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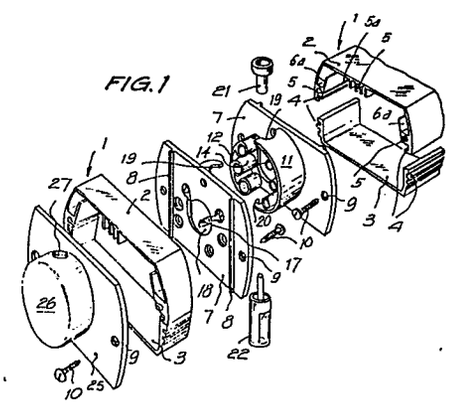
(54) **Set of assemblable components for lighting installations.**

(57) A set of assemblable components for lighting installations comprises complementary channel profiled members (2,3) with sets of ribs and grooves (4) for engagement with one another to form a box-like hollow body (1) having within it ribs or wings (6) for fastening electrical components for feeding and assembling lamps, a lid (7) being mounted at the ends of the assembled profiled members (2,3) and having outer assembly and electrical connection means (10) for engagement and means (11,12) for electrical connection with the lids (7) of adjacent box-like hollow bodies and in respect to assembly and connection bodies mounted in intermediate distribution junctions (28) located at desired points of the layout, the assembly lids (7), as well as the distribution junctions (28), having means for fastening suspension struts (23).

FIG.1



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Description

SET OF ASSEMBLABLE COMPONENTS FOR LIGHTING INSTALLATIONS

The present invention relates to a set of assemblable components for making up lighting apparatus or installations, with the use of which it is possible to implement installations that can be suited to the specific requirements of every case of application, starting from some components allowing several combinations to be performed.

With the lighting means hitherto known, laying down of lighting apparatus that must assume a modular and compact structure becomes intricate and costly. In fact, such installations must be performed starting from components specifically manufactured for every application, and this complicates the installation and puts the price of this latter up. Otherwise, one must resort to the use of commercially available components, but this has the drawback that these available components usually do not afford the ensemble image that can be attained with the equipment making the subject of the invention.

The equipment according to the invention is essentially comprised of boxes formed starting from channel profiled members having means for pressure fitting with one another in order to conform the box, at least one of these profiles being translucent. These profiled members show internal housings for conduction leads, as well as longitudinal grooves for anchoring of screw threaded bolts for affixing several components (lamp carriers, ballasts, primers, etc.). The ends of these boxes receive respective lids formed with means for engagement and electrical connection with other means provided on lids of complementary boxes. Terminal boxes, with no electrical connections, have been provided for the terminal ends of bodies placed at the ends of the ensemble of components fitted together.

The set of components comprises junction-like bodies for connection and bifurcation of other boxes or bodies, the junctions being provided with an optional number of adjustable couplings and connections mating with the couplings and connections of the above boxes.

In a preferred embodiment, the coupling means of the lids of the hollow bodies containing the lighting devices are formed with coaxial half-sleeves of different radius and protruding from their outer surfaces, which are complementary of those of an adjacent lid to form a cavity which surrounds a plurality of tubular housings wherein electric connection sockets and pins are placed, the connection sockets and pins of one lid being adapted for fitting with those of the lid of an adjacent body to be joined, the said electric connection sockets and pins being provided with connection tongues protruding towards the center of an opening formed on the lid, to receive the feeding electric cables.

It is forseen that one of the half-sleeves of the lids has mating semicircular cutouts at diametrically opposite points, so that, when the lid of a box is coupled with the lid of an adjacent one with all of the half-sleeves coaxial, the cutouts of one lid match with those of the other lid and define openings through which removable locking pins are threaded to ensure the lid engagement.

To advantage the locking pins are of a tubular structure to form a passageway for supporting struts.

The terminal lid itself shows a protruding, closed extension having an outline similar to that of the half-sleeves of the connection and assembling lids, with opposite circular holes for engagement of a tubular locking pin intended to receive a supporting strut.

The connection and engagement lids as well as the terminal lids have projections on their internal face in order to facilitate centering of the lid as regards the end of the box where they are fixed to, as well as holes for securing screws, the said holes being faced to housings formed in the profiled members making up the box and arranged for threaded engagement of the above screws.

It is forseen that some lids for assembling between two boxes have the sets of pins and sockets offset 90° as regards the sets of the other boxes, in order to locate said boxes in a position offset to an angle as well. The boxes may, likewise, be rotationally movable for directing the light as desired.

For a better understanding of this specification, the enclosed drawings show, only by way of example, one case of practical embodiment of the set of components for lighting installations.

In said drawings, figure 1 is a perspective view of the channeled profiled members making up the luminous boxes or container boxes for the electrical components of the equipment, the lids for assembly or engagement of the boxes and a terminal lid, in dismantled showing; figure 2 is a perspective view of one of the boxes with neither lids nor electrical components inside them; figure 3 is an elevation view of the outer face of one of the assembly and connection lids, the figure showing as well, in dotted lines, the position of one lid with the same half-sleeves and connection, though in a position which is offset 90° as regards the position shown in solid lines; figure 4 is a view in longitudinal section of two assembly and connection lids shown in separated relation; figure 5 is a similar view of the two lids assembled with one another; figure 6 is a perspective view showing a mounted set of equipment components; figure 7 is an elevation view of several components in assembled condition, and figure 8 is a diagrammatic plan view of the equipment as installed according to an optical layout.

The equipment of assemblable components for lighting installations shown in the drawings is made up of boxes generally referred to with 1 and formed of two profiled members 2 and 3, of generally channeled shape and mutually complementary, the edges of the said members having sets of ribs and grooves 4 for their mutual pressure fitting (Fig. 2). The profiled member 3 may be translucent in the

case that a luminous tube is housed therein.

The inside of the profiled members 2 and 3 is formed with longitudinal grooves 5 in ribs or wings 6 where the screws for securing the electrical components such as lamp carriers, ballasts, primers and other, are fastened to. The profiled members have, as well, lips 6a for housing the electrical cables.

A lid 7 is engaged at each end of the boxes 1 and is formed with ribs 8 for guiding their position, as well as holes 9 through which screws 10 are passed for screw threaded engagement with the ends 5a of the grooves 5, in order to secure the lids.

The outer face of the lids 7 has two mutually complementary, diametrically opposite half-sleeves 11 and 12 of different radius, which surround sets of mutually complementary sleeves or tubular housings 13 and 14 which receive, respectively, connection sockets 15 and pins 16 provided with tongues 17 directed towards the center of a central opening 18 of the respective lid for connection to the electric installation cables.

The half-sleeves 11 have pairs of semicircular. complementary and opposite cutouts 19 and 20 which mate with one another when the half-sleeves of one lid are fitted or assembled with those of a like lid (Fig. 5). The openings formed by the mated cutouts 19 and 20 serve to form a passageway for locking pins 21 and 22 having axial holes 23 through which supporting cables or struts 24 can be inserted. The locking pins 21,22 play the role of a linkage between two contiguous lids and ensure the stillness of these later.

The equipment comprises as well terminal lids 25 having an outline which is analogous to that of the lids 7, and a small closed outer box 26 of a shape similar to that of the half-sleeves 11 and 12, and formed with openings 27 which are similar to the openings 19 and 20 to provide for the insertion of locking pins 21 and 22 in order to secure the ends of suspending struts 23.

It may be forseen that the half-sleeves 11 and 12 are located offset 90° as regards their usual position, for example as indicated with doted lines in figure 3, to place a box 1a in a position which is offset 90° as regards the other boxes (Fig. 6 and 7).

The equipment comprises as well distribution or junction bodies 28 provided with connection sleeves 29 having a shape which is complementary to that of the half-sleeves 11 and 12 of the assembly lids 7, and provided with electric connection sockets and pins. The connection sleeves 29 have a tail 30 shaped so that it can be removably trapped in the junction body 28 and allow the body 29 to be placed in the suitable position. The body 28 can trap two or more tails 30 or respective sleeves 29, according to the needs of the installation (Fig. 8).

The above junction body 28 comprises means for securing a suspending strut 23, as well as for mounting a swinging spotlight 31 of a conventional shape (Fig. 6).

As appears from the above description and looking to the drawings, the equipment of assemblable components allows multiple combinations to be effected in or der to attain an illumination layout which is distributed in a manner suitable to the features of the site to be lighted, starting from a small series of invariable components featuring an ability for being assembled in different ways.

This equipment can be completed with an articulation device joined to the profiled members so that these latter can be directed in whatever direction. It is foreseen as well a flexible articulation that can be assembled to the profiled members in order to place the luminous tubes in a vertical plane.

Claims

1. Set of assemblable components for lighting installations, characterized in that it comprises complementary channel profiled members with means for engagement with one another to form a box-like hollow body having within it means for fastening electrical components for feeding and assembling lamps, a lid being mounted at the ends of the assembled profiled members and having outer assembly and electrical connection means for engagement and electrical connection with the lids of adjacent box-like hollow bodies and in respect to assembly and connection bodies mounted in intermediate distribution junctions located at desired points of the layout, the assembly lids, as well as the distribution junctions, having means for fastening suspension struts.

2. Set of assemblable components for lighting installations as in claim 1, characterized in that at least one of the channel profiled members forming the box-like hollow bodies is translucent.

3. Set of assemblable components for lighting installations as in claim 1, characterized in that the complementary profiled members constituting the box-like bodies, have inner grooves which the electrical components of the equipment are fastened to by means of screws, and the ends of such grooves receive in threaded engagement the lid securing screws.

4. Set of assemblable components for lighting installations as in claim 1, characterized in that at least one of the profiled members has longitudinal internal lips for housing electrical cables.

5. Set of assemblable components for lighting installations as in claim 1, characterized in that the outer faces of the lids and bodies mounted in the distribution junctions are formed with mutually complementary, outwardly protruding half-sleeves surrounding two set of protruding tubular housings within which connection sockets and pins are housed, the sockets and pins of one body or lid being engageable with those of another lid, and the half-sleeves being coupled with one another for assembling adjacent bodies or lids.

6. Set of assemblable components for lighting installations as in claims 1 and 5, characterized in that, according to an specific embodiment, each assembling lid and body related to

the distribution junction has two opposite half-sleeves of different diameter and adjustable, the ends of the half-sleeves of greater diameter being provided with semicircular cutouts mating with the cutouts of the greater half-sleeve of another assembly lid or body when both half-sleeves engage with one another, said cutouts forming together passageways for a removable locking pin ensuring connection of the two assembled bodies.

7. Set of assemblable components for lighting installations as in claim 1, characterized in that the terminal lids have an outer, box-shaped protrusion with diametrically opposite openings in which a removable locking pin, advantageously tubular, may be fitted.

8. Set of assemblable components for lighting installations as in claims 1 and 7, characterized in that the removable locking pins are of tubular construction.

9. Set of assemblable components for lighting installations as in claims 1, 7 and 8, characterized in that the tubular locking pins have means for fastening suspension struts.

10. Set of assemblable components for lighting installations as in claim 1, characterized in that some of the lids which are engageable to the ends of the profiled members have assembly and connection means offset to an angle as regards the position that such means have in the remainder of the lids.

FIG.1

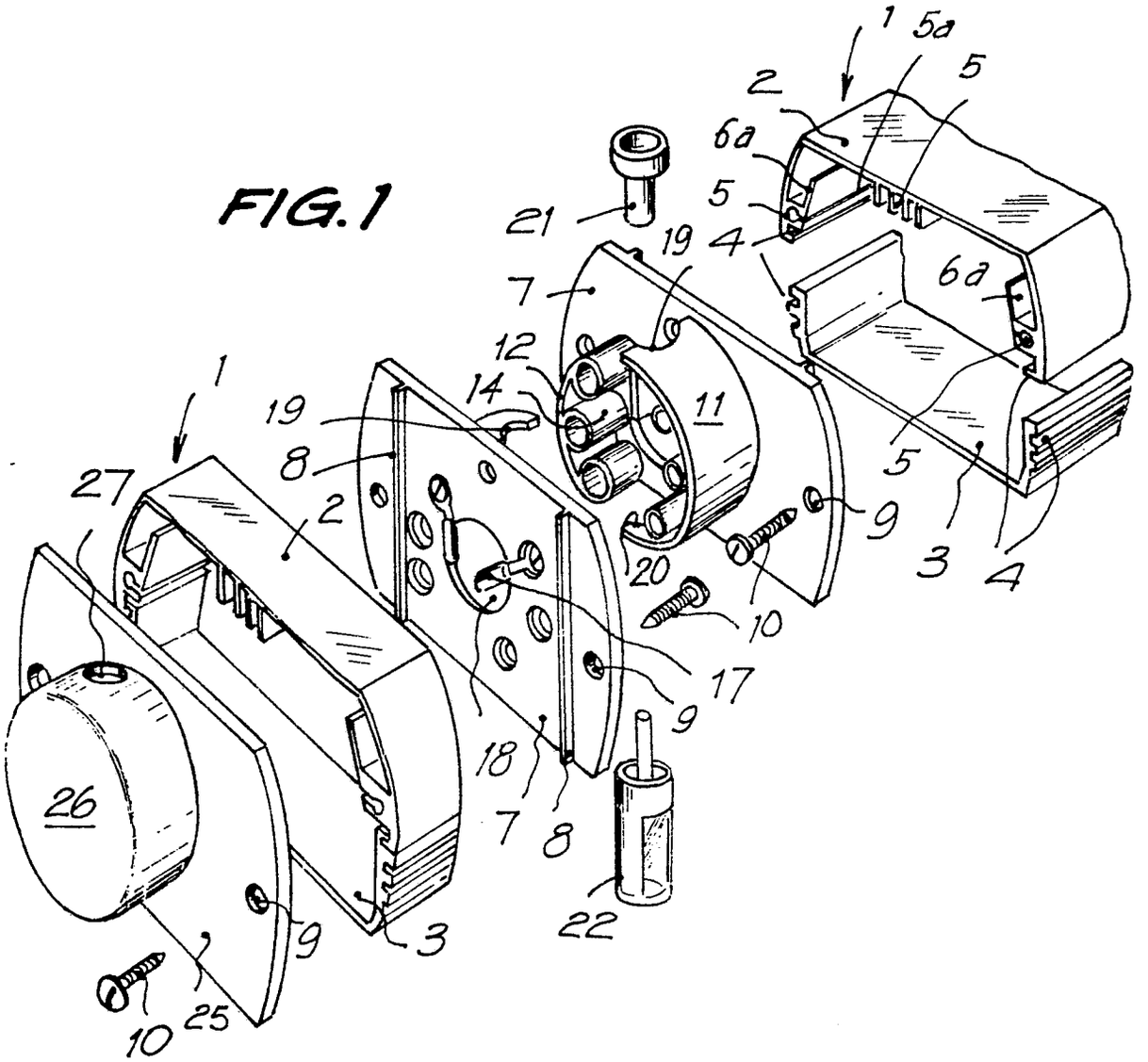
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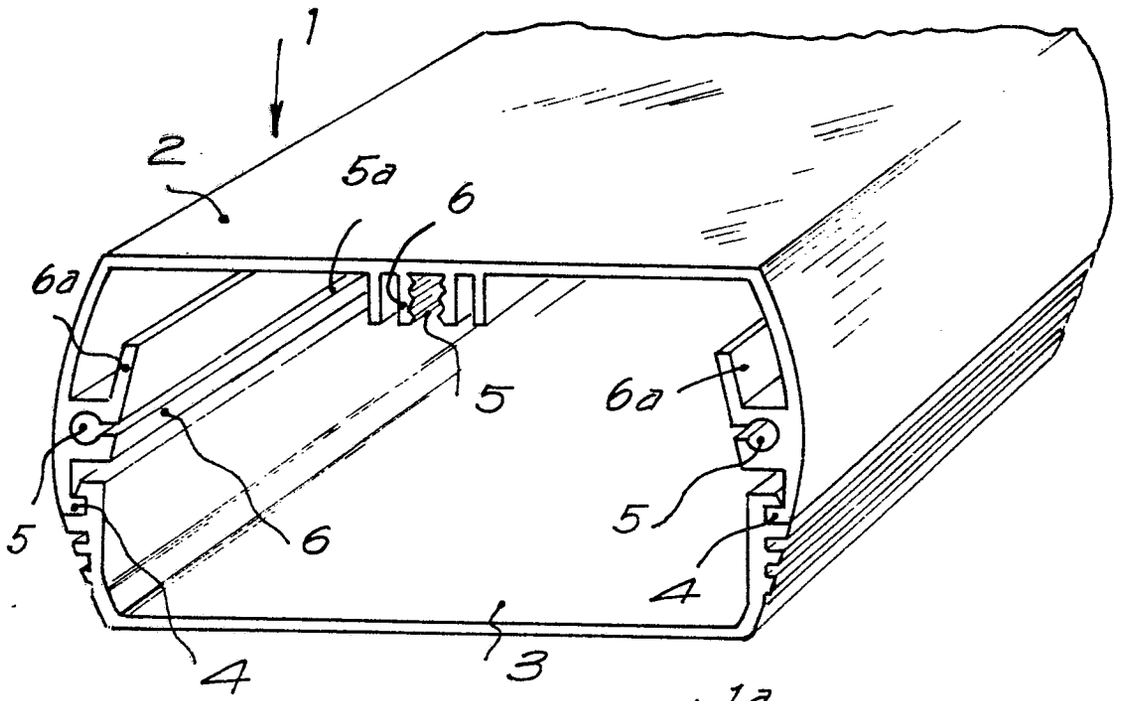
FIG. 2



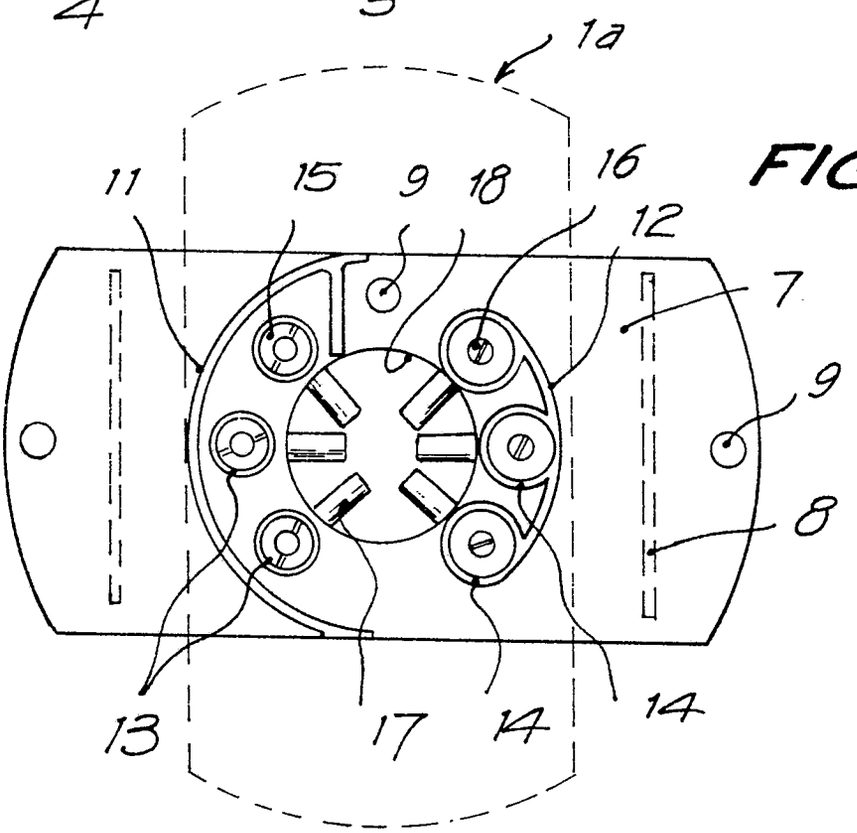


FIG. 3

FIG. 4

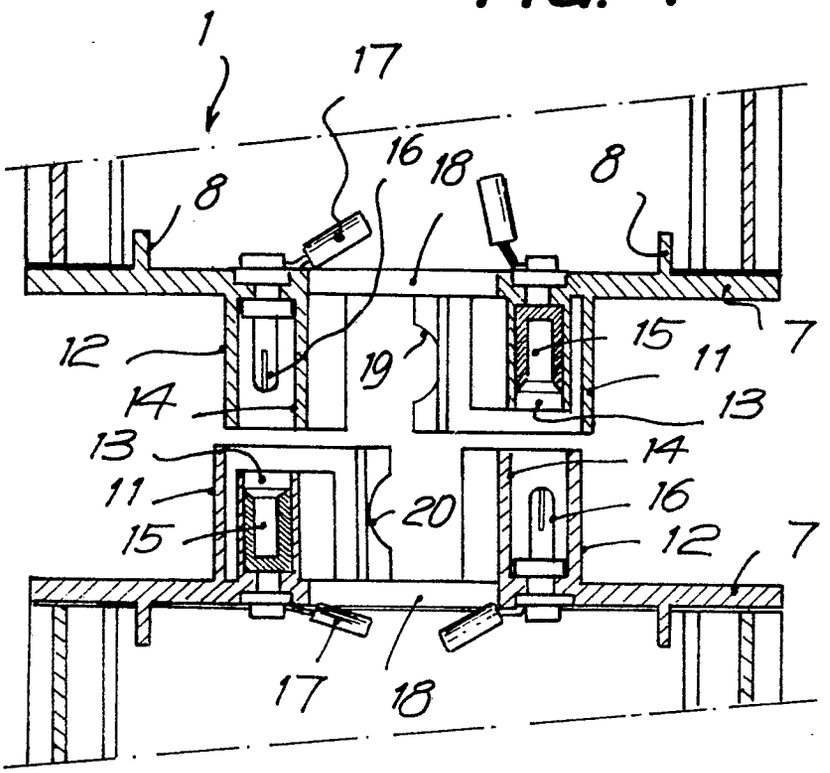

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FIG. 5

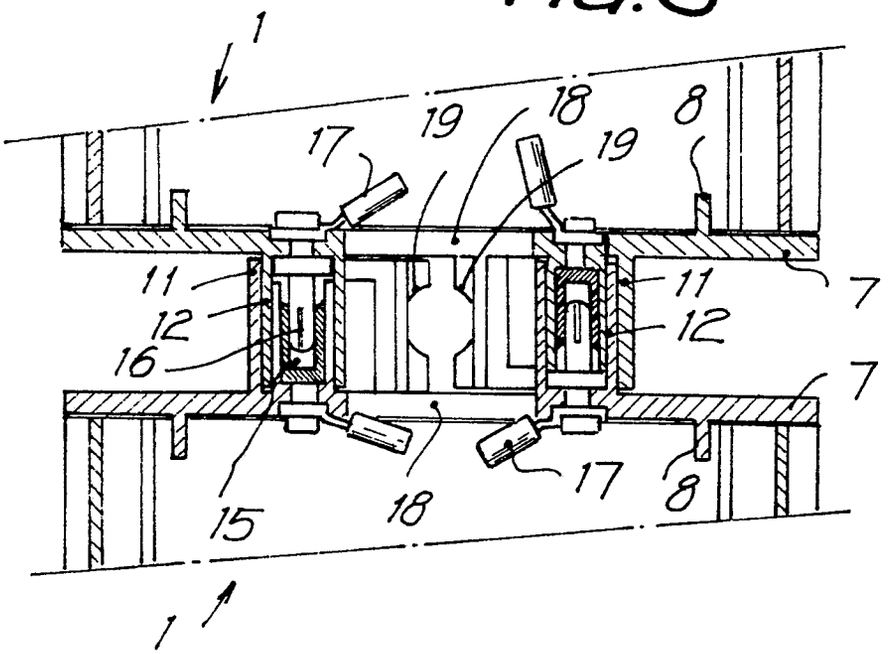
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FIG. 6

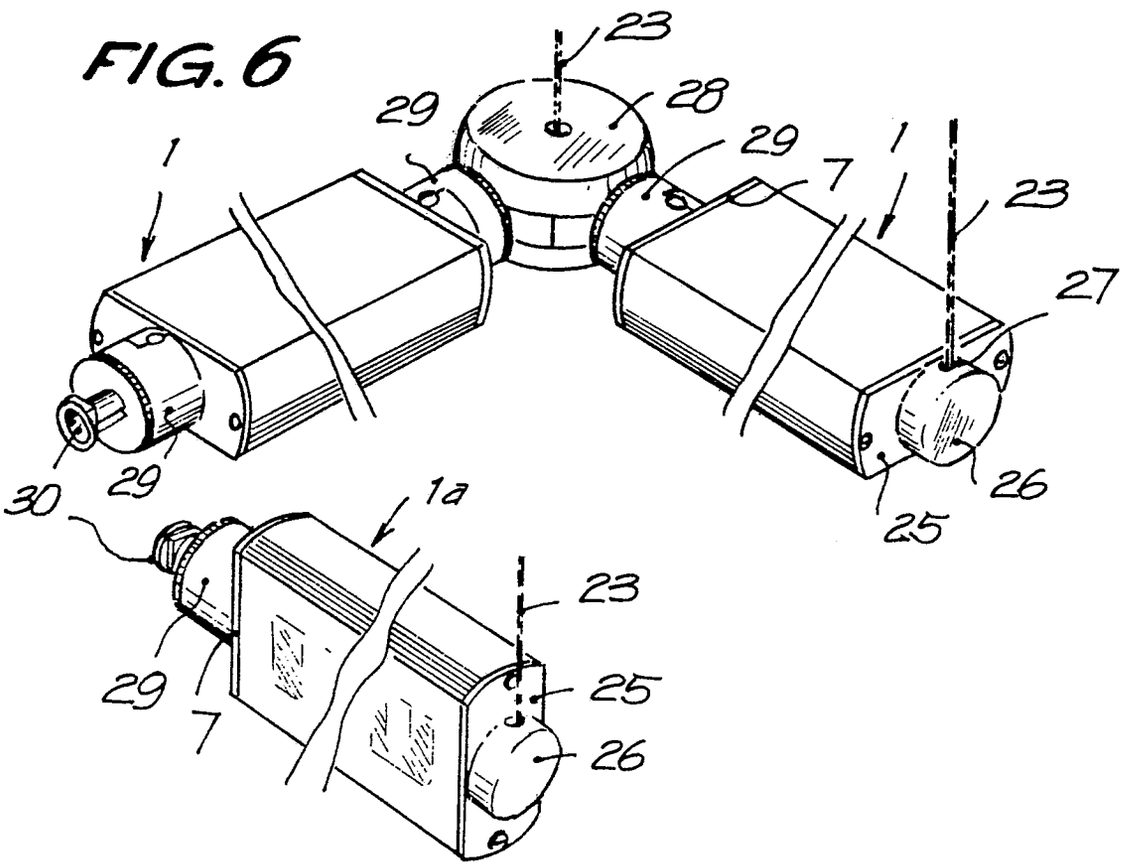
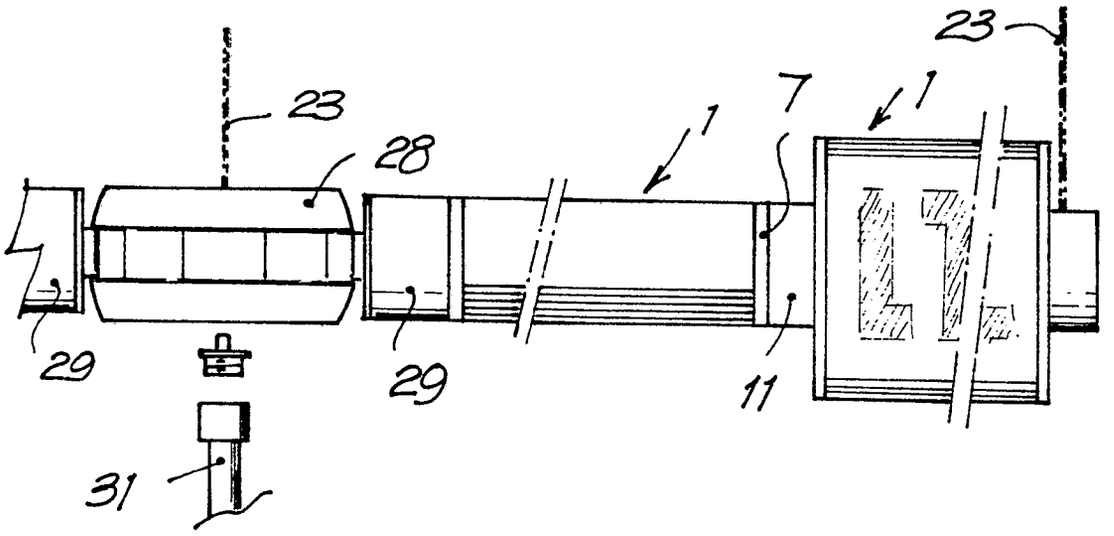


FIG. 7



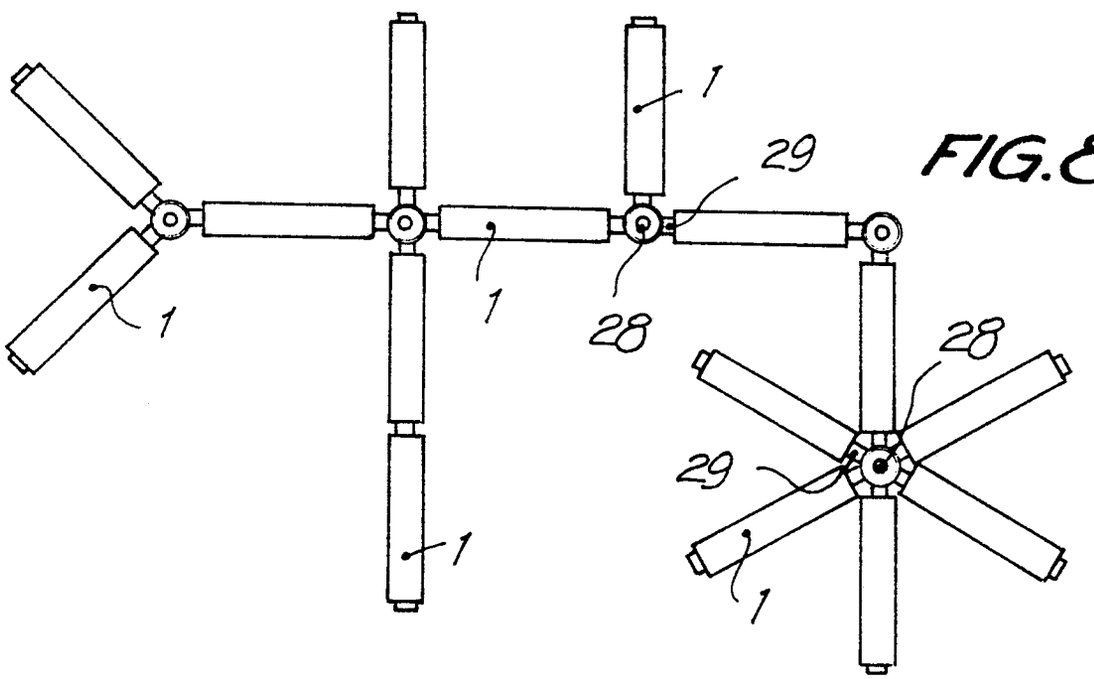


FIG. 8