

and pole system is that assembly of the required structure is very simple and quick. However, disadvantages of this system are that it is inherently less rigid than that of the panel and pole system and the number and variety of configurations which can be adopted is limited by the fact that the panels have to be interconnected by hinges.

With the two types of systems described above, it has heretofore been necessary to choose between one or the other, depending upon the requirements to be met. It is an object of the present invention to provide a single display system, partition or the like which has many of the advantages and characteristics of both of the systems described above but in which the aforementioned disadvantages are obviated.

According to the present invention, there is provided a portable display system comprising a plurality of panel assemblies adapted to be selectively connectable to each other by hinging means to form a rigid foldable display structure, or alternatively to a plurality of poles to form a rigid non-foldable display structure.

The invention thus provides a single display system which can be used either as a folding structure analogous to the conventional folding display system described or a different configuration can be utilised analogous to the panel and pole system, whichever is desired.

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

5 Figs. 1 to 3 show cross-sectional views of members used in making up the frames of the panel assemblies of this embodiment of the invention;

Fig. 4 shows schematically the mode of construction of a single panel assembly utilising the members of Figs. 1 to 3;

10 Fig. 5 is a perspective view showing the members of Figs. 2 and 3 in their operative condition.

Fig. 6 shows the movement afforded by the hinging means between adjacent panel assemblies;

15 Fig. 7a, 7b, 7c, 7d and 7e show various configurations which may be utilised when adjacent panel assemblies are hinged to each other in the manner shown in Fig. 6;

20 Fig. 8 shows a cross section of a pole utilised in the arrangement alternative to that shown in Fig. 7;

Fig. 9 shows a peg adapted for use with the pole of Fig. 8;

Fig. 10 shows an alternative peg adapted for use with the pole of Fig. 8;

5 Fig. 11 shows schematically the mode of assembly of the display system utilising the pole of Fig. 8.

and Fig. 12 shows a cross sectional view of an alternative form of frame member.

10 Referring to Fig. 1 of the drawings, there is shown a section of an elongate aluminium member comprising a generally box-like structure 1 from one side of which extends a lip 2 defining a channel 3. Within the box 1 are two pairs of oppositely disposed ribs 4, 5, 6 and 7, on the  
15 end of each of which is an arcuate portion 4a, 5a, 6a, and 7a arranged such that opposing pairs of ribs 4 and 7 or 5 and 6 each define a part cylindrical channel.

Also within the box 1 are a pair of oppositely disposed planar ribs 8, 9 defining a gap 10.

20 Referring now to Fig. 2 of the drawings, there is shown another section of an elongate member comprising a box 11 within which are two pairs of oppositely disposed arcuate ribs 12, 13, 14 and 15 also having

identical arcuate portions 12a, 13a, 14a and 15a to those corresponding portions shown in Fig. 1. Extending outwardly from one side of the box 11 are a pair of walls 16, 17 on the free end of each of which is a respective inwardly facing lip portion 18, 19.

In Fig. 3, there is shown a further section of an elongate member 20 of a generally right-angled shape having a thickened portion on each edge of which is an arcuate indent 21, 22. Extending at right-angles adjacent the indent 22 is a lip 23 which defines a channel 24 similar to the channel 3 shown in Fig. 1.

Referring now to Figs. 4 and 5 there is shown schematically the arrangement by which the members of Figs. 1 to 3 can be assembled to form a panel assembly 25. Three elongate sections of member 1 are arranged at right-angles to each other to form two sides and a base. Suitable portions thereof are cut out to provide butt fixing at the two corners 26, 27 thereof. The top portion of the panel assembly 25 is comprised partly of the member 11 shown in Fig. 2 and each end thereof is suitably cut out at the corners 28, 29. In order to secure the respective members 1, 11 to each other at the corners 26, 27, 28 and 29, screw holes may be drilled as appropriate and self-tapping screws as shown inserted into the part-cylindrical channels afforded by the arcuate portions of the ribs 4, 5, 6, 7, 12, 13, 14 and 15 as appropriate. The structure is

completed by the addition of the member 20 shown in Fig. 3 which is slidably affixed to the member 11 as shown in Fig. 5. This arrangement permits a rectangular panel (not shown) to be releasably secured within the panel assembly 25 where it is received at its side and lower edges by the channel 3 of the member 1, and at its top edge by the channel 24 of the member 20. In order to lock the member 20 to the panel assembly a sprung ball 30, shown in dotted outline, is fixed in the member 11 and is adapted to be engagable with a recess (not shown) on the underside of the member 20.

Referring now to Fig. 6, there is shown one manner in which adjacent panel assemblies 25 can be connected to each other by hinging means which comprises a double-action hinge 31 permitting arcuate movement of either panel assembly 25 through approximately 360°. This permits adjacent rows of panel assemblies to be closed into a concertina-like configuration for easy storage and transportation.

In Figs. 7a to 7e there are shown various configurations which may be adopted by hinging adjacent panel assemblies together in the manner shown. In Fig. 7a it will be seen that a five panelled assembly can be folded into a box structure.

In Fig. 7b an eight panel assembly hinged in the manner shown can be used to form a corner unit with a

projecting portion upon which a shelf can be fixed.

In Fig. 7c an eight panel assembly can form a three wall structure with a projecting box-like feature on which can be affixed a table top if desired.

5 In Fig. 7d a seven panel unit can be used to form a generally rectangular display having a forwardly projecting corner piece.

In Fig. 7e a seven panel assembly in which two of the panels are smaller than the others can be utilised to  
10 make up a structure in the shape of a pair of adjacent boxes having different dimensions and upon which a shelf and a table top can be secured.

Referring now to Fig. 8 of the drawings, there is shown a section of a pole 32 of generally circular section  
15 and having a square hole 33 centrally located therein. Around the periphery of the pole are eight part cylindrical channels 34 which are each shaped to receive by push or snap fit a peg 35, shown in detail in Fig. 9. The peg 35 has an enlarged arcuate head 36 of shape corresponding to  
20 that of the channels 34 in the pole 32. Extending from the head 36 is a shaft portion 37 on the end of which is a screw portion 38 adapted to be received in the holes which would otherwise be occupied by the hinge mounting screws described with reference to the embodiment of the invention

shown in Figs. 1 to 7.

In Fig. 10 there is shown an alternative form of peg 39 which differs from that shown in Fig. 9 by the fact that the enlarged head portion 40 is generally spherical and this has the advantage in that the head portion 40 does not have to be aligned vertically with a particular channel 34 on the extrusion 32, as would be the case if the peg 35 were utilised instead.

Referring now to Fig. 11 of the drawings, there is shown a partly-erected structure utilising lengths of poles 32 and the pegs 35. Each length of pole 32 is joined to the next with the aid of a connector plate 41, from each side of which protrudes vertically a square section bar 42, 43 (shown in dotted outline) which is received in the square hole 33 of each pole 32. A foot portion 44 is provided on the end of each pole 32 adjacent the floor and is similarly provided with a square-section bar 45 (shown in dotted outline), which extends upwardly and is similarly received in the square hole 33 of the pole 32. Adjacent panels 25 can be connected to the structure by a snap or push fit of each peg 35 into an appropriate channel portion 34 and because there are eight of such channel portions 34 on each pole 32 it follows that a wide variety of configurations can be adopted.

Referring now to Fig. 12, an alternative form of frame member comprises in section, a generally box-like

structure of outer walls 50, one of which extends beyond the bounds of the box to provide a lip 51 defining a channel 52.

Within the box are two ribs 53 and 54 integral with and extending inwardly from two opposed walls 50. The rib 54 carries a part cylindrical channel 55 which is oppositely disposed with respect to a further similar channel 56 extending inwardly from another outer wall 50. In a similar manner to the channels formed by members 4a, 7a and 5a, 6a in Fig. 1, channels 55 and 56 are adapted to receive screws securing the frame members together.

It will be appreciated that the embodiment of the invention described above is merely illustrative of one manner in which the invention can be achieved. For example, other shapes of members or poles may be suitably employed and in particular the pole shown in Fig. 8 may, instead of being generally circular, be of a polygonal shape such as an octagon, on the flattened surfaces of which are the channels adapted to receive pegs. Alternatively, instead of providing poles with external elongate slots, the poles may instead be tubular having key hole-shaped cut-out portions at spaced intervals therealong. The enlarged head portion of pegs 35 or 39 can then be inserted into the circular part of the key-hole and then moved axially to a position in which it is trapped behind the slotted portion of the key-hole.

Also, whilst the invention has been described with reference solely to a display system it will be appreciated that the system can be used instead for e.g. partitioning or other similar purposes.

CLAIMS

1. A portable display system comprising a plurality of panel assemblies adapted to be selectively connectable to each other by hinging means to form a rigid foldable display structure, or alternatively to a plurality of poles to form a rigid non-foldable display structure.
2. A display system according to Claim 1, in which each panel assembly comprises a frame for holding a respective panel, the frame having a releasable top portion by which the panel can be removed.
3. A display system according to Claim 1, wherein the frame consists of a number of frame members fixed together by screws each frame member comprising a generally box-like section with at least one integral cylindrical or part-cylindrical channel within the section to receive a fixing screw.
4. A display system according to Claim 3, wherein the box-like section includes a plurality of part-cylindrical channels each formed by two arcuate portions attached to and extending from, a wall of the box-like section.
5. A display system according to Claim 2, in which the releasable portion of the frame comprises a pair of interlockable members, one of which being provided with a channel for receiving a top edge of a respective panel,

there being a catch releasably to hold the members together.

6. A display system according to any preceding claim in which the panel assemblies are interconnected by hinging means, at least some of which means comprise double-action hinges to provide substantially 360° movement thereof.

7. A display system according to any one of Claims 1 to 5, in which the poles are provided with circumferentially spaced elongate channels of arcuate section for receiving by a push or snap-fit, pegs adapted to be secured to the or each panel assembly.

8. A display system according to Claim 7, in which the or each peg has an enlarged head which is substantially spherical.

9. A display system according to Claim 7, in which the or each pole is provided with means for receiving a connector plate from each side of which protrudes a bar adapted to be received centrally within adjacent poles.

10. A display system according to Claim 7, in which a foot portion is provided on the end of each pole adjacent the floor, which portion is provided with a bar which extends into the pole.

1:7

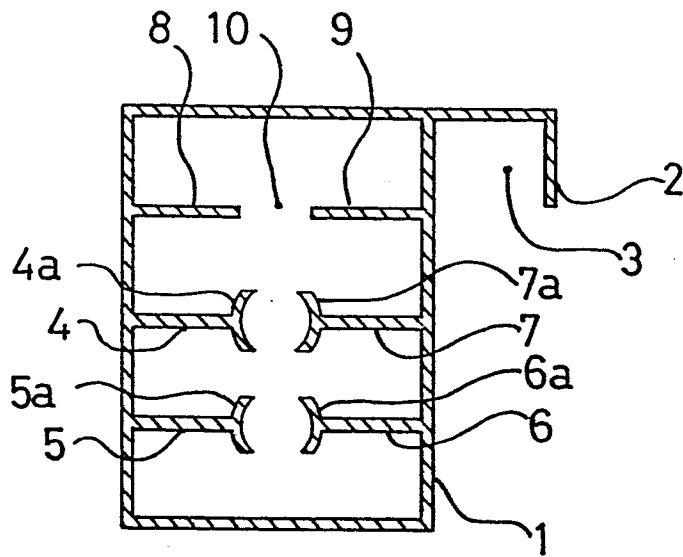


FIG. 1

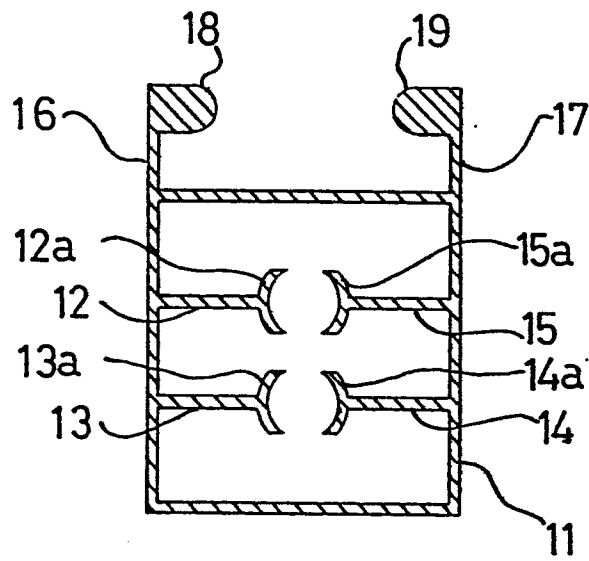


FIG. 2

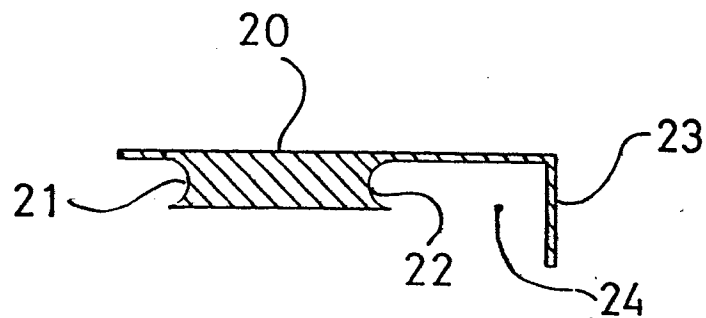
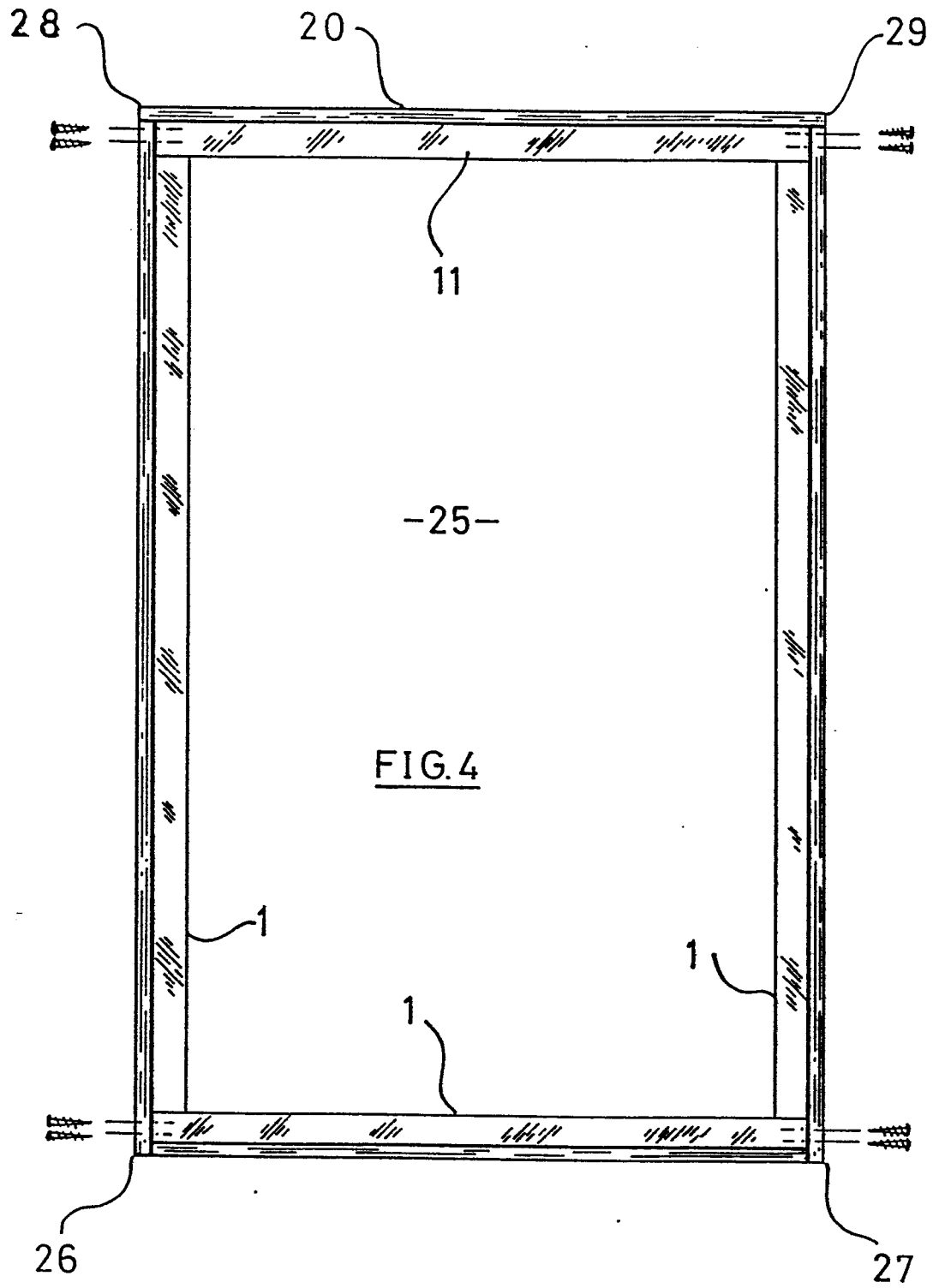


FIG. 3

2 : 7



3 : 7

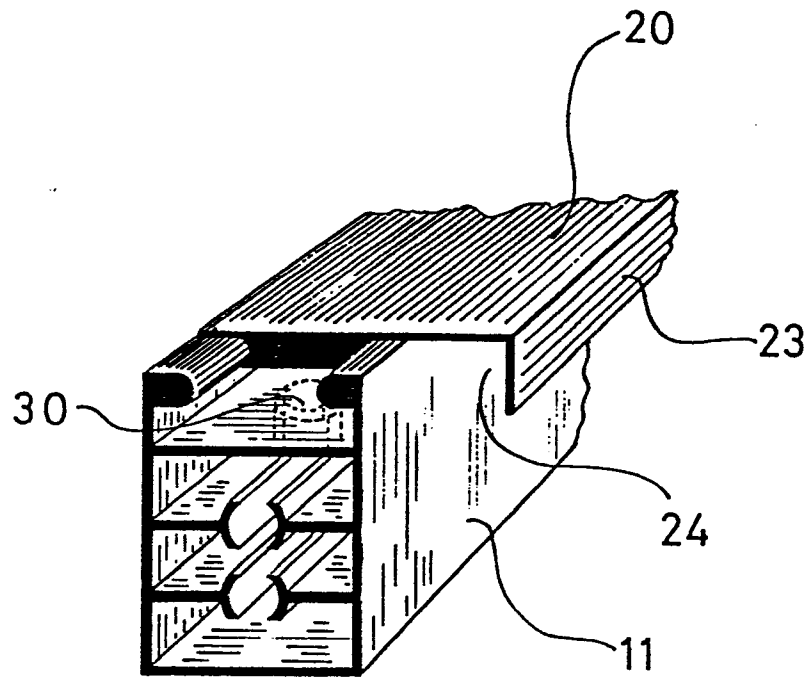


FIG. 5

4 : 7

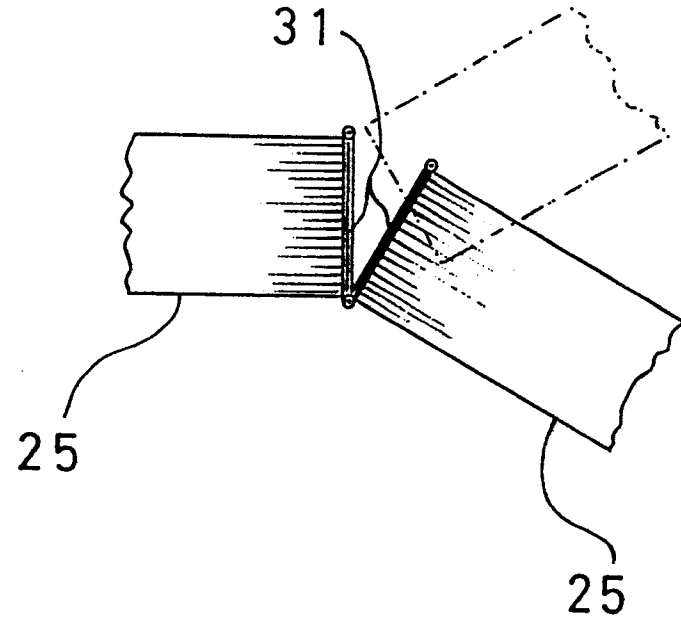


FIG. 6

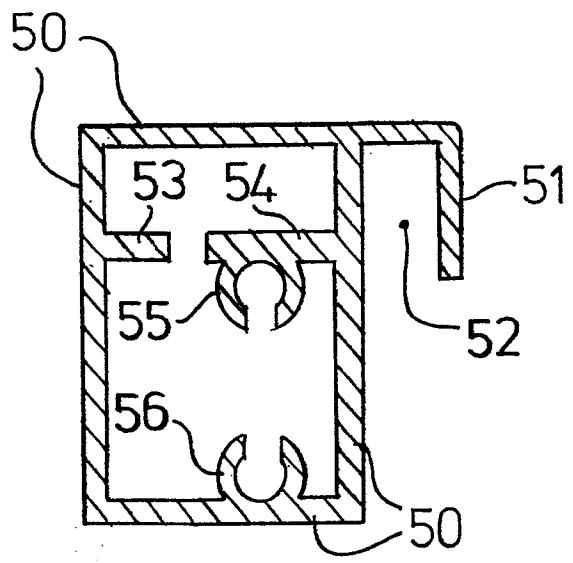


FIG. 12

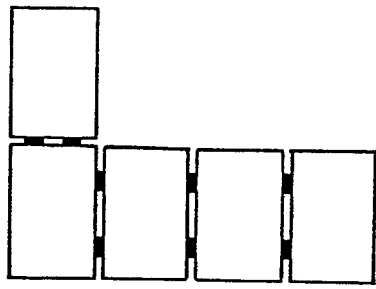


FIG. 7a

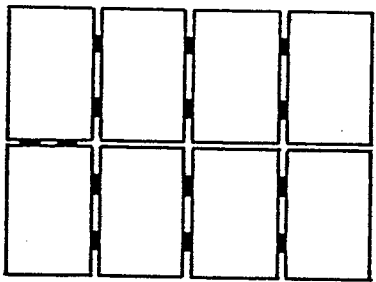
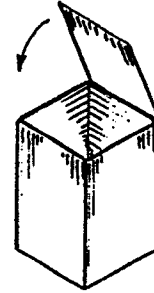


FIG. 7b

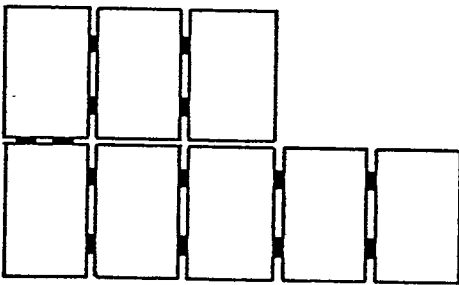
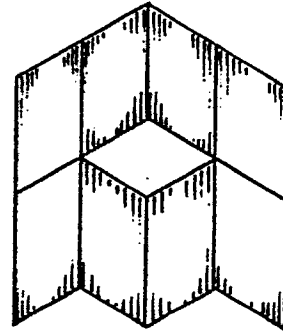


FIG. 7c

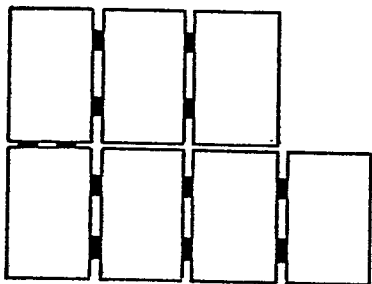
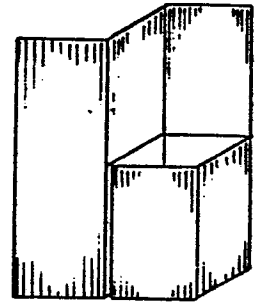


FIG. 7d

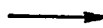
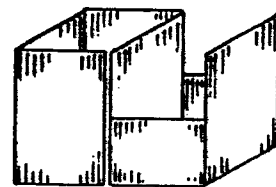
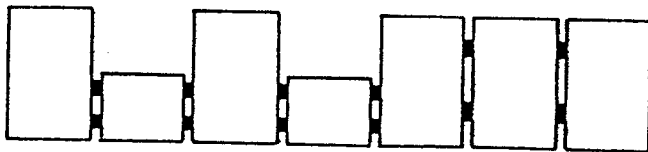


FIG. 7e



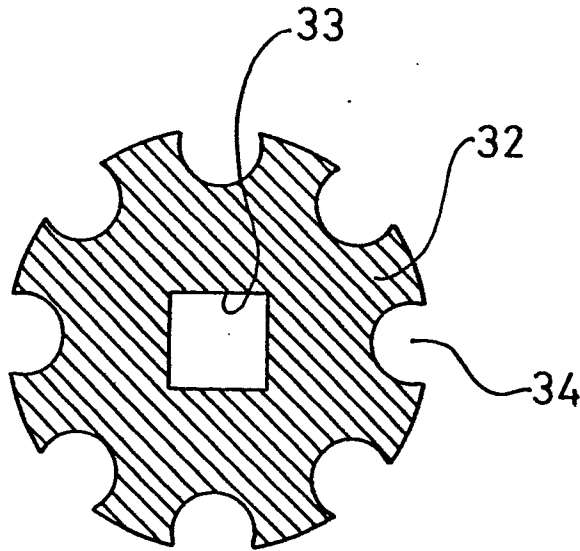


FIG. 8

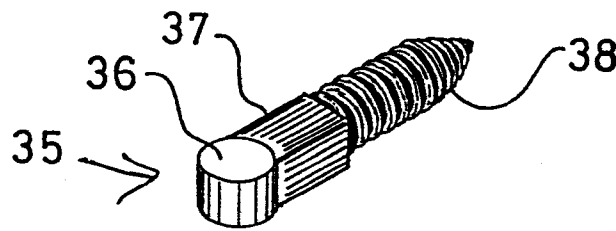


FIG. 9

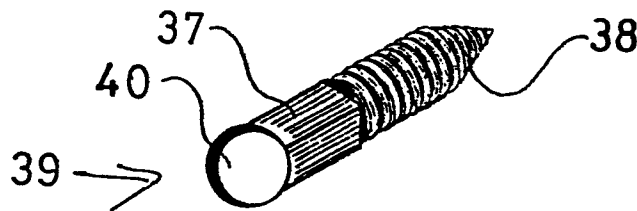


FIG. 10

7:7

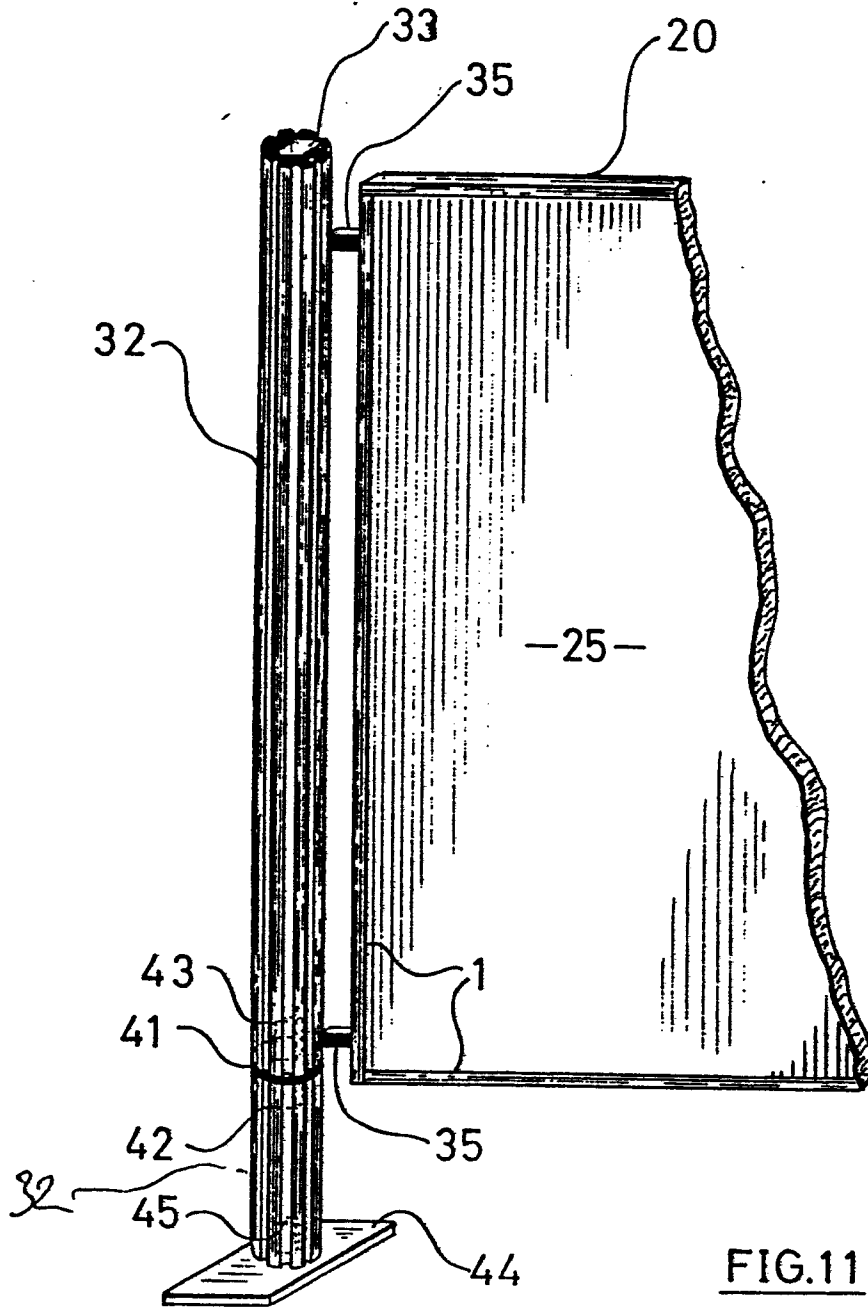


FIG.11