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I-20133 Milano (MI)(IT)(54) **Modular framework for illuminated signs using flexible material.**

(57) Knockdown-elements framework for light signs, comprising a plurality of vertically arranged section bars (11) with quadrangular cross-section, one pair of edge section bars (1) with "L"-shaped cross-section, horizontally arranged in mutual opposite relation, a plurality of section bars with triangular cross-section (14), affixed, as pairs, on each vertical section bar (11), and with a continuous "U"-shaped seat (14a) at 45° relatively to the relevant vertical section bar, one pair of horizontally arranged section bars (17) with box-like cross-section, provided with a flange (17b) designed to support the sign, a quadrangular hollow designed to support the flexible sheet stretching device, a continuous, quadrangular seat (17a) at 45° opposite to the corresponding seat of said triangular section bars, and a groove-like seat (30) designed to slidingly support light reflective plates, a plurality of section bars (29) also provided with groove-like seats at 45° in order to slidingly support the other side of said plates, a plurality of section bars (16) with quadrangular cross-section arranged at 45° relatively to the vertical section bars inserted inside the seats provided in the triangular section bars and in the section bars with box-like cross-section, and plate-shaped covering elements (8) installed both above and under the structure.

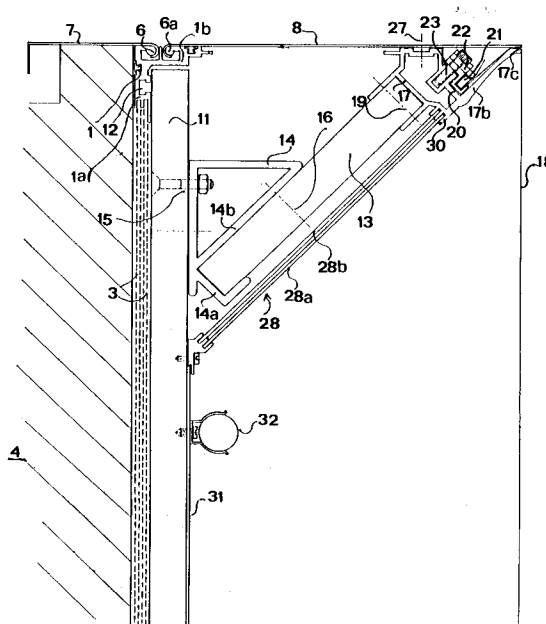


FIG.1

The present invention relates to a framework composed by knockdown elements, a part of which are modular elements, for supporting and stretching light signs made from flexible materials, of large size, suitable for long-distance display and installed on fixed structures, such as buildings, fuel distribution stands, and the like.

As known, at present the supporting/stretching structures for light signs in the form of a sheet made from a flexible material, are normally enclosed inside a quadrangular, box-like body with large sizes in length and width, and with a small depth; the signs are then lighted by fluorescent lamps, or another type of lamps, installed inside the box-like body, close to light-reflective surfaces. In some cases, the sheet of flexible, transparent or semitransparent material is taut on a quadrangular framework which has the configuration of a frame, rotatably anchored onto the upper edge of the container body by means of hinges or "U"-shaped hooking means, in order to enable the interior of the box-like body to be accessed for assembly, periodical cleaning, lamp replacement and maintenance purposes.

In other types of such structures, the supporting/stretching structure for the flexible sheet bearing the display, is provided with support section bars, which are such as to enable the sheet to be diverted around the edge of the same framework and then stretched inside the interior of the latter, by winding on small metal rods capable of being put under tension on the section bars which are contained inside the interior of the box-like body; in such a way, the sheet-supporting peripheral frame can be omitted.

In practice, these types of light signs, namely, both those equipped with a peripheral frame, and those in which the flexible sheet is taut flush of the openable framework, suffer from serious drawbacks, among which the poor stiffness of supporting and stretching section bars coupling, the poor tightness to the seepage of water and dust between the framework and the stretching section bars and box-like body, and difficulty of access to the interior of said box-like body.

In fact, in the case of frameworks which have the configuration of a frame and which are upwards-openable, the dap-joint hooking system with rotation of the framework around the edge of the upper horizontal side of the box-like body requires that in said side a continuous, quite long, open hollow is provided, with an "U"-shaped hook means, of same length, being simultaneously provided on the edge of the side of the rotatable framework; and, between said hollow and said hook means, a wide room should exist in order to allow the flexible sheet-bearing, stretching-means-bearing framework to rotate; inasmuch as it requires the

presence of a continuous, upwards-open hollow, this type of hooking constitutes a water and dust collecting means, with possible seepage of these substances into the interior of the box-like body.

Furthermore, some section bars of the support structure are positioned in front of the lamps, so that they unavoidably cause undesired shadows to appear on the sign.

In order to obviate most of these drawbacks, in copending Italian patent application No. 22059B/89 filed on Nov. 8th, 1989 to the same Applicant's name, a support/stretching structure for light signs in the form of a sheet made from a flexible material was proposed, which is of the type constituted by a plurality of metal section bars which constitute a framework, openable in shutter fashion, on a box-like body with lighted interior; said structure results to be endowed with high stiffness, can be easily and rapidly hooked to the box-like body, and is such as to allow the same structure to be opened with an opening angle of up to 180°, with self-explanatory advantages as regards the assembly, cleaning and servicing thereof.

Unfortunately, in practice, said structure shows the disadvantage that the upwards-openable sheet-bearing framework thereof is quite heavy, and that, when the size of the box-like body has to be changed, i.e., the depth, as well as the length and width thereof have to be changed, the section bars which support the stretching device have to be integrally replaced.

Therefore, a purpose of the instant finding is of providing a framework for supporting and stretching light signs constituted by a sheet made from a flexible material, which framework has such a structure as to obviate the drawbacks and overcome the disadvantages associated with the structures known from the prior art and, above all, such as to display high stiffness, as well as to give easy and quick access to the structural elements housed inside the support/sheltering framework, as well as to be capable of securing an even brightness throughout the sign surface, preventing any undesired shadows from being formed on the same sign.

Another purpose of the instant finding is of providing a light-sign support/stretching structure which is so conceived as to result to be, at least partially, modular, and hence easily adaptable to different sizes of housing frameworks, to require a small number of metal section bars and sheet elements, to be easily and rapidly assemblable, also off place, and to secure, in any case, a perfect tightness to atmospheric agents.

These and still further purposes and relevant advantages, which will be cleared from the following disclosure, are achieved by a knockdown-elements framework for supporting and stretching light

signs made from a sheet of a transparent or semi-transparent flexible material, using sign stretching elements of discontinuous-rod type suitable for being put under tension by means of pushing screws, which framework comprises, according to the present invention:

- a plurality of section bars with quadrangular cross-section having a height substantially equal to the height of the sign, vertically arranged parallel to each other, at a prefixed distance and aligned in vertical planes, 5
- at least one pair of edge, substantially reverse-"L"-shaped section bars, horizontally arranged parallel to each other, at the opposite ends of said equidistant vertical section bars, so as to result to be in mutual opposite, mirror-reversed relation, with each of said section bars having a length equal to the length of the longitudinal sides of the sign, 10
- a plurality of section bars with a right-angle triangle-shaped cross-section, removably affixed, as pairs, on each vertical quadrangular section bar, in equidistant positions and with their respective hypotenuses being inclined upwards and, respectively, downwards, so as to result mutually opposite in mirror-like reversed relation, with each of said triangular section bars being provided with an arched, "U"-shaped flange with its longitudinal central axis at 45° relatively to the relevant vertical section bar, suitable for constituting a quadrangular seat integral with the same vertical section bar, 15
- at least one pair of section bars with box-like cross-section having a length equal to the length of said edge, "L"-shaped section bars, each of said section bars with box-like cross-section being arranged parallel to, and substantially co-planar with, at the top side as well as at the bottom side, said "L"-shaped section bars, each of said section bars with box-like cross-section being provided with a continuous flange designed to support the flexible sheet which constitutes the sign, a continuous quadrangular hollow designed to house the stretching device, a continuous, flat upper surface with a groove for housing a gasket, a quadrangular seat inclined at 45°, and a continuous groove-like seat, also at 45°, in order to slidably support light-reflective plates with possibility of said light-reflective plates also overlapping to each other, 20
- a plurality of section bars with quadrangular cross-section, arranged inclined at 45° to said vertical section bars and anchored, at one of their ends, inside said seat at 45° integral with said section bar with triangular cross-

section, and with their opposite end being housed inside said "U"-shaped seat provided in the section bars with box-like cross-section with sign-support flange,

- a plurality of section bars provided with groove-like seats inclined at 45° and arranged as mutually-opposite pairs on each vertical section bar, 25
- a plurality of light-reflective plates, slidably mounted inside the groove-like seats at 45° provided in said section bars with box-like cross-section, which support the sign inside the groove-like seats provided in the section bars affixed onto each vertical section bar, as well as 30
- two covering elements installed both above and under the sign-bearing structure, each of which is constituted by lengths of metal sheet co-planarly associated with one another, mounted with possibility of rotation around horizontal pins provided in said upper and lower "L"-shaped section bars, with fastening means of lap-joint, screw, and the like, type, being furthermore provided for stably connecting: said "L"-shaped section bars to the opposite ends of said vertical section bars; said vertical section bars to supporting walls; said triangular section bars to the respective vertical section bars; said covering elements to the section bars with box-like cross-section which support the sign; and the section bars with groove-like seats to the individual vertical section bars. 35

More particularly, each of said reverse-"L"-shaped continuous section bars, placed above and under said vertical section bars, shows, in the horizontal flange of said "L"-shape, a continuous hollow (groove) with quadrangular cross-section, i.e., substantially a box structure with its upper face open, ending with two continuous protrusions with cylindrical outline, around which the arched longitudinal edge of the upper and, respectively, lower covering element of the support structure is rotatably inserted, so as to allow the access to the interior of said body to be gained from the top side and/or from the bottom side. Furthermore, said upper and lower rotatable covering elements are constituted by sectors having a pre-established length, and a width equal to the depth of the structure, releasably connected with one another by at least one cross element anchored inside a longitudinal groove provided at the head of each of said section bars with box-like cross-section bearing the sign-supporting flanges. 40

Further characteristics and advantages of the present finding will be clearer from the following disclosure in detail of a preferred form of practical embodiment thereof, made by referring to the ac-

companying drawing tables, supplied for merely indicative, non-limitative purpose, in which:

Figure 1 shows a cross-sectional view of a framework for supporting and stretching flexible light signs, realized according to the present invention and illustrated only in the region of the upper portion of the housing body of box-like structure, in that the lower portion of said body is specularly identical to the upper portion;

Figure 2 shows a cross-sectional view, on an enlarged scale, of one of the reverse-"L"-shaped edge section bars suitable for being connected with the opposite ends of mutually aligned vertical section bars equidistant from each other, and for supporting a rear sealing vertical wall, in case a support wall is not present;

Figure 3 shows a cross-sectional view, also on an enlarged scale, of one of the "U"-shaped section bars with box-like cross-section, with the various longitudinal seats destined to support the section bars with quadrangular cross-section inclined at 45°, and of the flexible sign supporting and stretching rods;

Figure 4 shows a sectional view of a continuous section bar with triangular cross-section, for anchoring the inclined section bars to the vertical section bars;

Figures 5 and 6 show an also sectional view, respectively of a section bar with box-like cross-section used as a vertical support for "L"-shaped section bars, and also as inclined section bar at 45° to the vertical section bars, as well as a section bar with sliding guides for light-reflective plates; while

Figure 7 shows a top plan view of the framework of Figure 1, without the upper, openable metal sheet, incorporating a stretching device for the internal, free edges of the flexible sheet stretched at the corners at 90° between two adjacent faces of the stretched sheet.

Referring to said figures, and in particular to Figure 1, the flexible light sign supporting/stretching framework according to the present invention is constituted by the combination of various laminar, extruded section bars of aluminum and the like, suitable for forming a structure open at at least one of its visible faces, defined by a taut flexible sheet which constitutes the true sign.

The framework of Figure 1 is destined to be anchored to a whatever support means and is constituted, in the present case, by at least two continuous edge section bars 1, the length of which equates the length of the sign to be supported, and which are positioned parallel to each other, at the opposite ends, i.e., the upper end and the lower end, of quadrangular section bars 11 equidistant from each other on vertical planes. Said section

bars 1 (only the upper of them is depicted in Figure 1) have (Figure 2) a cross-section with a reverse-capital-"L" shape, the vertical flange 1a of which is provided with longitudinal, channel-like guides 2-2a and so forth, suitable for receiving, in dap-joint fashion, thin metal plates 3 forming the vertical rear wall of the support framework. Said thin metal plates may be omitted when the structure is anchored to a continuous support wall, such as, e.g., a masonry wall 4.

The upper, horizontal flange 1b of each "L"-shaped section bar is provided with two continuous hollows 5 and 5a of quadrangular shape, the upper face of which is partially open, and is provided with mutually opposite cylindrical enlargements 6-6a destined to constitute: the first one, a means for spring-like retaining a thin metal plate or strip 7 (Figure 1) for realizing a seepage-tight seal between the section bar 1 and the wall 4 (or another support element); and the second cylindrical enlargement 6a constituting the stationary portion of a continuous hinge destined to rotatably receive a, respectively upper and lower, sealing metal sheet 8, which constitutes the top or bottom sealing side of the structure.

The same longitudinal section bars 1 show, in their flanges, at least one channel-like seat 9 and, respectively, 9a, suitable for housing tight-sealing gaskets of tubular or balloon shape. Furthermore, in the vertical flange 1a of each "L"-shaped section bar a channel-like seat with quadrangular cross-section 10 is provided (Figure 2), the function of which is disclosed in the following.

Between the inner surfaces 1c and 1d of the same "L"-shaped section bars, section bars 11 with quadrangular cross-section, the cross-section of which is shown in Figure 5, are vertically arranged and aligned at a prefixed distance, such as to constitute support means for further section bars, as is better explained in the following. Each section bar with box-like cross-section 11 is furthermore provided, at its opposite ends, with a protruding element with a quadrangular end-head 12 (Figure 1), suitable for being inserted, in dap joint fashion, inside said quadrangular-cross-section seat 10 provided in the vertical flanges 1a of the opposite "L"-shaped section bars.

Therefore, the various vertical section bars 11 constitute, together with the "L"-shaped section bars, a stiff framework, with which a sealing wall can be associated, when required, by means of the installation of thin closure plates 3 slidably mounted, with overlapping, inside the opposite guide grooves 2-2a, etc., whilst, when the structure is affixed to a fixed wall, e.g. masonry wall, 4, said plates can be omitted. With each vertical section bar 11, all of which are equidistant from each other in the direction of the length of the box-like body,

one pair is removably associated of quadrangular section bars 13, the cross-section and transversal dimensions of which are equal to those of the vertical section bars 11. Said section bars 13 are arranged diagonally inclined at 45° to the vertical section bars, and namely, one of them is directed upwards and the other one is directed downwards.

More precisely, each section bar 13 is placed at 45° relatively to the common section bar 11, is designed to have different length value, as a function of the depth of the support structure, and is removably anchored to the section bar 11 with possibility of adjustment of its installation level, by an end thereof being inserted inside an "U"-shaped seat 14a associated with a hollow support section bar 14 (Figures 1 and 4), with triangular cross-section.

Said section bar 14 has a cross-section having the shape of a right-angle triangle and can be anchored to the section bar 11 by means of suitable fastening means and relevant screws 15, so that the "U"-channel-shaped seat 14a, suitable for housing the end of the section bar 13, is also arranged inclined at 45°.

Both section bars 13, inclined at 45° and directed upwards and downwards respectively on a same vertical section bar 11, are then fastened against the hypotenuse side 14b by means of transversal screws 16 (only the trace of such screws is illustrated in short-dashed line in Figure 1).

At the ends of both sets of inclined section bars 13, opposite to the ends associated with the triangular section bars 14, a continuous section bar 17 (Figures 1 and 3) is associated, which is arranged in a horizontal position and crosswise to the individual inclined section bars. Said continuous section bar 17 is given an equal length to the longitudinal side of the flexible sign 18. Said continuous section bars 17 constitute the support structure, to support the flexible sheet which constitutes the sign in the vertical direction and parallel to the vertical rear wall defined by the vertical section bars 11 (Figure 1). Each of said support section bars 17 has a hollow cross-section with two mutually opposite protruding flanges 17a, such as to form a channel-shaped seat with a quadrangular cross-section suitable for receiving the free end of the inclined section bars 13, which are then affixed to said protruding flanges 17a by means of transversal screws 19. Said section bar 17 furthermore has its flange 17b ending with an outwards-arched end 17c performing the task of enabling the flexible sheet 18 which constitutes the sign to correctly rest on the section bar edge, to be diverted around the rounded edge 17c of said flange 17b, and then the bent edge of said sheet to be blocked inside a continuous channel-shaped seat 20 by means of

stretching rods of known type. In fact, the stretching of said sheet is made, in a known way, by folding the opposite longitudinal edges of the sheet 18 around the upper and lower flanges 17c, then winding said edges around quadrangular rods 21, then sliding the latter in said seat 20 and finally putting the quadrangular rods 21 under tension, by being pushed towards the bottom of said seat 20 by means of horizontal stripes 22 tightened by means of screws 23 engaged inside respective screw-threaded seats 24 (Figure 3), using, for example, the hooking/stretching device which is the subject-matter of Italian patent application No. 22,302 A/89 filed by the same Applicant on November 8th, 1989.

Each continuous section bar 17 has its upper portion 17e flat and flush with the upper surface of the flanges 1b of the "L"-shaped section bars around which the upper and lower metal sheets 8 are rotatably associated.

Furthermore, the same section bar 17 is provided with a protruding flange 25 and a hollow having the shape of a continuous groove 26, coplanar with each other, suitable for receiving longitudinal plates which perform the task of connecting the various sectors (of pre-established length, and same width) which constitute the sealing metal sheets 8. Each sealing metal sheet 8 is fastened onto the upper plane of the section bar 17 by means of equally spaced screws 27 (Figure 1).

Inasmuch as each metal sheet 8 is rotatably mounted around the cylindrical enlargements 6a, by removing the screws 27 of one or more of said sector(s) which constitute said metal sheets 8, the metal plate sector(s) can be lifted, by being turned (in shutter fashion), therefore giving access to the interior of the box-like body, from the bottom and/or from the top, for cleaning operations, lamp replacement and servicing in general. Furthermore, inside the structure and in a position closely approached and parallel to the upper and lower section bars 13, a wall 28 of light-reflective material is installed, which is constituted by at least two light-reflective plates 28a-28b (Figure 1) mounted guided, at one of their longitudinal sides, on section bars 29 (Figure 6) removably anchored, by screws, to the vertical section bars 11 and provided with parallel prismatic grooves 29a-29b inclined at 45°, inside which the individual light-reflective plates may slide until to mutually overlap, lengthwise to the structure; and, along their opposite longitudinal sides, inside analogous prismatic grooves 30 (Figure 1) provided in the continuous section bars 17.

This particular solution enables, after the upper sealing cover 8 being lifted, a light-reflective plate to be slid relatively to the adjacent plate, until they are mutually overlapped, so as to give the operator

the access, from the bottom or from the top, to the internal parts of the box-like body.

Inside the bearing structure, plates of light-reflective material 31 are furthermore provided anchored to the vertical section bars 11 present at least on the vertical rear wall 3, as well as usual lamps 32, also anchored to the vertical section bars 11.

Still according to the present invention, in order to improve the aesthetical appearance of the sheet of flexible material, in particular at the corners of the visible, taut face thereof, a stretching device is provided, which is installed at the four corners and inside the interior of the box-like body, which stretching device eliminates any possible wrinkles and/or folds which may arise when the edges of the flexible sheet are bent and stretched around two adjacent sides (at 90° to each other) of the sign-bearing visible faces.

Said device is constituted, as depicted in Figure 7, by two length-adjustable tie-rods 33-33a anchored to the vertical section bars 11 or to other internal fixed parts of the box-like body, which tie-rods are provided with hook- or ring-shaped arched ends 34, connected to small cables 35 which, in their turn, are integral with both edge portions 36-36a which are inside the interior of the structure after said flexible sheet being folded and stretched around two adjacent sides of the quadrangular framework formed by the external flanges 17c of the continuous section bars 17 which support the stretching mechanisms.

Both edges, anyway folded and crumpled 36-36a are stretched by means of a stay bolt 37 interposed between the two sections which constitute the tie-rods, the coaxial ends of which are engaged with the sleeve of the stay bolt, provided at its ends with two screw-threads, the directions of which are opposite to each other. By revolving the sleeves, the stretching of the individual internal edges can be adjusted, until any possible wrinkles and folds present in the external sheet at the four corners of the visible face, disappear.

From the above, the practical advantages, of use and of financial character, of the present finding consist in the possibility of providing section bars with box-like cross-section which can be both used as vertical section bars, and as diagonally inclined section bars, and are such as to enable them to be used for accomplishing structures having different sizes; in the present case, in fact, in order to increase, or decrease, the depth of the structure, it is enough that the triangular section bar 14 is shifted upwards or downwards, while the length of the section bars 13 is simultaneously reduced accordingly. Furthermore, the support structure disclosed hereinabove can be easily assembled off place, independently of its dimensions.

Claims

1. Framework for supporting and stretching flexible sheets which constitute light signs, using a plurality of metal section bars and sheet-stretching devices of the types with discontinuous rods suitable for being put under tension by means of screws, characterized in that it comprises:
 - a plurality of section bars with quadrangular cross-section having a height substantially equal to the height of the sign, vertically arranged parallel to each other, at a prefixed distance and aligned in vertical planes,
 - at least one pair of edge, substantially reverse-"L"-shaped section bars, horizontally arranged parallel to each other, at the opposite ends of said equidistant vertical section bars, so as to result to be in mutual mirrored opposite relation, with each of said section bars having a length equal to the length of the longitudinal sides of the sign,
 - a plurality of section bars with a right-angle triangle-shaped cross-section, removably affixed, as pairs, onto each vertical quadrangular section bar, in equidistant positions and with their respective hypotenuse being inclined upwards and, respectively, downwards, so as to result mutually opposite in mirror-like reversed relation, with each of said triangular section bars being provided with an arched, "U"-shaped flange with its longitudinal central axis at 45° relatively to the relevant vertical section bar, suitable for constituting a quadrangular seat integral with the same vertical section bar,
 - at least one pair of section bars with box-like cross-section having a length equal to the length of said edge, "L"-shaped section bars, each of which is arranged parallel to, and substantially co-planar with, at the top as well as at the bottom, said "L"-shaped section bars, each of said section bars with box-like cross-section being provided with a continuous flange designed to support the flexible sheet which constitutes the sign, a continuous quadrangular hollow designed to house the stretching device, a continuous, flat upper surface with a groove for housing a gasket, a quadrangular seat inclined at 45°, and a continuous groove-like seat, also at 45°, in order to slidingly support light-reflective plates with possibility of said light-reflective plates also

- overlapping each other,
- a plurality of section bars with quadrangular cross-section, arranged inclined at 45° to said vertical section bars and anchored, at one of their ends, inside said seat at 45° integral with said section bar with triangular cross-section, and with their opposite end being housed inside said "U"-shaped seat provided in said section bars with box-like cross-section with sign sheet-support flange,
 - a plurality of section bars provided with groove-like seats inclined at 45° and arranged as mutually-opposite pairs on each vertical section bar,
 - a plurality of light-reflective plates, slidably mounted inside the groove-like seats at 45° provided in said section bars with box-like cross-section, which support the sign inside the grooved seats provided in the section bars affixed onto each vertical section bar, as well as
 - two plate-shaped covering elements installed both above and under the sign-bearing structure, each of which is constituted by lengths of metal plate coplanarly associated with one another, mounted with possibility of rotation around horizontal pins provided in said upper and lower "L"-shaped section bars, with engagement means of dap-joint, screw, and the like, type, being furthermore provided for stably connecting: said "L"-shaped section bars to the opposite ends of said vertical section bars; said vertical section bars to supporting walls; said triangular section bars to the respective vertical section bars; said covering elements to the section bars with box-like cross-section which support the sign; and the section bars with grooved seats to the individual vertical section bars.
2. Framework according to claim 1, characterized in that each of said horizontal, "L"-shaped section bars is provided, at its top, with at least one continuous hollow with quadrangular cross-section, with the upper horizontal side open and provided with a continuous, cylindrical protrusion suitable for housing, by rotation, the arched longitudinal edge of the upper, and respectively, lower horizontal, structure-sealing plate-like element in order to allow the access to the interior of said body to be gained from the bottom side and/or from the top side, after shutter-like opening either, or both, of said sealing elements.
3. Framework according to claims 1, characterized in that said upper and lower, horizontal, support structure-sealing elements are constituted by sections, or sectors of metal sheet with constant length, connected with each other by means of at least one crosspiece removably anchored inside a hollow provided at the head of said section bars with box-like cross-section bearing the stretching bars.
4. Framework according to claim 1, characterized in that said plates of light-reflective material are slidably mounted, with possibility of mutual overlapping, inside section bars with parallel grooves, removably associated with the vertical section bars parallel to, and equidistant from, each other, so as to be capable of being shifted along said vertical section bars and parallel to the shifts of the section bars with quadrangular cross-section inclined at 45°.
5. Framework according to claim 1, characterized in that said vertical section bars with quadrangular cross-section and said inclined section bars bearing the stretching device have a same cross-section, so as to be useable in both positions, by simply reducing the length thereof.
6. Framework according to claim 1, characterized in that plates made from a light-reflective material and sign-lighting lamps are affixed onto said vertical section bars.
7. Framework according to claim 1, characterized in that it is provided with a plurality of metal plates slidably anchored inside parallel longitudinal grooves provided at the ends of the vertical flanges of said upper and lower "L"-shaped section bars, and destined to constitute a possible vertical rear wall.
8. Framework according to claim 1, characterized in that it is provided, at the four corners of the internal faces of the flexible sheet taut on the external, continuous flanges of the horizontal section bars with box-like cross-sections, with a stretchable and adjustable device constituted by pairs of tie-rods hooked to the fixed section bars internal to the support structure and to the edges of the taut flexible sheet, folded inside the interior of said structure at the corners, at 90° to each other, of said flexible sheet, so as to remove any possible folds and wrinkles at the corners of the external surface of said flexible sheet.
9. Framework according to claim 1, characterized

in that the section bars which compose the support structure are made from an aluminum alloy, and are manufactured by extrusion.

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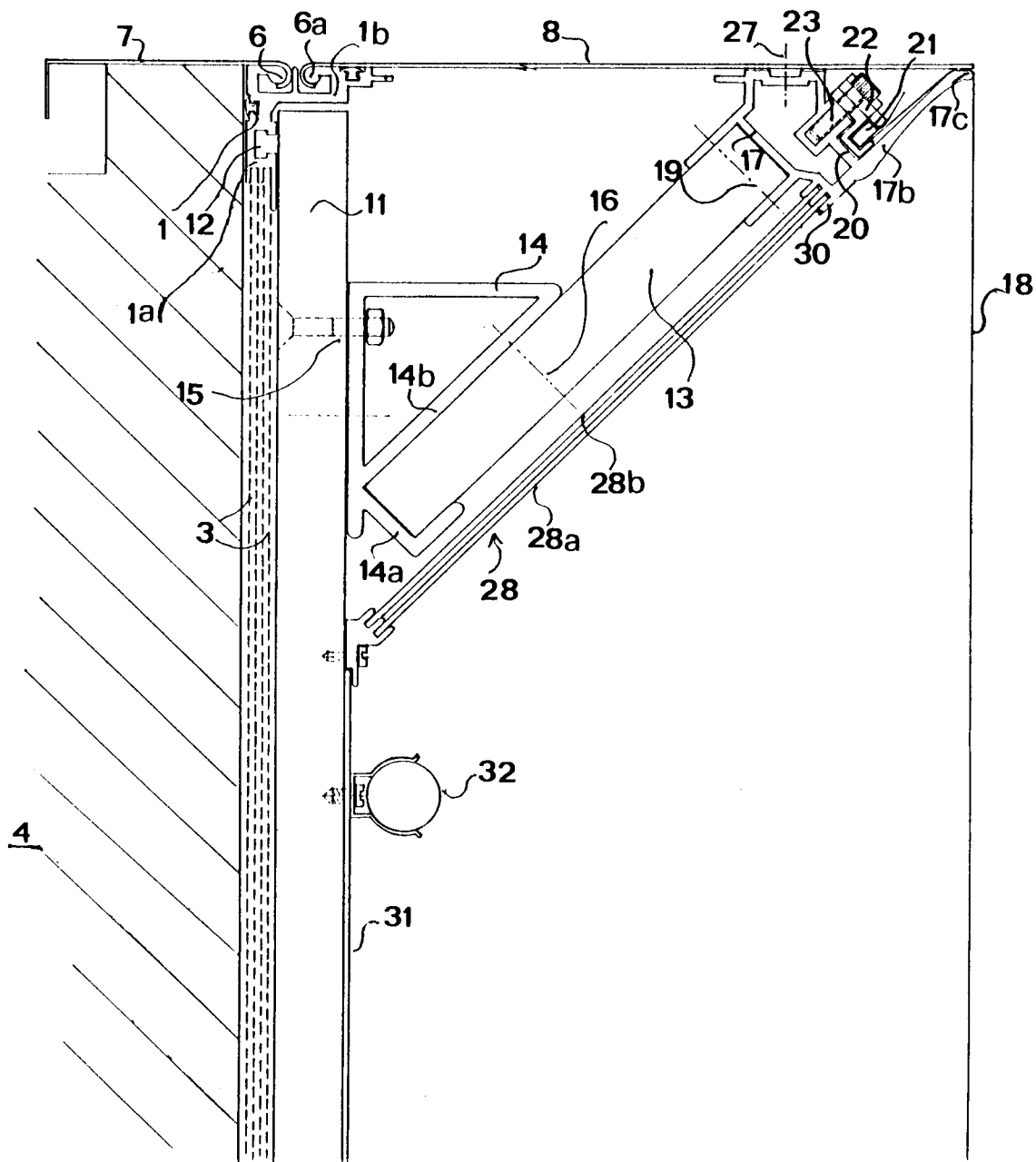


FIG.1

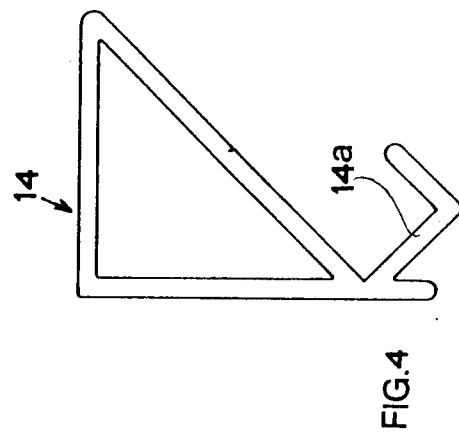
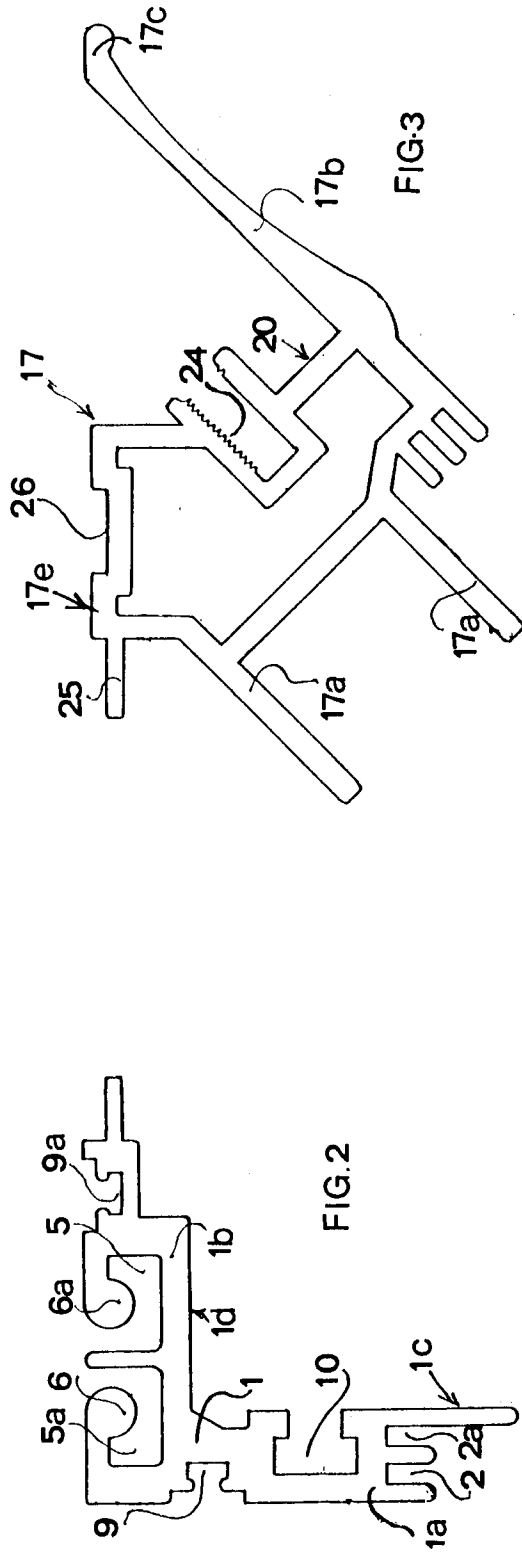


FIG. 5

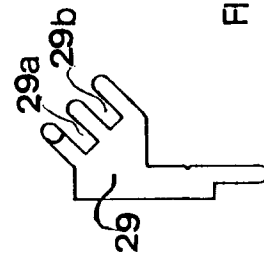


FIG. 6

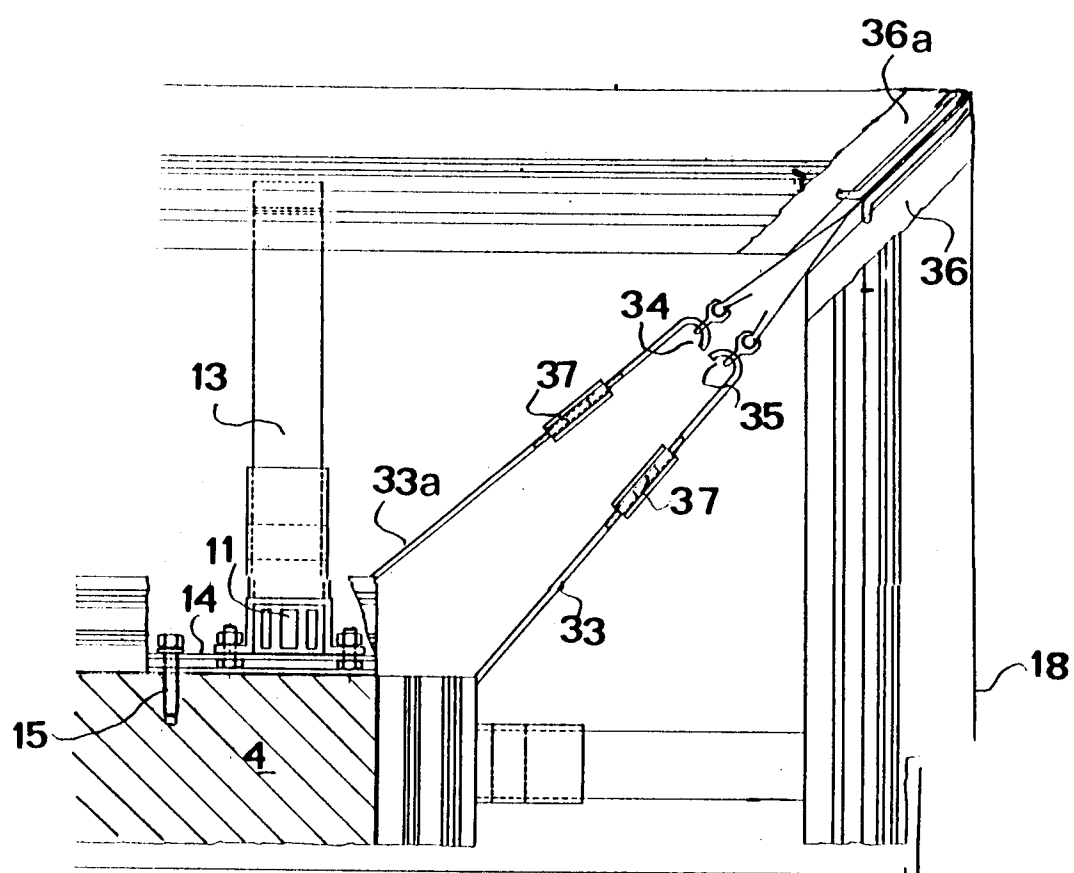


FIG. 7