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(54) **ELONGATED ELEMENT FOR THE FRAME OF A PANEL SYSTEM COMPRISING A FLEXIBLE SHEET MATERIAL**

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(75) **Inventor: Arrigo Bernardi, Torino (IT)**

(57) **ABSTRACT**

Correspondence Address:
SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213 (US)

An elongated element for the frame of a panel system comprising a flexible sheet material includes a main profile to which an auxiliary profile is associated. The auxiliary profile is provided with means for anchoring an edge of the sheet material and it can be moved with respect to the main profile as a result of the driving of position control screws. The main profile is adapted to be fixed on the surface of a wall by connection means engaging a connection portion associated to it. The position control screws have a control formation which can be reached from the outside of the frame, when the main profile of the elongated element is fixed to a wall and the sheet material is anchored to the auxiliary profile.

(73) **Assignee: CREARE.ORG S.R.L.**

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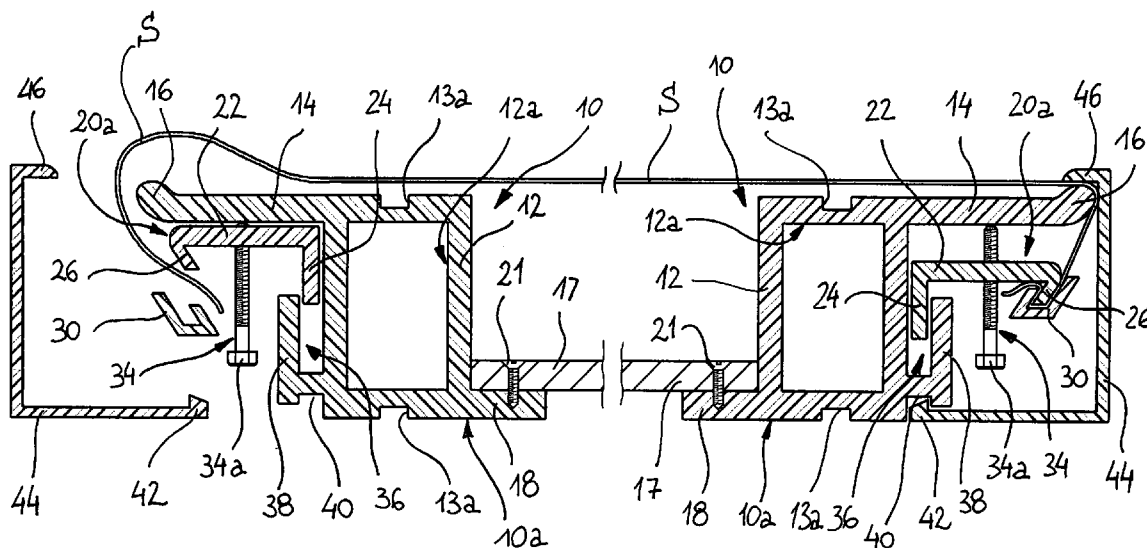


Fig. 1

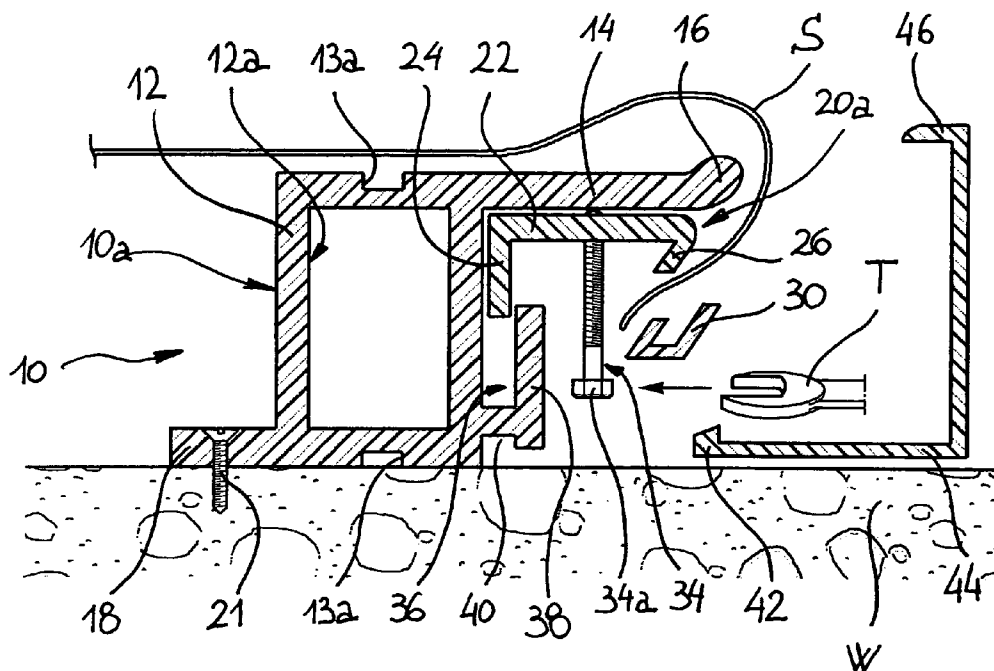


Fig. 2

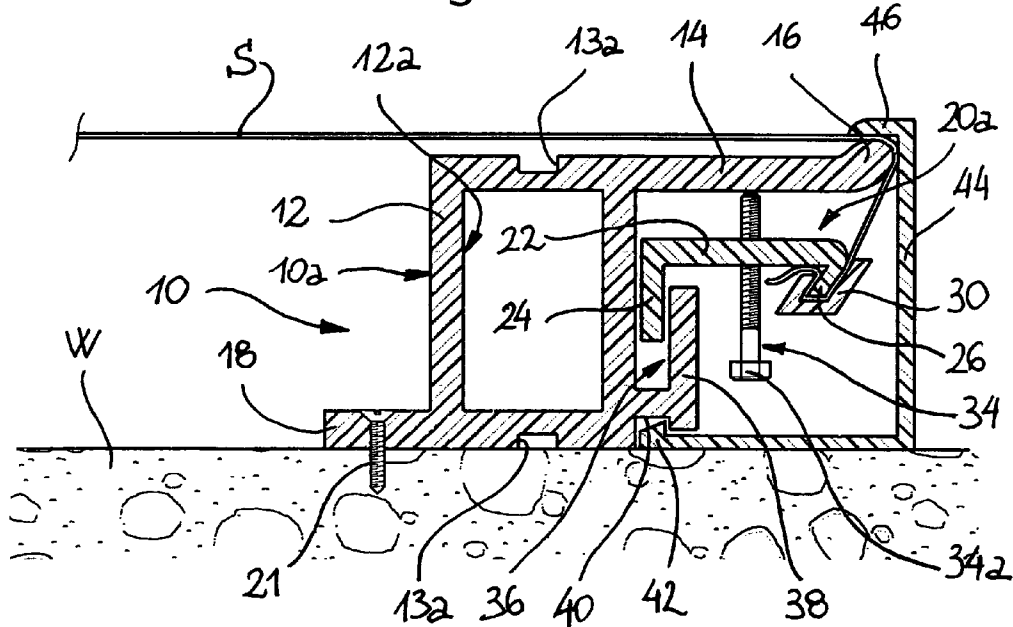
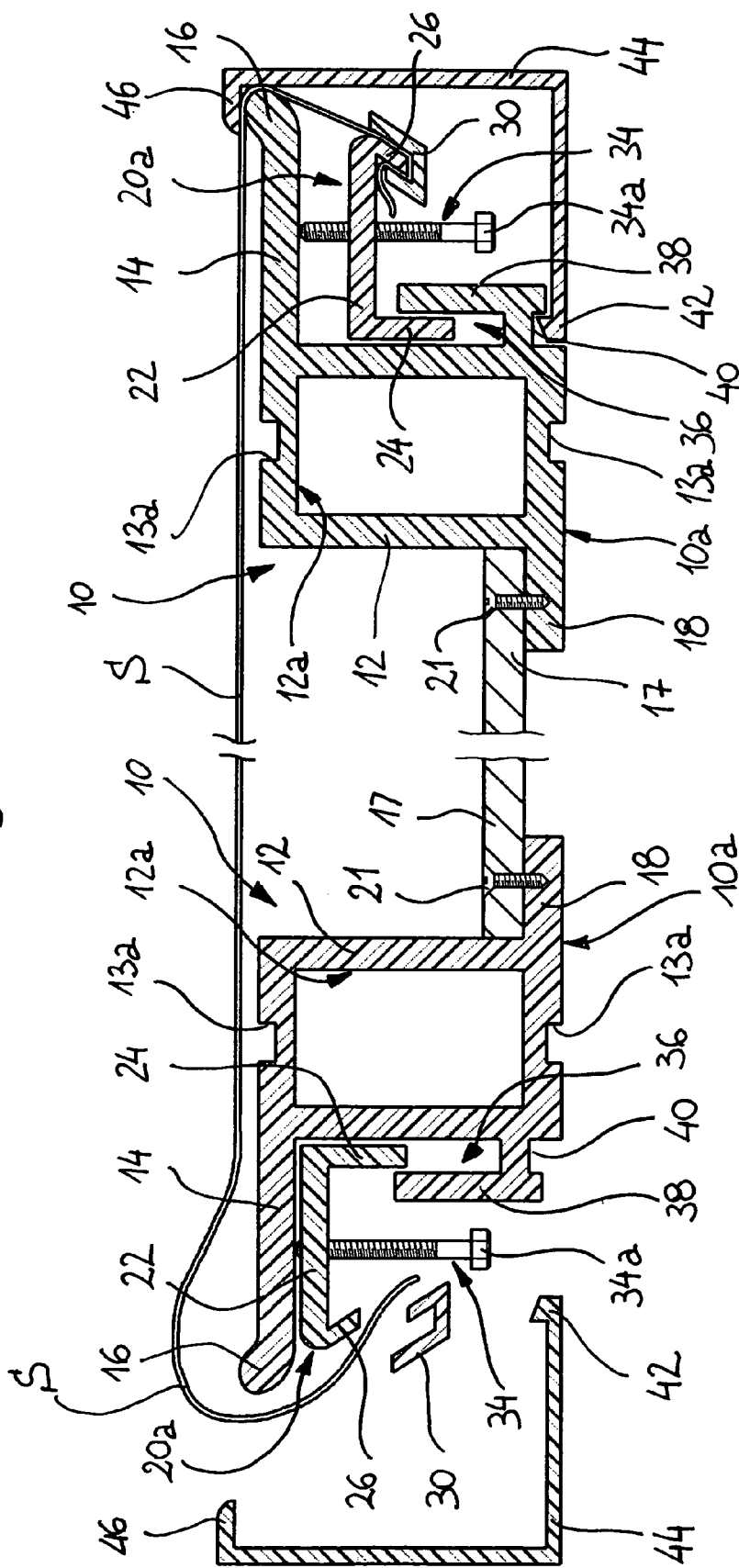


Fig. 3



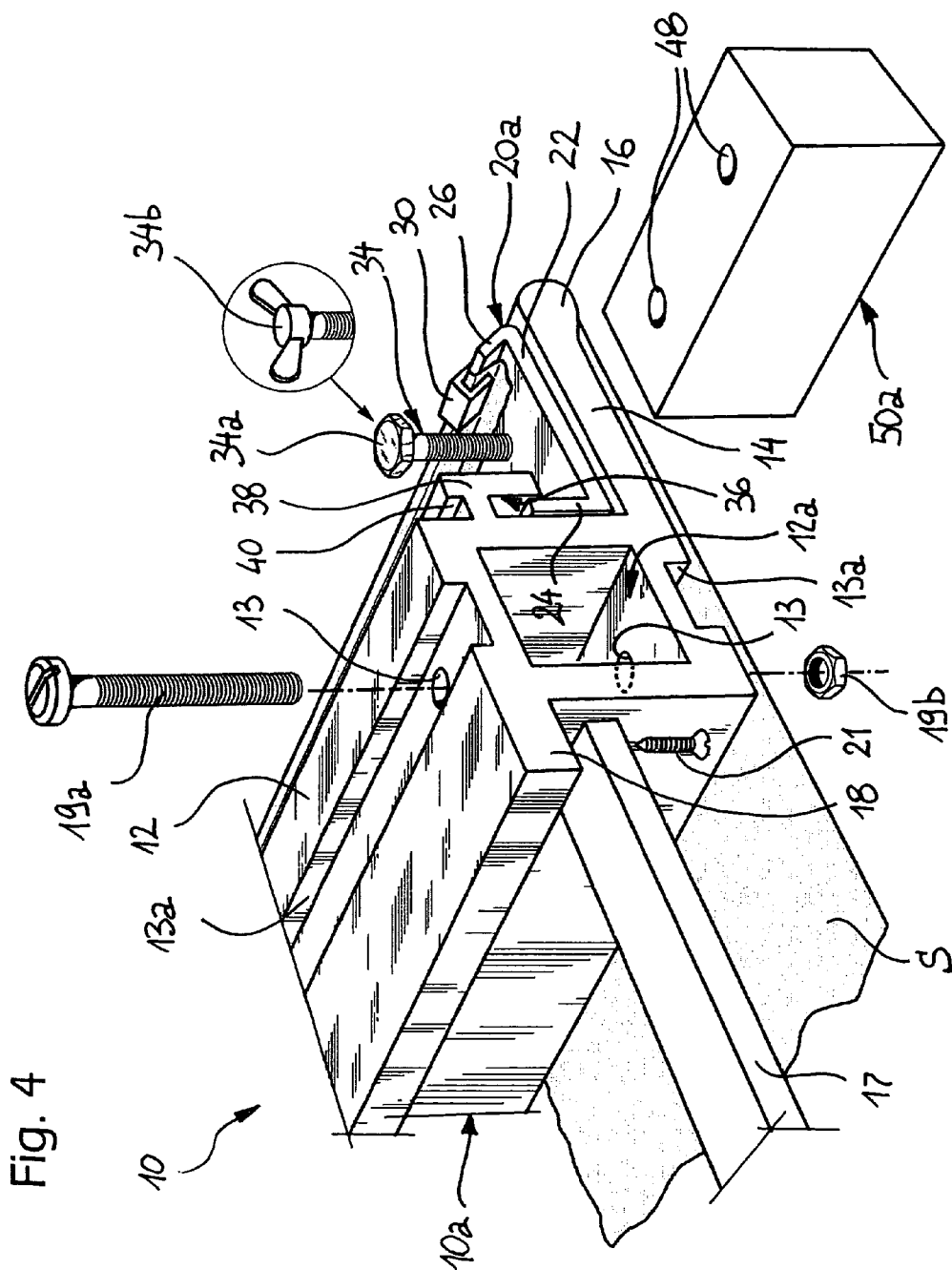


Fig. 4

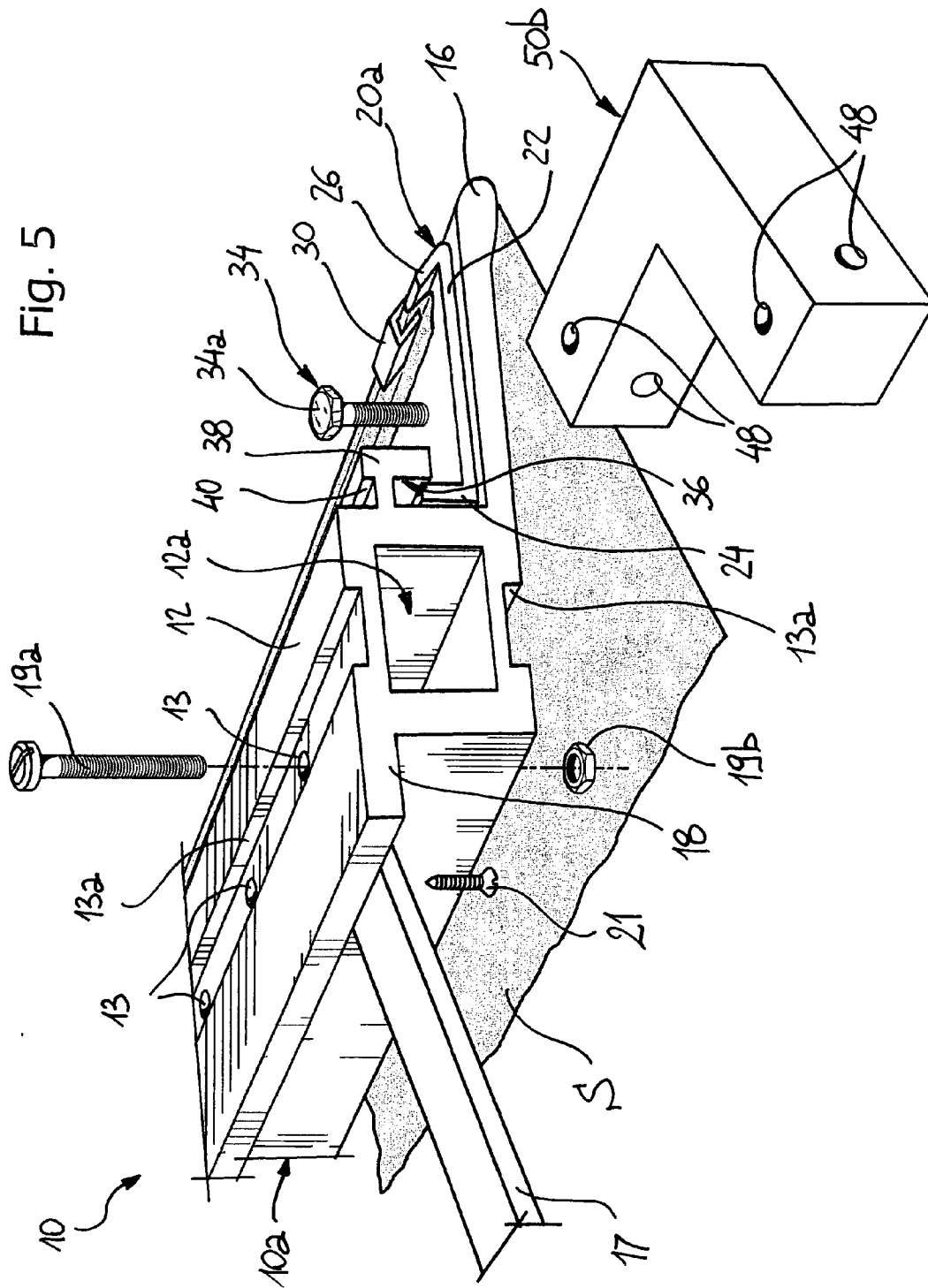


Fig. 6

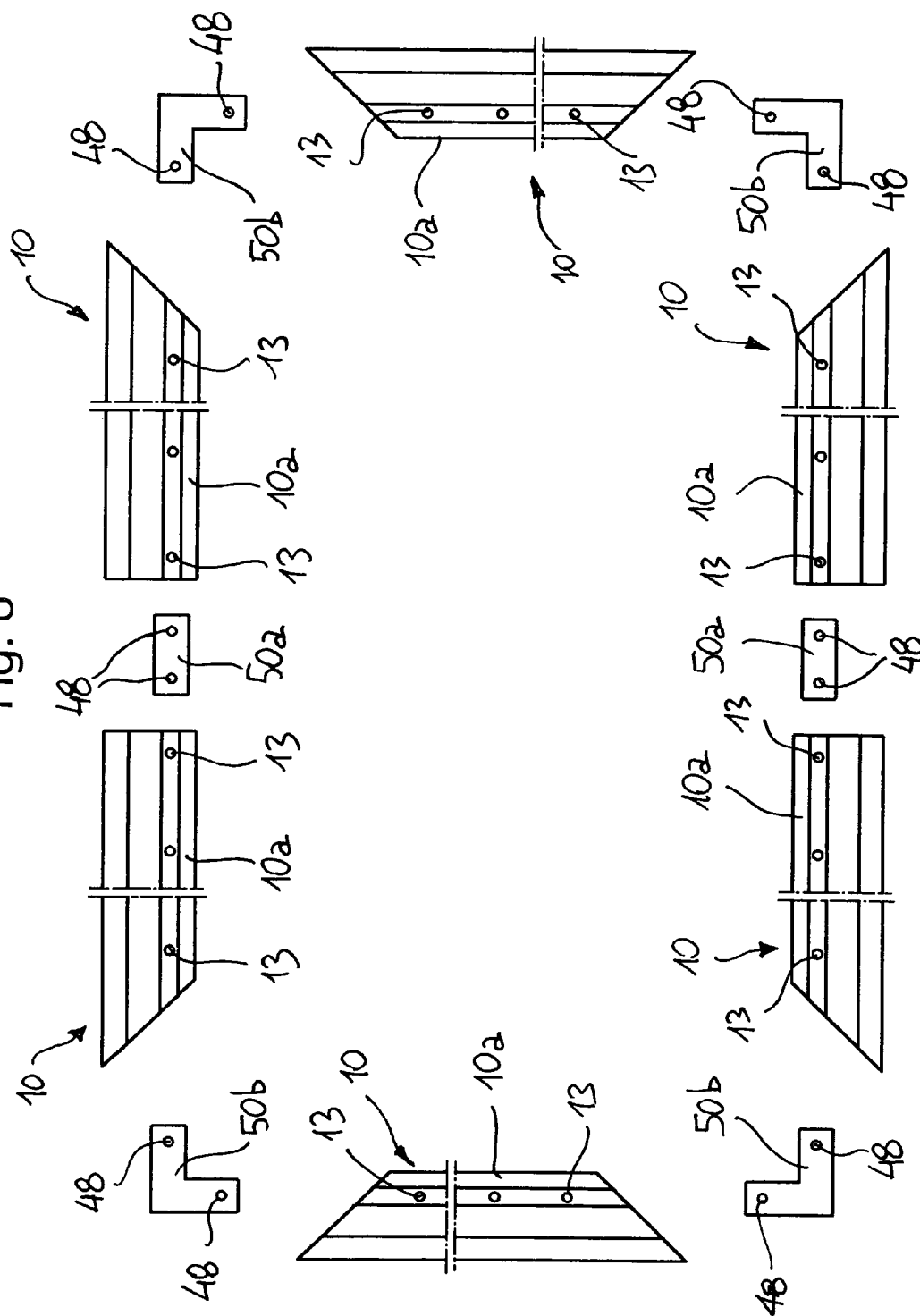


Fig. 7

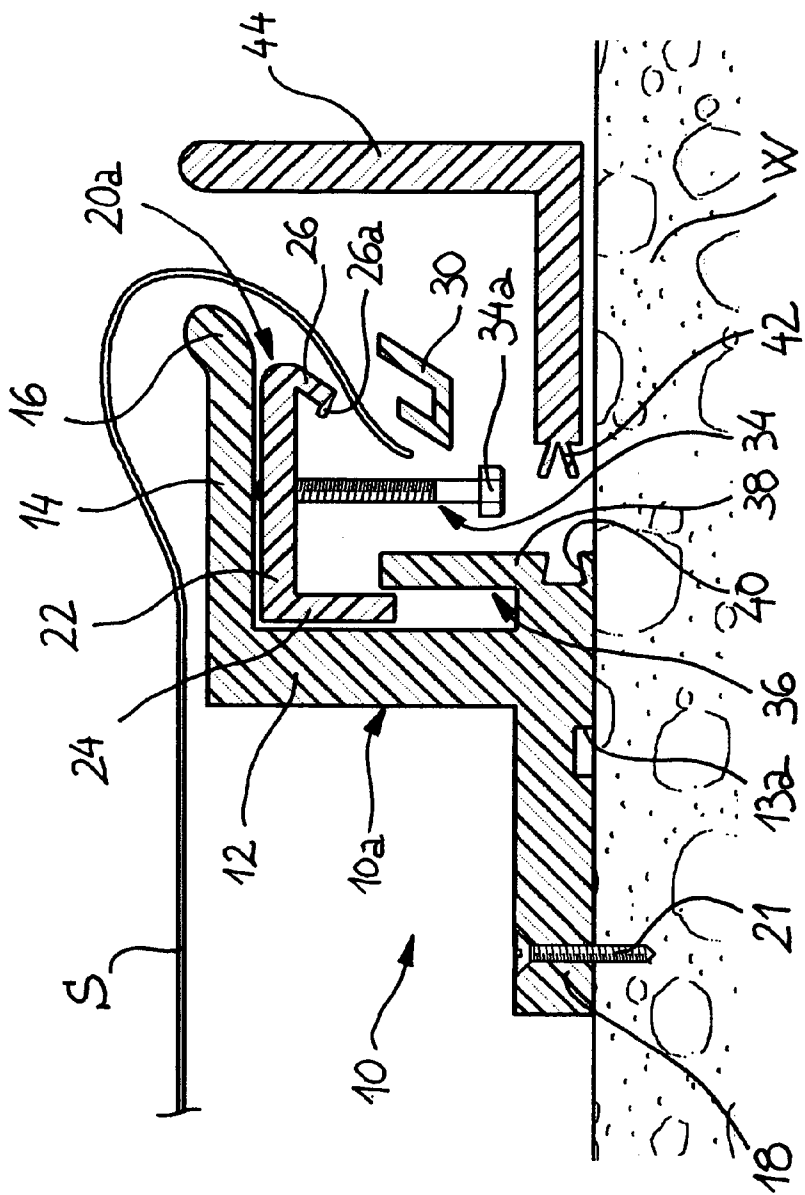


Fig.8

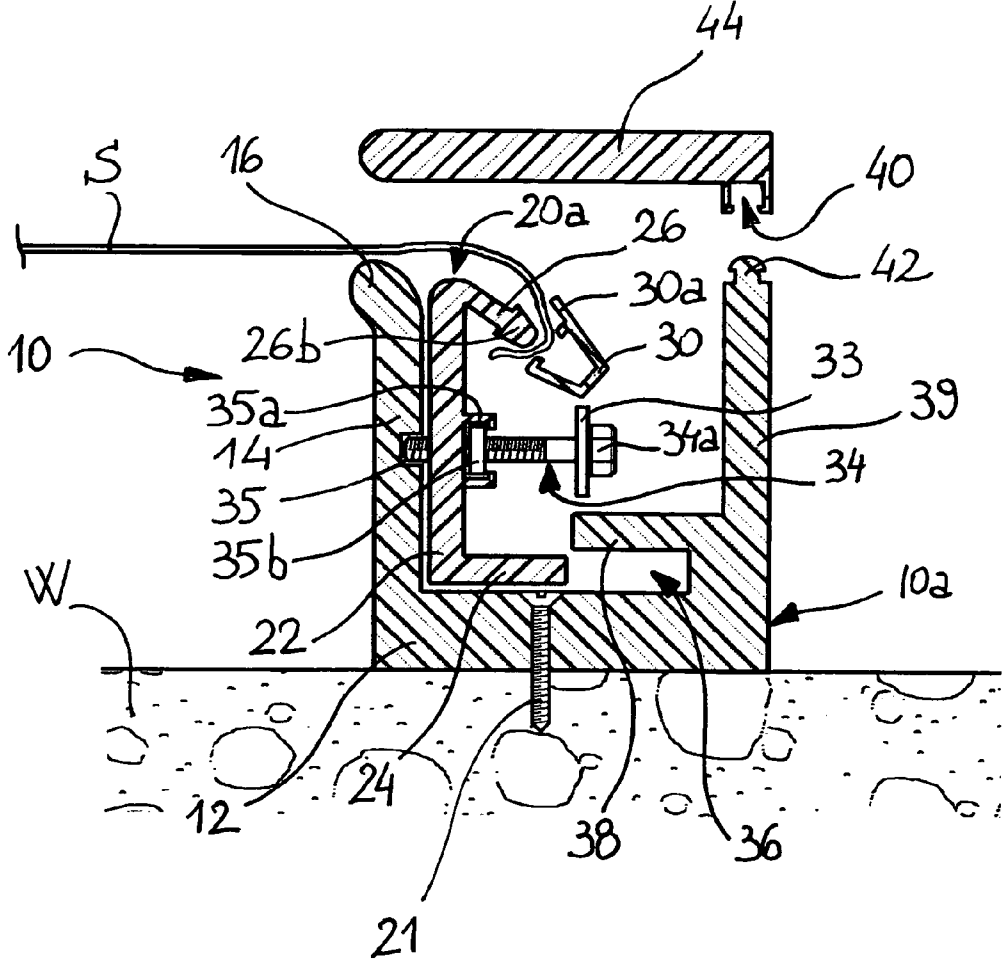


Fig. 9

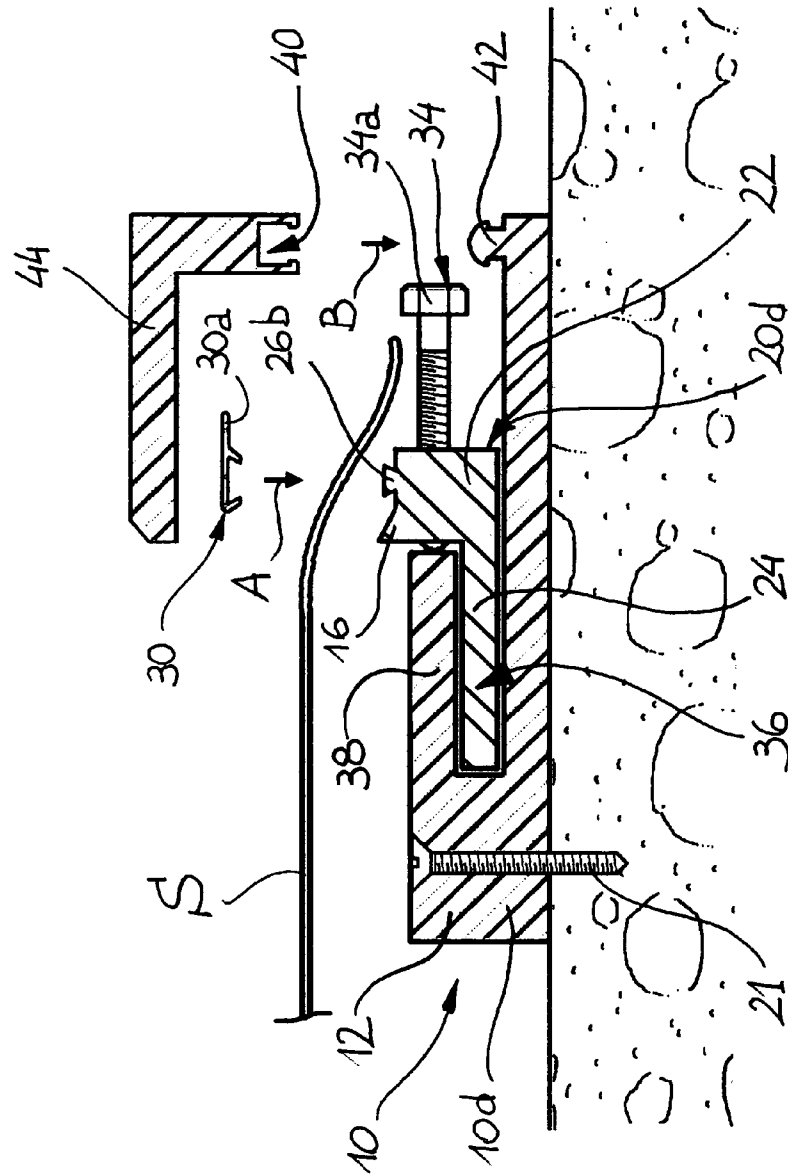
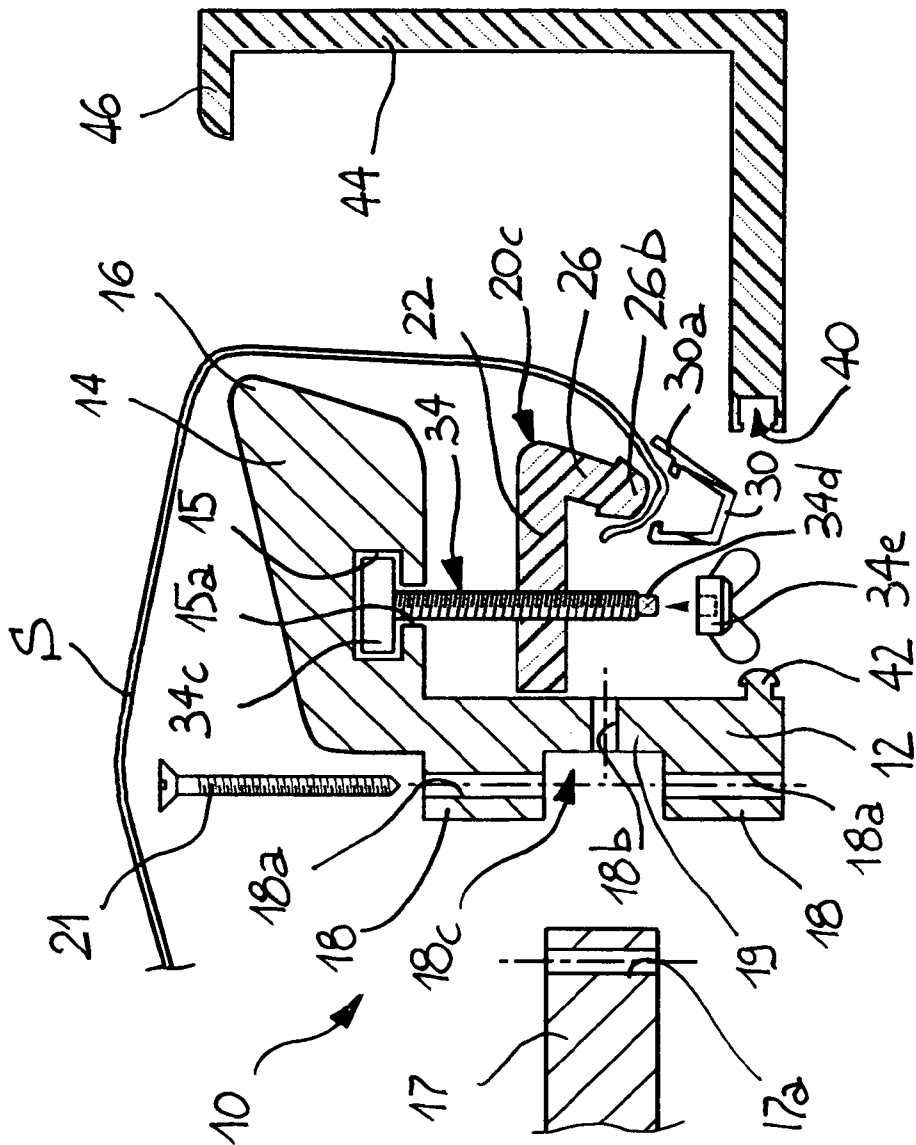


Fig. 10



**ELONGATED ELEMENT FOR THE FRAME OF A
PANEL SYSTEM COMPRISING A FLEXIBLE
SHEET MATERIAL**

BACKGROUND OF THE INVENTION

[0001] The present invention refers in general to frames which can be used for supporting and stretching a flexible sheet material, for the purpose of manufacturing a panel system which can be used to carry out a variety of functions, each of which depends on the type of sheet material used and on the surface to which the sheet material is associated.

[0002] In the following description, the term frame is used both to indicate a closed structure consisting of a plurality of elongated elements connected to each other at their ends with the aim of keeping a sheet material stretched, and an open structure including at least an elongated element intended to be associated with an end of the sheet material to be stretched, the opposite end of the sheet material being connected with another elongated element or with a fastening device of a type known per se.

[0003] A frame adapted to support and stretch an artistic canvas or similar, is described in the Italian utility model application T096U000103. It comprises a prismatic-shaped base frame having a peripheral tab which is intended to be surrounded by a sheet material to be stretched. A counter-frame having a shape corresponding to that of the base frame is mounted telescopically so as to be slidable outside of the base frame, and has a peripheral edge for anchoring the edges of the sheet material by means of removable fastening means. Corresponding through openings are formed both in the base frame and in the counter-frame to allow to insert elastic wedges, acting from the inside of the base frame, for changing the position of the counter-frame with respect to the base frame, in order to adjust the tension of the sheet material.

[0004] The frame of this document is not much fit to be used with sheet materials of large size, in which case also the base frame and the counter-frame should be very large. However, it is very difficult to assure that an effective mutual sliding may take place between a base frame and a counter-frame having very extended sides and relatively small sections. Moreover, this frame cannot be used to stretch a sheet material if the frame is fixed to a support surface, such as a wall surface, since it would require to operate from the inside of the base frame for changing the tension of the sheet material.

[0005] More specifically, the present invention relates to an elongated element according to the preamble of annexed claim 1.

[0006] An elongated element for a frame having the features defined above, is known from the Italian utility model application T02000U000018. This application describes in particular a frame intended to support a stretched sheet material, such as a fabric, an artistic canvas, paper or similar. The frame consists of a plurality of elongated elements each of which includes a main profile and an auxiliary profile. Each main profile of the frame is rigidly connected to a pair of other main profiles which are arranged perpendicular at its ends. An auxiliary profile is hinged at the back of each main element, which is provided with a free longitudinal end having a tab for allowing an edge of the

sheet material to be anchored by removable fastening means. A screw, which can be driven by a tool in order to change its extension between the auxiliary element and the main element, is arranged on each auxiliary element for adjusting the tension of the sheet material, so as to change the angle of the auxiliary profile with respect to the main profile and therefore the distance between the auxiliary profile and the main profile.

[0007] The main elements of the frame of this solution have however a structure which is not much fit to be fixed on a support surface, owing to the presence of the auxiliary profiles which are hinged at the back. At any rate, this structure would not allow to obtain in a simple and practical manner the adjustment of the tension of a sheet material supported by the frame when the latter is already fixed on a support surface.

SUMMARY OF THE INVENTION

[0008] The main object of the present invention is to provide an elongated element which is particularly adapted to be used for manufacturing a frame for supporting a flexible sheet material of large size, whose elements can be easily fixed to a support surface, such as the wall surface of a room or of a building, and on which the sheet material can be arranged afterwards and stretched with the desired tension without necessarily requiring the removal of the frame from the support surface.

[0009] This object is reached by an elongated element having the features mentioned in annexed claim 1.

[0010] By virtue of these features, the elongated element of the invention can easily be fixed to a wall surface and possibly connected with other elongated elements, also fixed to the surface of the same wall or to the surface of another wall, in order to form a frame which is able to support the sheet material and which allows to apply to it an even tension as a result of the adjustment of the position of the auxiliary elements of the elongated elements.

[0011] In particular, such a frame and a flexible sheet material stretched on it make it possible to manufacture a panel system which can be used for carrying out a variety of functions, depending on the sheet material used. The system can allow to protect a wall, for example a sidewall or the ceiling of a room, so as to replace the common wall coatings, if a sheet material is used having resistance properties such as to allow this protecting function to be carried out. The system can also be employed mainly for decorative purposes by using a sheet material already decorated, for example printed, or adapted to be decorated after the installation, such as with the realization of a pictorial work on it. If a material sheet adapted to constitute a screen for projecting lights or images is used, the panel system allows to manufacture a projection screen, for example of the motion picture type. A frame arranged adjacent to a wall, to which is associated a sheet material whose structure has acoustic absorption properties, allows to manufacture a sound absorbent wall. A panel system comprising a single frame or a pair of frames arranged side-by-side, each with the respective sheet material, allows to form a partition wall which can be used to separate to each other two zones of a room. When the sheet material is associated to a surface, it can be, besides the surface of a wall, the surface of a piece of furniture such as the door of a cupboard or a table top. Shelves or similar for

supporting objects may be manufactured by means of one or more elongated elements and the appropriate sheet material. If the sheet material is a covering fabric, it can be used for covering the outside of a piece of furniture such as an armchair and to contain the expansion of the padding interposed between the sheet material and a support portion.

[0012] At any rate, the elongated elements forming the frame can be arranged so as to follow accurately the perimeter of the surface of a wall, allowing to by-pass possible openings in it, such as doors or windows, or allowing to make accessible systems or accessories associated with the wall, such as sockets or switches.

[0013] If the frame has to be fitted to a wall curved or having a variable shape, elongated elements shaped correspondingly to the wall may be used, for example having a curvilinear shape. As an alternative, curvilinear elongated elements may be used in order to shield or differently shape a flat wall.

[0014] When the panel system hides from view a wall, the surface of the wall can be left in the coarse condition. Therefore, possible defects or fittings mounted to the wall, such as protruding pipes, external conduits or air inlets, remain hidden.

[0015] The flexible sheet material can be easily removed from the frame for maintenance reasons, such as to be washed, or when one desires to replace it. The costs and inconveniences involved by its removal are of course well smaller than those required by the removal of traditional wall coatings, for example made by wallpaper, wood or tiles.

[0016] The elongated element of the invention can be used, as an alternative, for manufacturing a frame of a traditional type, that is intended to be hung on a surface after having mounted on it the respective flexible sheet material and after having brought it in the desired stretch condition.

[0017] According to an advantageous feature of the invention, the main profile is provided with guide means for guiding the auxiliary profile according to a movement of translation with respect to the main profile, as a result of the driving of said position control means, the guide means being adapted to prevent the separation of the auxiliary profile from the main profile.

[0018] By virtue of this feature, the operation of stretching the sheet material on the frame is made easier, in particular when it is fixed on a support wall.

[0019] Further characteristics and advantages of the invention will become more clearly evident from the reading of the detailed description which follows, given purely by way of a non limiting example and referred to the attached drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a schematic sectional elevational view of an elongated element according to a first embodiment of the invention, which is fixed on a support surface, in the condition preceding the assembly of a sheet material on it,

[0021] FIG. 2 is a view similar to FIG. 1, showing the same elongated element fully assembled,

[0022] FIG. 3 is a schematic view similar to FIGS. 1 and 2, showing two sectioned elongated elements which are part

of a frame according to the invention, which is adapted to be hung on a support surface after having arranged on it a sheet material and having stretched it to the desired tension, the elongated element on the left portion of the figure being in the condition preceding the assembly of the sheet material, while the elongated element on the right portion of the figure is in the condition corresponding to the complete assembly,

[0023] FIG. 4 is a perspective partially exploded view showing an end of the elongated element of FIG. 3 together with a rectilinear connection element which can be inserted in a cavity of the elongated element in order to allow the coaxial connection of two elongated elements,

[0024] FIG. 5 is a view similar to FIG. 4, showing an elongated element with an end cut at 45° and a connection element with an angle at 90° a branch of which can be inserted in a cavity of the elongated element to allow to connect it perpendicularly with another elongated element,

[0025] FIG. 6 is an overall schematic view showing a plurality of elongated and connection elements in the exploded condition, which are intended to form a frame according to the invention,

[0026] FIG. 7 is a view similar to FIG. 1, of an elongated element according to a second embodiment of the invention,

[0027] FIG. 8 is a view similar to FIG. 1, of an elongated element according to a third embodiment of the invention,

[0028] FIG. 9 is a view similar to FIG. 1, of an elongated element according to a fourth embodiment of the invention, and

[0029] FIG. 10 is a schematic sectioned elevational view of an elongated element according to a fifth embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0030] With initial reference to FIGS. 1 to 6, an elongated element according to a first embodiment of the invention is indicated 10 as a whole.

[0031] Each element 10 comprises a main profile 10a which includes a beam portion 12 having preferably an axial cavity 12a, and from which an elongated laminar appendage 14 extends, which is provided with a free winding end 16 having a rounded shape. The profile 10a is advantageously made in a single piece of plastic or composite material, or of a metal such as aluminium, preferably obtained as a result of an extrusion forming process.

[0032] Conveniently, the beam portion 12 has a polygonal section, for example rectangular, the appendage 14 being the prolongation of one of the sides of the portion 12. A connection portion adapted to allow the profile 10a to be fixed to a support surface, is associated to the beam portion 12. This connection portion may have whatever shape depending on the specific connection requirement, and it may consist of any portion of the profile 10a. Preferably, the connection portion has the shape of a rib 18 extending cantilevered from the portion 12 at the opposite portion of the appendage 14, and it will be dealt in a greater detail in the following.

[0033] A substantially L-shaped auxiliary profile 20a, mounted so as to be able to be subject to a movement of

translation with respect to the main profile **10a**, is associated to each main profile **10a**. The profile **20a** has a primary branch **22** parallel to the elongated appendage **14** of the main profile **10a**, and a secondary branch **24** perpendicular to the primary branch **22**. The secondary branch **24** is slidably received in an elongated cavity **36** defined by a hook formation **38** which extends from the beam portion **12** towards the elongated appendage **14**. In this manner, the movement of translation of the profile **20a** is guided as a result of the engagement of its secondary branch **24** in the cavity **36**, so that such a movement may take place without any accidental separation of the profile **20a** from the profile **10a**, the profile **20a** being kept in a position close to the profile **10a**.

[0034] Moreover, the beam portion **12** is provided with a recess **40** facing the side opposite to the elongated appendage **14**, which is preferably constituted by a cavity defined by the same hook formation **38**. The recess **40** can be snap engaged by a coupling edge **42** having a slanted insertion end, which is part of a framing profile **44** and which can be coupled removably with the main profile **10a**. The framing profile **44** has an edge **46** bent at its portion opposite to the coupling edge **42**, intended to be arranged in a position close to the winding end **16** of the elongated appendage **14**, when the framing profile **44** is coupled with the main profile **10a**.

[0035] The movement of the profile **20a** with respect to the profile **10a** can be controlled by position control means including a plurality of screw members **34** each of which comprises a threaded stem engaged in a corresponding threaded hole formed in the primary branch **22**. The threaded stem of the screws **34** has a free end abutting against the appendage **14**, and the other end provided with a control formation **34a**, such as an hexagonal head, which can be engaged by a corresponding driving tool T (see FIG. 1) to cause rotation of the respective screw **34** about its axis, so that the distance between the appendage **14** and the branch **22** of the profile **20a** may be changed.

[0036] The primary branch **22** of the auxiliary profile **20a** is provided with a bent rim **26** for anchoring an edge of a flexible sheet material S by means of one or more removable clip elements **30**. The elements **30** are preferably sections of a channel-shaped profile, which are adapted to be snap coupled on the rim **26** with the interposition of an edge portion of the material S.

[0037] An elongated element **10** of the type described above can be associated with other elongated elements **10** in order to form a frame with a closed structure, usually of a polygonal shape, with the purpose to support the sheet material S which can be an artistic canvas, a sheet of paper or plastic material or similar, and to allow to apply the desired tension to the material S. When several elongated elements **10** have been connected, their auxiliary profiles **20a** remain independent to each other, and their ends remain free with respect to the ends of the profiles **20a** of the adjacent elongated elements **10**.

[0038] The elongated elements **10** which form the frame can be connected to each other using connection elements **50a**, **50b** (see FIGS. 4 to 6) having a cross sectional shape corresponding to that of the cavity **12a**, inserted at the opposite ends of each main profile **10a**. The connection elements **50a** are rectilinear and allow to join coaxially two elongated elements **10**, while the connection elements **50b**

are angled, for example at 90°, so that they can be used for connecting at an angle two elongated elements **10**, preferably after having cut in a corresponding manner, such as according to an angle of 45° in the case of connection of the elongated elements **10** at 90°, the ends of two main profiles **10a** to be joined. As an alternative, the connection elements can have a curvilinear shape in order to allow the mutual connection of curvilinear elements or the connection of curvilinear elements with rectilinear elements.

[0039] In order to assure a particularly effective connection between a connection element **50a** or **50b** and the respective main profiles **10a**, each connection element **50a**, **50b** can be provided with transversal through holes **48** for inserting fixing screws **19a**, the holes **48** of the angled connection elements **50b** being formed according to pairs of holes transversal to each other at each end of the elements **50b**, in such a manner that they can be used for connecting the profiles **10a** according two different conditions, one of which is illustrated in FIGS. 1 to 6, while the other involves an arrangement of the appendage **14** of the profiles **10a** perpendicular to the material S. As an alternative, the holes **48** may be made by a user, for example using a drill, on connection of the profiles **10a**. The screws **19a** cross also holes **13** formed in opposite sides of the beam portion **12** of the main profile **10a**, at a pair of grooves **13a** formed on opposite sides of the beam portion **12**. Each screw **19a** is then tightened using a nut **19b**, and both the head of the screw **19a** and the nut **19b** are received in the grooves **13a** of the portion **12**, so that they do not protrude outside of the beam portion **12**.

[0040] The frame made by means of a plurality of elongated elements **10** of the type described above, is particularly adapted to support a sheet material of large size and is intended to be fixed to a support surface, such as the surface of a wall W, for example of a building, or a room. In this case, with particular reference to FIGS. 1 and 2, the profile **10a** is arranged on the surface of the wall W so that the rib **18** rests on it, and therefore the rib may be used to fix the profile **10a** to the wall W by means of a series of screws **21** (possibly provided with respective screw anchors, not shown). If the wall W is a metallic sheet, magnetic fixing members, which consist for example of small bar-shaped permanent magnets (not illustrated in the figures), can be used as an alternative to the screws **21**, which members can be fixed to the side of the profile **10a** intended to face the wall W. In the latter case, the magnetic fixing members can be received in respective hollow seats of the profile **10a** which are less deep than such members, in order that they can slightly project from the surface of the profile **10a** facing the wall W so as to obtain the separation from the wall W of the magnetic fixing members associated to the opposite element **10**, as a result of a pressure applied by a user on the outside edge of one of the elongated elements **10** of the frame, as a consequence of a lever effect, which makes easier the operation of separation of the frame from the wall W.

[0041] After having fixed the several elongated elements **10** which constitute the whole frame, the sheet material S to be supported is superimposed to the frame by resting it on the winding ends **16** of the profiles **10a**, so that it assumes a configuration almost parallel to the surface of the wall W. A portion of the material S close to its edges is bent so that it surrounds the winding ends **16** of the respective profiles

10a, and it can be anchored on the bent rim 26 of the auxiliary profiles 20a by means of the clip elements 30.

[0042] Using the tool T it is possible to act on the control formations 34a of the screws 34 in order to apply the desired tension to the material S, in particular the appropriate tension to bring the material S in the flat configuration with respect to the frame. It can be noticed that the control formations 34a are arranged in a position which can be easily reached from the outside of the frame when the main profiles 10a thereof are fixed on the rest surface of the wall W and the material S is anchored to the auxiliary profiles 20a.

[0043] When the operation of adjusting the tension of the material S has been completed, a respective framing profile 44 can be applied to each of the main profiles 10a, by applying a pressure to the profile 44 so as to push it until the snap engagement of its end 42 in the recess 40 of the main profile 10a is achieved. In this condition, the edge 46 of the profile 44 assumes a position close or resting on the material S which surrounds the winding end 16 of the respective main profile 10a.

[0044] As an alternative, a plurality of profiles 10a can be used in order to realize a frame adapted to support a sheet material S extending in a plane perpendicular to the surface of the walls W to which the profiles 10a are fixed. In practice, the profiles 10a of this frame are connected to the wall W in the same manner represented in FIGS. 1 and 2, while the material S is directed perpendicular with respect to the direction illustrated in these figures, that is perpendicular to the appendage 14 of the profiles 10a. In this case, the rib 18 may extend from the beam 12 perpendicularly to the appendage 14, for example like a prolongation of the side of the beam 12 opposite to that having the hook formation 38, so that the connection of the main profile 10a to a wall parallel to the material S, and therefore perpendicular to the wall W of FIGS. 1 and 2, is allowed. If, in this context, a framing profile coupled to the profiles 10a is used, it will be only similar to the framing profile 44, being not provided with the bent edge 46.

[0045] If a plurality of main profiles 10a are connected to each other, it is also possible to obtain a frame which can be removed from a wall W, that is intended to be hung on the wall W only after that the material S has been positioned on it and has been brought to the desired tension. If the size of the frame requires it, the frame can be stiffened by using reinforcing crosspieces 17 (see FIGS. 3 to 5) which are fixed to the rib 18 of the main profiles 10a by means of screws 21, for example of the self-tapping type, or the magnetic fixing members mentioned above, in the case in which the wall W is a metallic one. If the crosspieces 17 are intended to cross to each other, they could be made by a series of joint elements including cross connections for the intersection zones, or by means of rectilinear elements overlapping at the intersection zones (not shown in the figures, being of a type known per se). Bolts can be used to fix the ends of the crosspieces 17 to the rib 18 of the respective profiles 10a, as an alternative to the common screws 21. In this case, the rib 18 preferably has a longitudinal groove (not shown) constituting a receiving seat for the head of the screw or for the nut of such bolts. Similar bolts can be used to fix the crosspieces 17 at the overlapping intersection or prolongation zones.

[0046] Since with the removable frame it is possible to reach the control formations of the screws 34 from the back

of the frame when the latter is separated from the wall W, the formations 34 can be provided with radial fins, indicated 34b in FIG. 4, in order to facilitate their manual driving.

[0047] FIG. 7 shows another embodiment of the invention. In this embodiment, the same numeral references of FIGS. 1 to 6 have been used to indicate elements equal or similar to those of such figures, and mainly the differences with respect to the previously described embodiment will be mentioned in the relevant description. The main profile 10a of this embodiment has a simplified structure in which the beam portion 12 is solid and has a laminar or substantially I-shaped cross-section. Holes intended to be engaged by the screws 21 are formed on the rib 18, and a longitudinal groove 13a is formed on the face opposite to the portion 12. The groove 13a allows to receive the heads of the screws of bolts which can be used for connecting adjacent sections of the profiles 10a to the respective ends by means of rectilinear or angled connection elements (not shown in FIG. 7), in a manner similar to that described with reference to the previous embodiment.

[0048] The bent rim 26 of the auxiliary profile 20a may have a check lip 26a, in order to facilitate the coupling of the material S by means of the clip elements 30.

[0049] The rib 18 extends from the side opposite to the beam portion 12 in order to form a projection from which extends, parallel to the portion 12, the hook formation 38 which defines the cavity 36. In this projection a mortise 40 having a trapezoid cross-section is formed, in order to allow the front engagement of a tenon 42 extending from an end of a framing profile 44 which has a L-shaped cross-section. The tenon 42 has two elastic tabs arranged according to a V, which are intended to snap engage the mortise 40 as a result of a force applied from the outside on the framing profile 44.

[0050] FIG. 8 shows another embodiment of an elongated element according to the invention. In this figure, the same numeral references of FIGS. 1 to 7 have been used in order to indicate elements equal or similar to those of such figures. In the following description mainly the aspects of this embodiment will be considered which are different to those already described with reference to the previous embodiments.

[0051] Also the main profile 10a of this embodiment has a simplified structure in which the beam portion 12 is solid and has a laminar cross-section. In this case, one part of the portion 12 constitutes the connection portion of the profile 10a to a wall W, a plurality of holes being formed in it for inserting the respective screws 21 in order to fix the profile 10a to the wall W, or being formed in it seats for receiving the magnetic fixing members mentioned in the previous embodiment, in the case in which the wall W is metallic.

[0052] The means for controlling the position of the auxiliary profile 20a with respect to the main profile 10a, comprise a plurality of screws 34 whose threaded stem crosses the branch 22 of the auxiliary profile 20a and whose free end is received in a groove 35 formed on the face of the appendage 14 facing the profile 20a. The thread of each screw 35 engages the thread of a respective nut 35b, for example a square nut, connected to the branch 22 of the profile 20a by a pair of opposite clip appendages 35a, which are formed integrally with the profile 20a.

[0053] The head **34a** of each screw **34** preferably has a disc-shaped base portion **33** which makes easier to keep in position a control wrench (not shown in FIG. 8), during the driving of the screws **34**.

[0054] Conveniently, the bent rim **26** of the auxiliary profile **20a** is provided with an enlarged head **26b** having a pair of opposite sharp-edge formations intended to snap engage corresponding engagement formations of the respective clip element **30**. In order to make easier the removal of the element **30** from the enlarged head **26b**, the element **30** is provided with a seizing tongue **30a** which can be seized to apply an elastic deformation to the element **30**, so as to allow to free from it the sharp-edge formations of the head **26b**.

[0055] Advantageously, the length of the secondary branch **24** of the auxiliary profile **20a** is substantially the same of the distance of the free end of the hook formation **38** from the appendage **14**. In this manner, the auxiliary profile **20a** can be inserted inside the main profile **10a** when the latter has already been fixed to the wall **W**, by a movement thereof in a direction perpendicular to the wall **W**. When the branch **24** of the profile **20a** rests on the beam portion **12**, it is sufficient a small moving away of the profile **20a** with respect to the appendage **14**, which is obtained by driving the screws **34**, to bring the secondary branch **24** into engagement with the elongate cavity **36** of the profile **10a**. In such a condition, also by virtue of the simultaneous engagement of the ends of the screws **34** in the groove **35**, the auxiliary profile **20a** is effectively connected to the main profile **10a** and it does not tend to be separated from the beam portion **12** of the main profile **10a** not even when it undergoes a high force of traction following to the application of the tension on the sheet material **S**.

[0056] The main profile **10a** of this embodiment comprises also a plate portion **39** extending transverse to the hook formation **38** and parallel to the appendage **14**. A protrusion **42** having an enlarged head which can be snap engaged in a recess **40** defined by a pair of elastically legs **41** that can be opened, which are formed integrally at an end of a laminar framing profile **44**, is provided at the end of the plate portion **39** opposite to the beam portion **12**.

[0057] FIG. 9 shows another embodiment of an elongated element according to the invention, which has a further simplified structure. In this figure, the references already used in FIGS. 1 to 8 have been used to indicate elements equal or similar to such figures, and mainly the aspects different from what has been already described with reference to the previous embodiments will be taken in consideration in the relevant description.

[0058] The main profile of this embodiment, indicated **10b**, has a fork shape with two branches of different length, which extend from a solid beam portion **12**. The branch having the greater extension of the two, is intended to be arranged so as to rest on the surface of a support wall **W**, while the other one, indicated by the reference numeral **38**, consists of the hook formation which defines the elongated cavity **36**. The beam portion **12** carries out also the function of a portion for connecting the profile **10b** and, for this purpose, through holes are formed in it to allow the engagement of a plurality of screws **21** (only one of which can be seen in the figure) to connect the profile **10b** to the wall **W**.

As an alternative, seats for receiving the magnetic fixing members mentioned in the previous embodiments, may be formed in the portion **12**.

[0059] The auxiliary profile **20b** associated to the profile **10b** has a L-shaped cross-section comprising a primary branch **22** and a secondary branch **24**, perpendicular to each other. The branch **24** has a length substantially equal to that of the formation **38** and its cross-section corresponds to that of the cavity **36** so that it can be inserted into the cavity **36**. A small play between the cavity **36** and the branch **24** allows the latter to slide along the cavity **36**. A winding appendage **16** for the material **S** and an enlarged head **26b** are formed at the end of the primary branch **22** opposite to the branch **24**. The enlarged head **26b** has a pair of sharp-edges intended to be snap engaged at opposite sides of a corresponding seat of a clip element **30** as a result of a pressure action applied on the element **30**, in the direction of the arrow **A** of such a figure. Conveniently, the clip element **30** is provided with a seizing tongue **30a**.

[0060] The position of the auxiliary profile **20b** with respect to the main profile **10b** can be controlled by means of a plurality of screws **34** each of which has a head **34a** to be controlled by a tool of corresponding shape. The threaded stem of each screw **34** crosses the branch **22** in such a manner that its free end, opposite to the head **34a**, can abut on the respective end face of the hook formation **38**.

[0061] Moreover, the profile **10b** preferably has an enlarged head protrusion **42**, at the end of its branch of greater extension, intended to be snap engaged, as a result of the application of a force directed according to arrow **B** of the figure, in a recess **40** of a framing profile **44** having a L-shaped cross-section, by virtue of the elastic deformation of a pair of parallel legs **41** which define the recess **40**.

[0062] The portion **12** can be provided with a pair of small parallel appendages of equal extension and hook-shaped (not shown), for example on the face opposite to the cavity **36**, which define a seat for receiving connection elements of the main profile **10b**, which have a cross-section corresponding to that of such a seat. In particular, rectilinear or curvilinear connection elements can be used to allow a front connection of rectilinear or curvilinear sections of the profile **10b**, or angled connection elements in order to connect sections of the profile **10b** at an angle, according to a line tilted with respect to the general axis of the profile.

[0063] FIG. 10, in which the same references have been used in order to indicate elements equal or similar to those of the previous embodiments, shows an elongated element **10** according to a further embodiment of the invention.

[0064] Each elongated element **10** of this embodiment comprises a main profile **10c** and an auxiliary profile **20c** associated to each other.

[0065] The main profile **10c** has a beam portion **12** whose cross-section has a substantially opposite C-shape (with reference to the figure) and comprises a pair of parallel ribs **18** both crossed by coaxial holes **18a**. An intermediate portion **19** of the portion **12** extends between the two ribs **18**. The portion **19** is crossed by holes **18b** (only one of which can be seen in FIG. 10), which are perpendicular to the holes **18a** and open in a recess **18c**.

[0066] A screw **21** can be inserted in each pair of coaxial holes **18a** of the ribs **18** in order to connect a reinforcing

crosspiece 17 to the profile 10c, with the purpose of stiffening the frame if it has to be arranged on a wall subsequently to the stretching of the material S. In this case, the screw 21 engages also a transverse end hole 17a of the reinforcing crosspiece 17, when the corresponding end of the crosspiece 17 is inserted in the recess 18c.

[0067] As an alternative, a screw 21 long enough to project outside from the portion 12 (possibly provided with a respective screw anchor, not shown) can be used for each pair of coaxial holes 18a, so as to allow to fix the profile 10c to the surface of a support wall transverse to the screw 21 (not shown). In the latter case, the two ribs 18 carry out the function of a shelf connection portion. As an alternative, the magnetic fixing members mentioned in the previous embodiments can be inserted in the holes 18a, or in an enlarged end portions thereof (not shown).

[0068] If, instead, the profile 10c has to be positioned on a wall so that the surface of the wall is parallel to the holes 18a, the ribs 18 are used like support legs of the beam portion 12, and such a portion is fixed to the wall by screws 12 which are inserted in the holes 18b, or by means of magnetic fixing members received in seats formed at the holes 18b or the ribs 18.

[0069] The elongated appendage 14 provided with the rounded winding end 16, extends cantilevered sideways from the beam portion 12.

[0070] An undercut groove 15 is formed in the appendage 14, which opens on the side of the portion 12 with a narrow groove 15a. The groove 15 is adapted to rotatably receive the enlarged head 34c of the screws 34, so that the threaded stem of the screws 34 projects from the appendage 14 through the groove 15a.

[0071] The auxiliary profile 20c associated to the profile 10c has a main laminar branch 22 provided with a bent rim 26 at an end thereof, which is in its turn provided with an enlarged head 26b with opposite sharp-edge formations, in order to allow to fasten to it an edge of the flexible sheet material S by means of clip elements 30.

[0072] The stem of each screws 34 engages a corresponding threaded hole formed in the main branch 22 of the auxiliary profile 20c and has, at the opposite end of the respective head 34c, a prismatic formation 34d, for example having a square section, which is intended to engage a corresponding prismatic cavity of a body 34e, preferably provided with radial fins. When the body 34e is fixed to the stem of the respective screw 34, it can be manually driven by a user in order to drive into rotation the respective screw 34, causing therefore a translation of the auxiliary profile 20c so as to move it away or to approach it parallel to the appendage 14, depending on the direction of rotation of the screw 34. When the sheet material S is anchored to the rim 26, the tension applied to the material S is therefore changed as a result of the manual drive of the control formation 34e. By virtue of the fact that the control formations 34e can be easily reached from the outside of the main profiles 10c, the desired tension can be applied to the material S in a simple and practical manner also when the profiles are fixed to the surface of respective support walls and the material S is anchored to the auxiliary profiles 20c.

[0073] The beam portion 12, on the side opposite to the appendage 14, is provided with a projection 42 having an

enlarged head which can be snap engaged in a recess 40 defined by a pair of elastically flexible legs 41, which are formed integrally at an end of a substantially L-shaped framing profile 44 having an edge bent on the side opposite to the recess 40. The profile 44 may be coupled to the main profile 10c as a result of the application of a force, once the adjusting operation of the tension of the material S has been accomplished. It can be disassembled from the profile 10c if it is desired to remove the material S or in the case in which its tension has to be adjusted again.

What is claimed is:

1. An elongated element for the frame of a panel system comprising a flexible sheet material, including a main profile to which an auxiliary profile provided with means for anchoring an edge of the sheet material is associated, the auxiliary profile being mounted so as to be movable with respect to the respective main profile as a result of the driving of means for controlling its position, wherein the main profile is adapted to be fixed to a support surface, such as the surface of a wall, through connection means which engage a connection portion associated to the main profile, said position control means comprising a plurality of screw members having a control formation arranged in a position which can be reached from the outside of the frame when the main profile of the elongated element is fixed on said support surface and the sheet material is anchored to the auxiliary profile.

2. An element according to claim 1, wherein said element is provided with guide means for guiding the auxiliary profile according to a movement of translation with respect to the main profile as a result of the driving of said screw members, the guide means being adapted to prevent the separation of the auxiliary profile from the main profile when a tension is applied to the sheet material.

3. An element according to claim 1, wherein the main profile has a beam portion in which at least a hole intended to be engaged by a respective screw is formed, in order to allow to fix the beam portion to a support surface, such as the surface of a wall.

4. An element according to claim 1, wherein the main profile has a beam portion in which seats for receiving magnetic fixing members are formed, in order to allow to fix said beam portion to the surface of a metallic wall.

5. An element according to claim 3, wherein the main profile has an elongated appendage which extends from the beam portion and is provided with a winding end adapted to be slidably surrounded by a portion of the sheet material which is close to an edge thereof.

6. An element according to claim 3, wherein the auxiliary profile has a winding end adapted to be surrounded by a portion of the sheet material close to an edge thereof.

7. An element according to claim 6, wherein a rib which can be used to fix the main profile to a support surface by said connection means, or which can be used to fix reinforcing crosspieces of the frame, extends from said beam portion of the main profile.

8. An element according to claims 2, wherein the auxiliary profile has means for anchoring an edge of the sheet material through at least a removable clip element.

9. An element according to claim 8, wherein said anchorage means include a bent rim extending from the auxiliary profile.

10. An element according to claim 9, wherein the anchor-
age means comprise an enlarged head provided with oppo-
site sharp-edge formations intended to be snap engaged by
corresponding formations of said clip element.

11. An element according to claim 10, wherein the clip
element is provided with a seizing lip in order to make easier
the manual grasping thereof.

12. An element according to claim 11, wherein the aux-
iliary profile is substantially L-shaped so that it has a
primary branch and a secondary branch generally perpen-
dicular to each other.

13. An element according to claim 12, wherein the main
profile has a hook formation defining an elongated cavity
intended to slidably receive the secondary branch of the
auxiliary profile, so that the auxiliary profile is kept in a
condition generally close to the main profile owing to the
engagement of its secondary branch in said cavity.

14. An element according to claim 13, wherein said cavity
extends transversely to the elongated appendage, and the
extension of the secondary branch of the auxiliary profile is
substantially equal to the distance between the free end of
the hook formation and the elongated appendage, so that the
connection of the auxiliary profile to the main profile and
holding the coupled position are made easier when the main
profile is fixed to a support wall.

15. An element according to claim 14, wherein each of
said screw members has a control formation and a threaded
stem which engages a corresponding threaded hole formed
in the auxiliary profile, whereby the distance between the
auxiliary profile and the respective main profile can be
adjusted as a result of the rotation of said screw members
about their axis, in order to change the tension of the sheet
material supported by the frame.

16. An element according to claim 15, wherein the thread
of the stem of said screw members engages the thread of a
respective nut disengageably associated to the auxiliary
profile.

17. An element according to claim 15, wherein a groove
is formed on the face of the elongated appendage facing the
auxiliary profile, for receiving a portion of the free end of the
stem of said screw members.

18. An element according to claim 5, wherein each of said
screw members has a threaded stem crossing the auxiliary
profile and provided at an end with an enlarged head adapted
to be received, freely rotatably, in an undercut groove
formed in said elongated appendage of the main profile,
whereby the distance between the auxiliary profile and the
respective main profile can be adjusted as a result of the
rotation of said screw members about their axis, in order to
change the tension of the sheet material supported by the
frame.

19. An element according to claim 18, wherein each of the
screw members has a control formation which can be fixed
to the end of the threaded stem opposite to said enlarged
head.

20. An element according to claim 19, wherein the control
formation of the screw members is a body which can be
fixed to an end of the threaded stem of the screw member by
means of the engagement of a prismatic formation extending
from such a stem, in a corresponding cavity of such a body.

21. An element according to claim 20, wherein the control
formation of the screw members is provided with radial fins
in order to make easier the manual driving thereof by a user.

22. An element according to claim 20, wherein the control
formation of the screw members can be driven by a driving
tool, and in that such a control formation has a disc-shaped
base portion for helping to keep said driving tool in its own
position when such screw members are driven.

23. An element according to claim 1, wherein a framing
profile can be associated to the main profile, which can be
snap fixed to the main profile as a result of the engagement
of fastening means of the main profile or of the framing
profile, in a recess of the framing profile or of the main
profile, respectively.

24. An element according to claim 23, wherein said recess
is a cavity defined close to the hook formation and facing the
side opposite to the elongated appendage.

25. An element according to claim 1, wherein the main
profile has, at its axial ends, seats for receiving rectilinear,
angled, or curvilinear connection elements, which have a
cross-section corresponding to that of said seat.

26. An element according to claim 25, wherein said
receiving seats are defined by an axial cavity of the beam
portion of the main profile.

27. An element according to claims 3, wherein the beam
portion of the main profile has engagement formations for
allowing to receive the heads of screws for fixing said
connection elements.

28. A frame for a panel system comprising a flexible sheet
material, including a plurality of elongated elements accord-
ing to claim 1.

29. A frame according to claim 28, wherein the beam
portions of the main profiles of the elongated elements are
hollow and have a polygonal section, and in that rectilinear,
angled or curvilinear connection elements are inserted in the
cavity of the main profiles, such connection elements having
a polygonal cross-section corresponding to that of the cavity
of the main profiles and being fixed at the ends of the main
profiles by screw fixing elements such as bolts.

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