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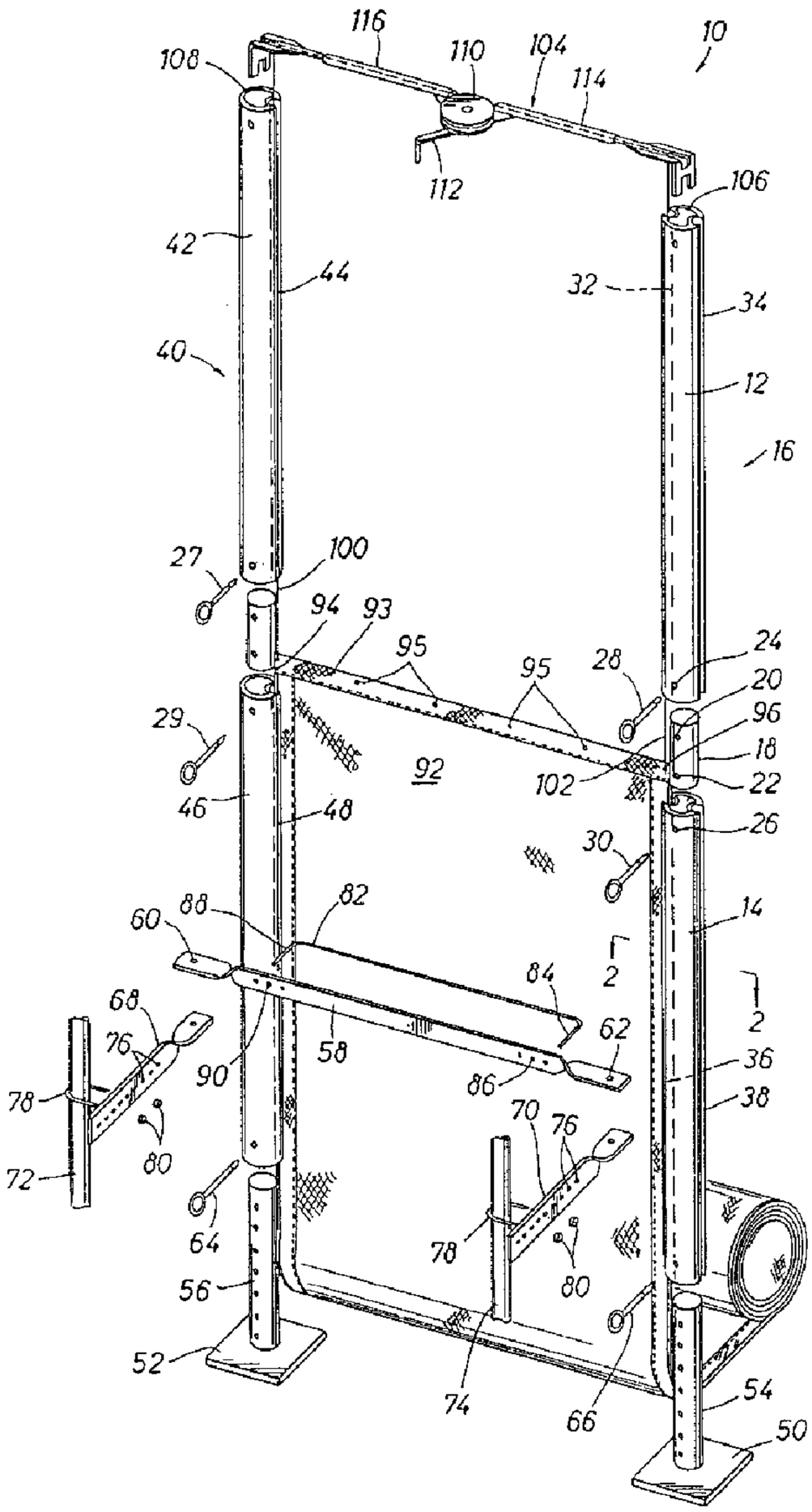
(54) **SYSTEME DE PROTECTION TEMPORAIRE**

(54) **TEMPORARY PROTECTIVE COVERING SYSTEM**



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(57) L'objet de cette invention vise à protéger temporairement des objets extérieurs contre le vent, la pluie, la neige ou autres. Plus particulièrement il s'agit d'un système de supports et de panneaux en tissu ou en plastique qu'on monte verticalement pour former une protection continue au-dessus d'une surface, d'une structure ou d'un objet. Les éléments de ce système peuvent être assemblés suivant des configurations variées en fonction des besoins de la situation. L'installation de ce système n'exige qu'une main-d'oeuvre minimale et la protection peut être facilement montée ou abaissée à volonté; il est constitué de plusieurs couches de panneaux tel qu'un panneau résistant aux intempéries et un panneau à sangle de sécurité.

(57) The present invention provides temporary protection of outside objects from wind, rain, snow, or other elements. In particular, the present invention is a system of supports and fabric or plastic panels that are erected to provide a continuous protective covering over an area, structure, or object. The components of the system may be assembled in various configurations as the situation demands. The system requires minimal labor to install and the covering can be readily raised and lowered as desired. The system accomodates multiple layers of panels such as one weather proof panel and one safety webbing panel.

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TEMPORARY PROTECTIVE COVERING SYSTEM

ABSTRACT OF THE DISCLOSURE

The present invention provides temporary protection of outside objects from wind, rain, snow, or other elements. In particular, the present invention is a system of supports and fabric or plastic panels that are erected to provide a continuous protective covering over an area, structure, or object. The components of the system may be assembled in various configurations as the situation demands. The system requires minimal labor to install and the covering can be readily raised and lowered as desired. The system accomodates multiple layers of panels such as one weather proof panel and one safety webbing panel.

TEMPORARY PROTECTIVE COVERING SYSTEM

FIELD OF THE INVENTION

The present invention relates to the temporary protection of outside objects from wind, rain, snow, or other elements. In particular, the present invention is a system of supports and fabric panels that are capable of being erected to provide a continuous protective covering over an area, structure, or object.

BACKGROUND OF THE INVENTION

In the construction industry, it is frequently desirable to protect workers and buildings under construction from the weather. Contractors normally erect scaffolding around the outside of structures upon which the work is to be performed. Such scaffolding provides support for workers and tools so that work may be done on the structure at elevated levels. Scaffold enclosures are generally applied to the outside of the scaffolding, after it has been erected to create a weatherproof environment around the scaffold and the structure. Prior art scaffold enclosures have frequently been complicated and cumbersome, and they have required significant expense and time to erect. The enclosures have also been difficult to open or close as needed.

U.S. Pat. No. 3,586,126 to Eickhof discloses an elongated framework constructed with sufficient rigidity for mounting between a pair of shorings and depending scaffolding therefrom. A roll of flexible protective material is affixed to the framework to produce at least a partial enclosure about a work area when in at least a partially unrolled position. Means are affixed to the framework for supporting the roll of material and providing the rolling and unrolling action thereof.

U.S. Pat. No. 3,805,816 to Nolte discloses a protective covering for sheltering all sides of a scaffold. A rectangular covering element has hook-shaped telescoping profile bars and clamping lugs on two sides thereof, while the opposite sides have slots for receiving connection

cables. Vertically adjacent covering elements are pushed or slipped into each other by means of hook-shaped profile bars which are secured to the edge of each covering element and which telescope into one another. Clamping lugs hold adjacent bars together. Horizontally adjacent cover elements overlap one another and are attached to the vertical struts of the scaffold construction by means of individual connection cables fitted through slots and individually ties around the vertical strut. Alternatively, an alligator clip-like cable may be utilized for this purpose.

U.S. Pat. No. 3,995,715 to Vitanen discloses a scaffold enclosure having a plurality of plastic sheets with beaded portions which are held together in a related assembly to the scaffolding by attachment members which partly surround the beaded portions.

U.S. Pat. No. 5,038,889 to Jankowski discloses a scaffold enclosure having a plurality of panels with hook and loop closure straps for securing the panel to various scaffold struts. Each panel also has continuous strips of hook and loop closures on the inner and outer surfaces at each edge. The panels may be engaged on one another to form a barrier.

However, the scaffold enclosures noted above suffer in several aspects which make burdensome or impractical to use. For some of the enclosures, the assembly is time and labor intensive. Some of the enclosures require intricate positioning and securing of individual panels which consumes so much time and labor as to negate any advantage that the enclosures provide.

Yet another limitation of these enclosures is that the barrier cannot be easily opened or closed. Certain enclosures that are fixed to the scaffold cannot be opened without disassembling the enclosure. Because this is so time consuming, the enclosure is typically left in place until the entire project is finished even though the enclosure may be in the way at certain points in the construction process.

When the weather is pleasant and sunny, it is useful to open the enclosure and let the sun light up the construction area or assist drying of materials. In addition, it is frequently necessary to remove portions of the enclosure to allow passage of materials and equipment to the structure. Conversely, during cold, windy, or wet weather it would be

desirable to close the enclosure to protect the construction and the workers. If extremely high winds from storms, tornadoes, or hurricanes are present, the enclosure should he opened to allow the wind to pass through the scaffold rather than risk the scaffold being blown down. If is desirable to have a scaffold enclosure that could be routinely used at construction sides to improve control over construction scheduling and avoid delays.

Furthermore, it is desirable to have scaffold enclosure that requires little storage space, takes low maintenance, and has a low cost. It is also desirable to have an enclosure system which protects workers from injuries caused by falls.

WO94/23153 discloses a device for attaching cloth to a scaffold for screening purposes, wherein the cloth is provided leeches or enlargements along the sides, and is threaded into open grooves in a rail adapted to fastened to the stays of the scaffold by means of clamps.

According to this invention there is provided a temporary protective covering system comprising: a pair of spaced support poles each comprising an elongate support member having a first end, a second distal end, and means for temporarily securing the support poles in a space relating to a structure; a plurality of cross braces bracing and spacing said pair of support poles; facing guide channels in said elongate support poles; and a flexible panel between said support poles having a width spanning between said support poles, two interlocking lateral edges of the panel being slidably held within said guide channels, wherein means are provided for controllably moving said panel between said facing guide channels which means comprise elongate cables extending at least partly along each of said guide channels), each cable having one

end coupled to said panel and a remote end thereof for pulling.

According to another aspect of this invention there is provided a method for installing a temporary protective covering system comprising the steps of: (a) positioning first and second support poles of substantially equal length in parallel alignment, each pole having a first end, a second distal end, and a guide channel; (b) installing a plurality of elongate cross braces between the first and second support poles; (c) temporarily securing a winch to a cross brace near the distal ends of the first and second support poles; (d) temporarily attaching first and second pulleys to the distal end of the first and second support poles; (e) threading first and second cables from the winch, over the first and second pulleys, and downward through the guide channels of the first and second support poles; (f) coupling the first and second cables to a flexible panel having interlocking edges; (g) cranking the winch to reel in the cable and thereby extend the flexible panel; (h) during raising, slidably securing the interlocking edges within the guide channels; (i) attaching a facia plate to a structure; (j) removing the pulleys and the winch; (k) securing the distal ends of the first and second support poles to the facia plate; (l) and securing the fabric panel to the facia plate.

The preferred embodiment of the present invention provides a protective covering system comprising a plurality of support poles having at least two elongate support members coupled together, each support pole having a first end, a second distal end, two guide channels, and means for securing the support poles in a spaced relation to a structure; a plurality of elongate cross braces having two ends coupled to adjacent support poles; a fabric panel between each pair of adjacent support poles having a width spanning between adjacent support poles, a

top interlocking edge, and two interlocking lateral edges slidably held within the guide channels of adjacent support poles; and means for controllably raising and lowering each fabric panel secured between adjacent support poles. The means for controllably raising the lowering the fabric panels may comprise a rotatable drum, first and second pulleys snugly inserted into the guide channels of adjacent support poles, and a cable slidably held within each guide channel having a first end coupled to the interlocking lateral edge of the flexible panel and a second end coupled to the rotatable drum, and wherein the cable is guided over a pulley.

The preferred method of the present invention comprises a method for installing a protective covering system over a rigid structure comprising the steps of: securing a plurality of support members having two guide channels to the rigid structure in a plurality of aligned, parallel rows a fixed distance apart so that the guide channels of each row are in aligned communication; raising a plurality of fabric panels having two interlocking lateral edges by slidably securing the interlocking edges within the guide channels of adjacent rows; and releasably securing the fabric panels to cover the structure.

In an alternative embodiment, the protective covering system for use with rigid structural members comprises: a first plurality of support members detachably attached to the rigid structural members to form a plurality of support poles, wherein each support member has two guide channels which re in aligned communication with the guide channels of adjacent support members; a first plurality of fabric panels having two interlocking lateral edges slidably held within the guide channels of adjacent support poles; and means for controllably raising the lowering each fabric panel. The protective covering system may further comprise a second plurality of support members

detachably attached in a spaced relation to the first plurality of support members.

BRIEF DESCRIPTION OF THE DRAWINGS

So that the manner in which the above recited features, advantages and objects of the present invention are attained and can be understood in detail, a more particular description of the invention, briefly summarised above, may be had by reference to the embodiments thereof which are illustrated in the appended drawings.

It is to be noted, however, that the appended drawings illustrate only typical embodiments of this invention and are therefore not to be considered limiting of its scope, for the invention may admit to other equally effective embodiments.

FIGURE 1 is an exploded assembly view of a protective covering system;

FIGURE 2A is a cross-sectional view of a support pole from Figure 1 taken along line 2-2 shown with C-shaped guide channels therein;

FIG. 2B is an alternate embodiment of the support pole or support member of FIG. 2A;

FIG. 3 is a plan view of a protective covering system enclosing a scaffold erected for the laying a brick wall;

FIG. 4 is a plan view of a protective covering system enclosing a scaffold erected against a building wall;

FIG. 5 is a partially exploded perspective view of a winch and pulley assembly;

FIG. 5(b) is a cross sectional view of FIG. 5 showing the attachement of the winch to a cross brace;

FIG. 6 is a plan view of a protective covering system configured horizontally around a building;

FIG. 7 is a locking pin with an eyelet for securing cross braces to the support poles;

FIG. 8 is a perspective view of a soffit and facia attachment for securing the support poles and fabric to a wall in a weather tight arrangement;

FIG. 9 is a perspective view of a support member according to FIG. 2B being attached to a rigid scaffolding structure;

FIG. 10 is an exploded view of two support members secured together with the guide channels in aligned communication;

FIG. 11A is a plan view of a support member, suspended by cables, having two pairs of guide channels in a spaced relation to receive two layers of fabric panels; and

FIG. 11B is perspective view of the support member of FIG. 11A being attached directly to a rigid structure such as scaffolding.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is a temporary protective covering system that can be installed by one or two people without special tools. The system has only a few components which can be assembled in a vast number of configurations. The reduced number of components makes the enclosure simpler and quicker to assemble than many previous enclosures.

The system of the present invention can be used in various applications, such as: temporary barriers to control and direct fresh air circulation in the mining industry; area containment and isolation of hazardous materials and environmental control, such as in the nuclear industry, lead abatement for paint removal, and large sand blasting and dust producing operations; tenting for athletic events, camping, and other outside events; temporary or semi-permanent greenhousing, hydroponics enclosures, hay or grain storage and the like; shelters for animal containment such as dog kennels, livestock and animal husbandry, and the like; construction or maintenance of buildings, structures, and outdoor objects with or without the use of scaffolding; and fall restraints to protect people from injury.

Referring to FIG. 1, the components of a protective covering system 10 are shown in an exploded assembly view. Elongate support members 12 and 14 are coupled together to form a vertical support pole 16. The elongate support members 12 and 14 can be coupled in various ways, including male and female connections, but are shown here as a male-male coupling 18. The pin insert holes 20 and 22 in coupling 18 are matched up with the pin insert holes 24 and 26, respectively, so that lock pins 28 and 30 can be inserted to secure the coupling in place.

The elongate support member 12 has guide channels 32 and 34 on opposing sides of the member 12. The pin holes of members 12 and 14, as well as the pins in the coupling 18, are aligned vertically so that the guide channels 32 and 34 match up with guide channels 36 and 38 of support member 14. Channels 32, 34, 36, and 38 line up to form two opposing channels that extend substantially the length of the vertical support pole 16. It is preferred that the channels be interior to the support poles (as shown in FIG. 2A)

While pole 16 has two opposing channels, pole 40 has only one channel made up of channel 44 of elongate support member 42 and channel 48 of elongate support member 46. The channels 34 and 38 may be utilized to guide the edge of a second panel extending in the opposing direction (to the right in FIG. 1). Support poles can be provided with a second channel at any angle, from zero to 360 degrees, from the first channel. By arranging an alternative series of poles and

panels, always having a pole on both sides of a panel, a continuous barrier that turns corners can be assembled.

Poles 16 and 40 are mounted on bases 50 and 52, respectively, having vertical adjusting bars 54 and 56 with several vertically aligned holes which allow for minor adjustments in the height of the support poles 16 and 40. Upward or downward adjustment of the poles may be necessary where the ground upon which the covering is assembled is somewhat uneven.

Vertical support poles 16 and 40 are held upright by frame braces 68 and 70 which extend from the support pole, secured by pins 64 and 66, respectively, to a rigid structure such as the legs 72 and 74 of a scaffold. The frame braces 68 and 70 are detachably coupled to the scaffold leg using any means, including U-bolts and nuts. The frame braces 68 and 70 may have a series of bolt holes 76 or a slot (not shown) through which to connect the U-bolts 78 and nuts 80 in order to accommodate variations in the distance between the support pole and the scaffold.

The poles 16 and 40 are tied together at a fixed distance apart by using the cross brace 58. The holes 60 and 62 in the ends of brace 58 allow the brace 58 to be secured to the poles at various heights. While the poles may have additional holes through which to attach the brace, it is preferred to simply attach the brace 58 using a lock pin connecting the support members to the base, such as pins 64 and 66, and/or connecting support members to each other, such as lock pins 27 and 28 or lock pins 29 and 30.

Referring briefly to FIG. 7, a lock pin 220 has a shaft 222, an eyelet 224, and a hinged tail 226. The hinged tail 226 is coupled to the shaft 222 by a rivet 228. The lock pin 220 is used to couple various member together by positioning the hinged tail 226 in a linear arrangement with the shaft 222 and inserting the tail and shaft through a pin hole. The tail portion 226 is pulled through the hole until the hinged tail 226 can be rotated perpendicular to the shaft. The length of the shaft 222 between the eyelet 224 and the rivet 228 should be sufficient to pass through the coupled members and rubber washers there between, but not so long as to allow slack between the members.

The eyelet 224 is useful for securing shock cords attached to custom cut fabric panels or anchoring guys.

Referring back to FIG. 1, an elongate panel 92 made of a fabric or polymer sheet is provided with interlocking edges 94 and 96 that are slidably held within the guide channels 44/48 and 32/36, respectively. The guide channels may take any shape, but are preferably C-shaped with a constant diameter and an elongate opening that extends over the length of the guide channel. It is preferred that the opening or mouth of the channel be directed away from the support pole and positioned around the pole 90 degrees from the pin holes 24 and 26.

Referring briefly to FIG. 2A, a cross section of the support member 12 taken along line 2 in FIG. 1 is shown with C-shaped guide channels 32 and 34 therein. The support member 12 is typically made of a light-weight metal, such as aluminum, and is preferably hollow to minimize the weight of the system while maintaining its strength.

FIG. 2 also illustrates that the interlocking edge 96 of the panel 92 has a diameter less than the diameter of the channel 32 but greater than the width of the openings 98. Having these relative dimensions allows the interlocking edge 96 to be slidably held within the guide channel 32 while permitting the elongate flexible panel to extend through the opening 98.

Referring back to FIG. 1, the panel 92 may be made of a variety of fabrics or plastic sheeting having sufficient strength to withstand wind loads and driving rain. The top edge 93 of the panel 92 is folded over and sewn for increased strength. A set of eyelets 95 are placed in the folded top edge 93 for securing custom panels (not shown).

A panel tensioner 82 is attached to the cross brace 58 in order to put tension on the panel and prevent it from flapping in the wind. The tensioner 82 is a strong flexible material, typically a steel rod. One end of the tensioner 82, such as end 84, is inserted into a hole 86 in the cross brace 58. The tensioner 82 is then bowed outwards toward the panel until the proper tension is achieved. Then the other end 88 of the tensioner 82 is inserted into a hole 90.

The system also includes means for controllably raising and lowering the flexible panel. The panels may be raised and lowered by hand or any other means. As shown in FIG. 1, the system may include a

pair of cables 100 and 102 connected to the top interlocking edges 94 and 96 of the panel 92. The cables 100 and 102 pass upward from the panel 92 through the channel 32 to a halyard winch 104.

The winch 104 may have arms 114 and 116 which are secured to the distal ends 106 and 108 of the adjacent support poles 16 and 40, respectively. However, referring now to FIG. 5 and 5(b), it is preferred that the winch 170 be detachably secured to an angle iron cross brace 172 so that a single winch and a pair of cables can be used to raise all the fabric panels consecutively. The winch 170 includes a frame 174 that can be attached to the cross brace 172 by setting the mounting channel 176 of the frame 174 over the back of the brace 172 and rotating the locking bar 178 into a position under the brace 172. Secured in this fashion, the winch 170 is free to slide along the brace 172 as necessary to equalize the tension on the pair of cables 180 and 182. The winch 170 further includes a drum 184 with dual tracks 186 and 188 for receiving the cables 180 and 182, respectively. A shaft 190 is placed through the center of the drum 184 and extending through both sides of the frame 174. One end of the shaft 190 is connected to a crank 192 for turning the drum 184.

Referring to FIG. 5, pulleys 194 are temporarily mounted on the distal ends of the support poles 198. These pulleys 194 have a male extension 202 which fits snugly into the C-channel 200 of each support pole 198. The pulleys 194 allow the cables 180 and 182 to be pulled in a direction linear to the C-channels 200, thereby reducing the force required to raise the fabric.

Referring back to FIG. 1, the winch 104 allows the cables 100 and 102 to communicate with a spool or drum 110 to which they are attached. The drum 110 has a hand crank 112 or other hand-operated or electronic means for turning the drum. The cables are attached to the drum so that rotation of the drum causes tension on the cables. Further rotation causes the cables to be wound onto the drum and the attached panel to be raised. The drum can be rotated in the opposite direction to lower the panel.

The components of the system just described can be configured in a variety of ways. The system can be made taller by linking additional support members to the vertical support poles. The system can be

made wider by installing a plurality of vertical support poles and panels across the desired area. The poles may be positioned in a straight line, a curve, or an angle as needed for protection of the construction area. When the system is configured into a three dimensional structure, it is possible for the system to stand alone.

Referring now to FIG. 6, the present invention may be used economically in applications that are much wider than tall, such as covering the walls of a single story building. As shown in FIG. 6, the system 210 can be mounted with the support poles 212 and 214 in a horizontal arrangement. Stanchion adapters 216 can be used to connect the poles at standard lock pin positions. In this configuration, fewer fabric panels and less labor are required.

Another useful configuration of the system of the present invention is shown in FIG. 3. The system 120 includes nine support poles 122 spaced a uniform distance apart to accommodate up to eight elongate panels. The poles 122 are comprised of a combination of straight and curved support members to form inverted frame sweep bends. The frame sweep bends shown provide enclosed protection over a space sufficient for a three tier scaffold system 126 to be constructed for the laying of a brick or concrete block wall.

The curved or bent support members 123 and 125 can have any degree of deflection so long as the panel's interlocking edge does not bind in the channel. However, members 123 and 125 will typically have a 60 degree deflection in order to establish a 30 degree roof slope. When the system is configured horizontally, the sweep bends may be 90 degrees to provide for corner turns.

A winch 128 is placed at the distal end of the poles, which is now located at ground level. The cables pass upward and over the top portion of the poles and attach to a panel which is typically rolled or folded near the front base of the system. For purposes of illustration, only three panels 124 are shown to be fully extended into the enclosed position. The panel 130 is shown only partially closed with a portion of the panel 130 remaining in a roll at point 132.

Once a panel is fully extended into the inverted U-shaped configuration, the weight of panel material is substantially the same on both sides of the system. Therefore, retracting the panel may require a

downward pull on the front portion of the panel in addition to releasing cable from the winch. Alternatively, weights 134 may be hung on the front portion of the panel so that there is always tension on the panel and cables and a single person can open the protective covering.

Note that the cross braces 136 are necessary for the system to have sufficient rigidity to stand upright and resist winds and rain. In certain circumstances such as this, it might be beneficial to secure the system 120 in place with a cable 138 and stake 140. Furthermore, rubber washers may be placed between each of the members connected, such as between the support member 14, the cross brace 58, and the frame brace 70, in order to provide additional stability to the system.

When the system is configured for a specific application, there may be certain areas of the enclosure that are not readily covered with the slidably held panels. Areas which are typically smaller than the elongate panels and/or non-rectangular, may be covered with custom cut sheets of the panel material tied to support poles, cross braces, and the eyelets along the top edge of the elongate panels.

Referring now to FIG. 4, another configuration of the system of the present invention 140 is shown covering a scaffold 142 against an existing wall 144. The support poles 146 are attached to the scaffold at various points 148 and extend up and over the scaffold to make contact with the eave 150 of the roof 152. Panel 154 is shown being partially raised by the winch 156.

Because the system 140 turns an interior corner 158 and an exterior corner 160, the standard elongate panels 162 are unable to provide seamless coverage of the construction area. Therefore, custom panels 164, 166, and 168 are secured into place with standard S-hooked shock cords extending from the custom panels to eye bolts or toggle lock pins with eyelets (see FIG. 7) located at the various connections between support poles and cross braces. It is also possible to fasten the shock cords to the eyelets located along the top edge of the panels.

A wall soffit and facia attachment 171 may be secured to the wall 144 or eave 150 for holding the support poles and fabric thereto in a continuous, weather tight manner. Referring now to FIG. 8, the attachment 171 is shown in greater detail. The attachment includes a

base plate track 230, a sliding lock track 232, and multiple cam lock levers 234. These three components are fastened together, for example by a rivet 236, in slidable contact. The attachment 171 is secured to a wall by use of fasteners, such as installing a screw 238 through the base plate 230 into the wall.

The base plate track 230 has a semicircular portion 240 which opens downward and the sliding lock track 232 has a semicircular portion 242 which opens upward. When the cam lock levers 234 are turned in the direction of arrows 244, the levers 234 engage the underneath side of the sliding lock track 232 forcing the semicircular portion 242 of the sliding lock track 232 upwards toward the semicircular portion 240 of the base plate track 230. When the cam lock levers are fully closed (shown at points 246), the two semicircular portions 240 and 242 form a C-channel 248 having a small opening 250 along the front edge.

A series of attachments 171 is installed side-by-side in edgewise contact. The channel 248 extends substantially the width of the attachment 171, but leaves a gap 251 at each end of the attachment 171 sufficient for an arm 253 of a C-track-to-frame locking pin 252, which is coupled to the support pole 255, to pass between the adjacent channels 248. The arm 253 has a lock lug 254 that is captured by the channels 248 when the sliding lock track 232 is secured in the upward position. In addition to securing the locking pin 252, the C-track 248 captures the interlocking top edge 256 of the fabric panel 258. Therefore, both the support pole 255 and the fabric panel 258 are secured in place to protect the underlying structure from the weather.

An alternate embodiment of the present invention uses a modified support member 260, as shown in FIG. 2B, formed by coupling two identical support pieces 261, 263. The half-tracks 262 of support piece 261 cooperate with the half-tracks 264 of support piece 263 to create two C-tracks 265 connected by a flat metal bar 267. It is preferred that each flat support member 260 have multiple holes or slots 266 through the center of the flat metal bar 267 which allow the support member 260 to be coupled to mating holes in a rigid structure. While the support member of FIG. 2B is shown with a hole or slot 266, lending itself to use with a bolt or the like, the support member 260

may be fastened to the rigid structure by any means known in the art, including clamps, ties, rivots, tack welding, and the like.

Now refering to FIG. 9, the flat support member 260 of FIG. 2B is used substantially in the same manner as the support member 12 in FIG. 2A, except that the flat metal bar 267 can be coupled directly to a rigid structure, such as a scaffold 270, eliminating the need for frame braces, cross braces, and bases. The support member 260 is attached to the rigid structure 270 with bolts 268, or other fastening means. It is preferred that the support members 260 have substantially the same length as a typical scaffold unit 270 for the sake of convenience. In fact, when a certain configuration is to be used repeatedly, it is possible to leave the support member 260 attached to the scaffold members when disassembled. It is also anticipated that the flat support members 260 or guide channels could be permanently affixed to the scaffold or other structure or originally manufactured as a part of the scaffold unit.

Now refering to FIG. 10, the ends of two support members 260 with dual C-tracks 265 are shown being coupled by a splice bar 274 which has holes 276 matching up with slots 266 in the members 260. It is desirable to couple or splice the support members 260 in situations or configurations where the members 260 must span between distant structural members or for any other reason that requires the splice bar 274 to keep the C-tracks 265 aligned.

Now refering to FIG. 11A, a pair of support members 260 with C-tracks are shown coupled together by a spacer 280 and eyebolt 282 with wingnut 284 . The arrangement of multiple support members 260 allows the use of panels in multiple layers 286 and 288. One useful configuration combines an isolation barrier in layer 286, such as to capture sand or shed rain, with a fall restraint in layer 288, such as a safety webbing. The particular embodiment illustrated in FIG. 11A is suspended by a strong cable 290 attached to the eyelet 282. In this arrangement, the invention lends itself to use below bridges or other elevated structures where fall restraints are necessary. Alternatively, FIG. 11B shows two support members 260 coupled by a spacer 280 directly to a rigid structure 300, such as a scaffold, a metal I-beam, a concrete beam, or the like.

As with the previous embodiment, the flat support members 260 can be configured to produce many different covering system, including horizontal and vertical walls, ceilings, and underlying barriers. Furthermore, the flat support members 260 may still be used in combination with the wall soffit and facia attachment 171.

While the foregoing is directed to the preferred embodiment, the scope thereof is determined by the Claims which follow:

CLAIMS:

1. A temporary protective covering system comprising: a pair of spaced support poles(12,14) each comprising an elongate support member having a first end, a second distal end, and means(68,70) for temporarily securing the support poles in a space relating to a structure; a plurality of cross braces(58) bracing and spacing said pair of support poles(12,14); facing guide channels(32,44) in said elongate support poles(12,14); and a flexible panel(92) between said support poles(12,14) having a width spanning between said support poles, two interlocking lateral edges(96) of the panel being slidably held within said guide channels(32,44), characterised in that means are provided for controllably moving said panel between said facing guide channels which means comprise elongate cables(100) extending at least partly along each of said guide channels(32,44), each cable(100) having one end coupled to said panel(92) and a remote end thereof for pulling.

2. The system of Claim 1 wherein the guide channels(32,44) have a C-shaped cross-section of constant diameter and an elongate opening(98) with a constant width over the length of the guide channel, and wherein the diameter of the guide channel is greater than the diameter of the interlocking lateral edge(96) of the flexible panel(92), and wherein the width of the elongate opening is less than the diameter of the interlocking lateral edge of the flexible panel and greater than the thickness of the flexible panel.

3. The system of Claim 1 or 2 further comprising means(82) for tensioning the flexible panels.

4. The system of Claim 1, 2 or 3 further comprising a broad base member(50,52) coupled to the first end of the respective support pole(12,14) to distribute the weight of the support over a large area of the substantially horizontal surface.

5. The system of any one of the preceding Claims further comprising: an adapter having a first end coupled to the distal end of a support pole(12,14) and a second end having a horizontal shaft(355); and a facia plate attached to a structure having a C-channel that can be opened for insertion of the horizontal adapter shaft and the top interlocking edge of the fabric panel, wherein the C-shape of the facia can be closed to securely hold the horizontal adapter shaft and the top interlocking edge of the fabric panel.

6. The system of any one of the preceding Claims wherein the support poles are substantially vertical and the first end rests on a substantially horizontal surface.

7. The system of any one of Claims 1 to 5 wherein said panel and said pair of spaced support poles are horizontal.

8. The apparatus of Claim 7 wherein said spaced support poles are parallel, extend along a first side of the structure, and define a curving corner to thereby extend along a second side of the structure.

9. A method for installing a temporary protective covering system comprising the steps of: (a) positioning first and second support poles(12,14) of substantially

equal length in parallel alignment, each pole having a first end, a second distal end, and a guide channel(32,44); (b) installing a plurality of elongate cross braces(58) between the first and second support poles; (c) temporarily securing a winch(170) to a cross brace(172) near the distal ends of the first and second support poles; (d) temporarily attaching first and second pulleys(194,196) to the distal end of the first and second support poles; (e) threading first and second cables(180,182) from the winch, over the first and second pulleys, and downward through the guide channels of the first and second support poles; (f) coupling the first and second cables to a flexible panel(92) having interlocking edges(96); (g) cranking the winch(170) to reel in the cable and thereby extend the flexible panel; (h) during raising, slideably securing the interlocking edges within the guide channels; (i) attaching a facia plate(171) to a structure; (j) removing the pulleys(194,196) and the winch(170); (k) securing the distal ends of the first and second support poles(12,14) to the facia plate; (l) and securing the fabric panel to the facia plate.

10. The method of Claim 9 further comprising the steps of: (m) securing the flexible panel to the distal ends of the support poles; and (n) removing the pulleys and the winch.

11. The method of Claim 9 further comprising the steps of: (m) repeating steps (a)-(I) for a second panel.

12. The method Claim 10 further comprising the steps of: (o) repeating steps of (a)-(n) for a second panel.

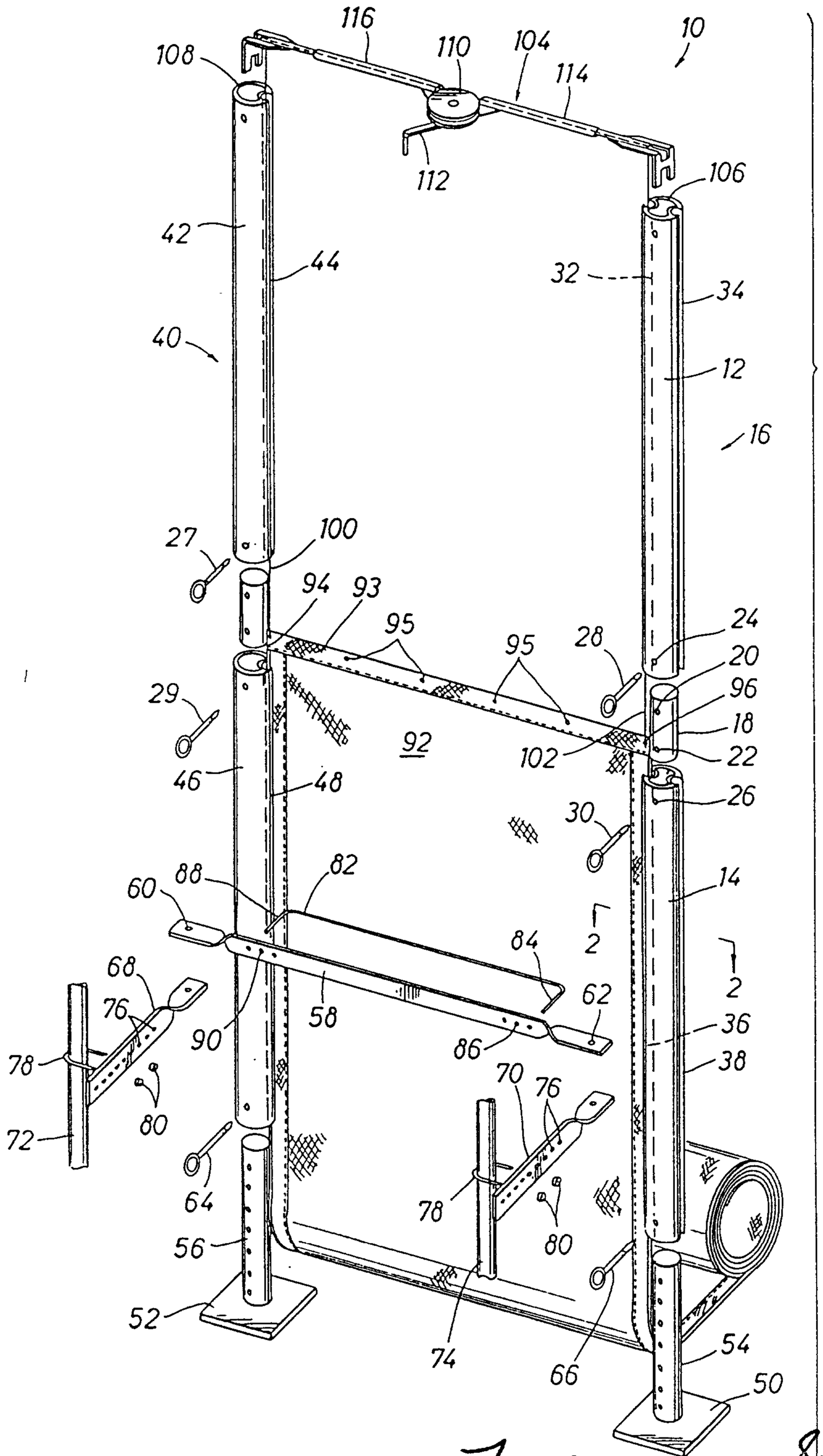

FIG.1

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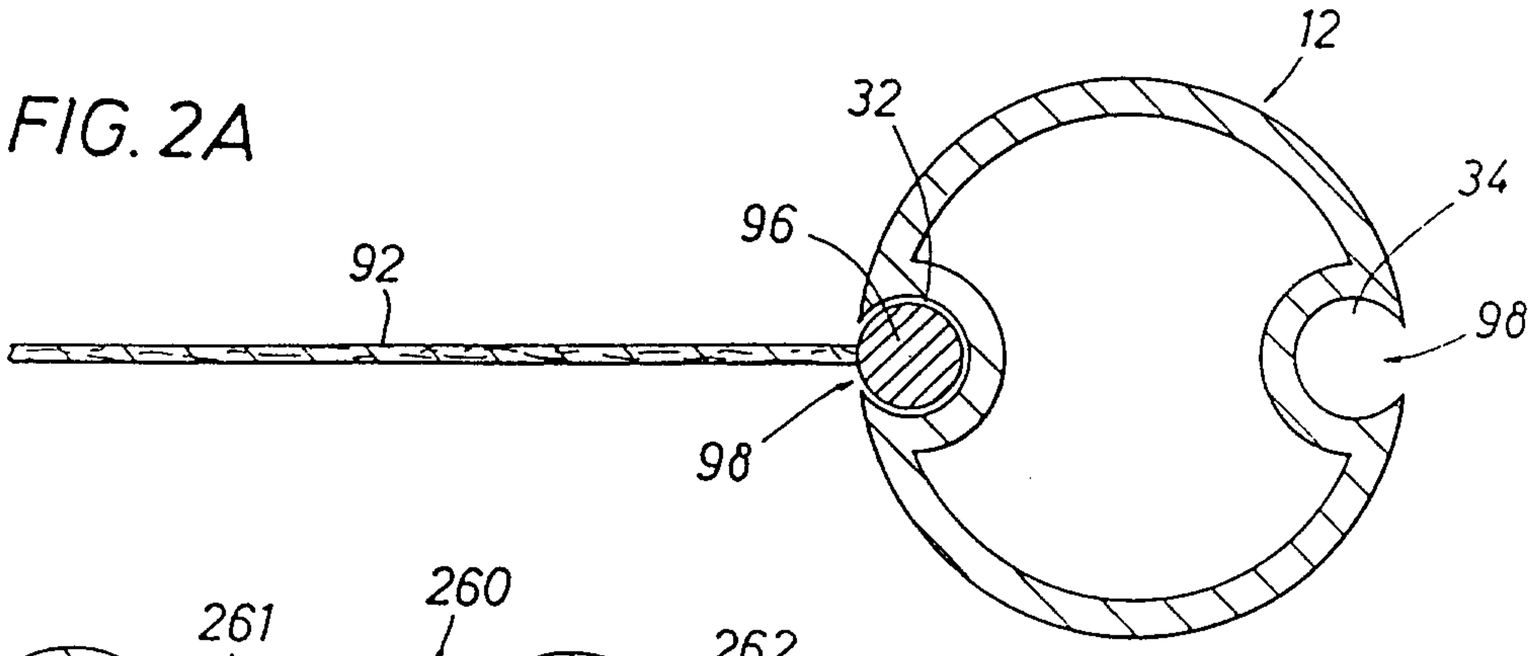
FIG. 2A



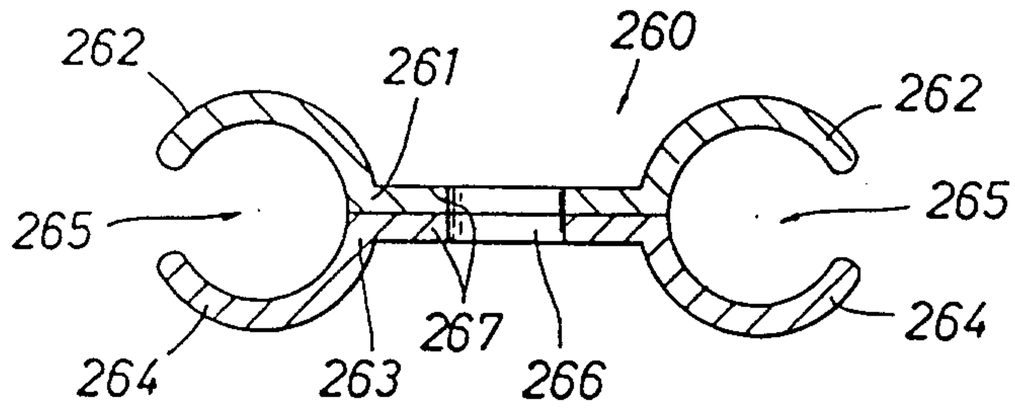
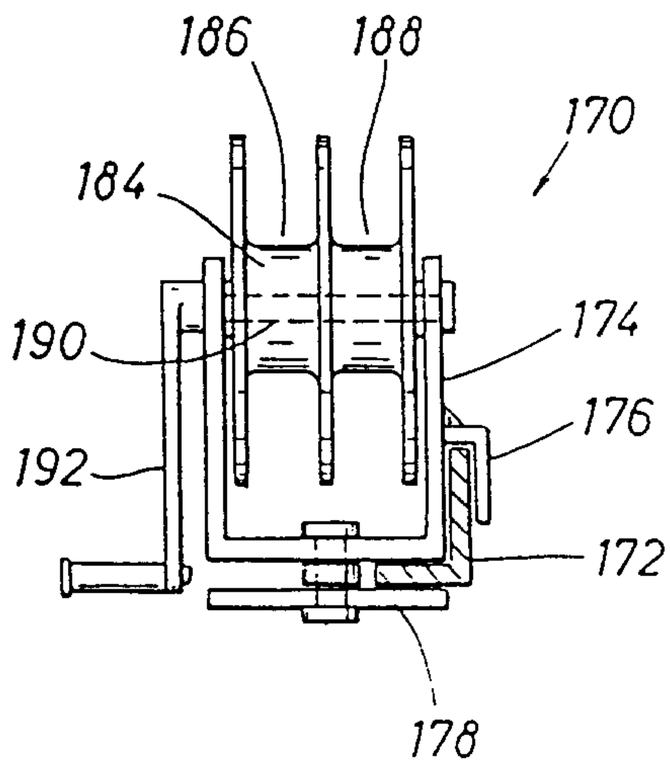


FIG. 2B

FIG. 5b



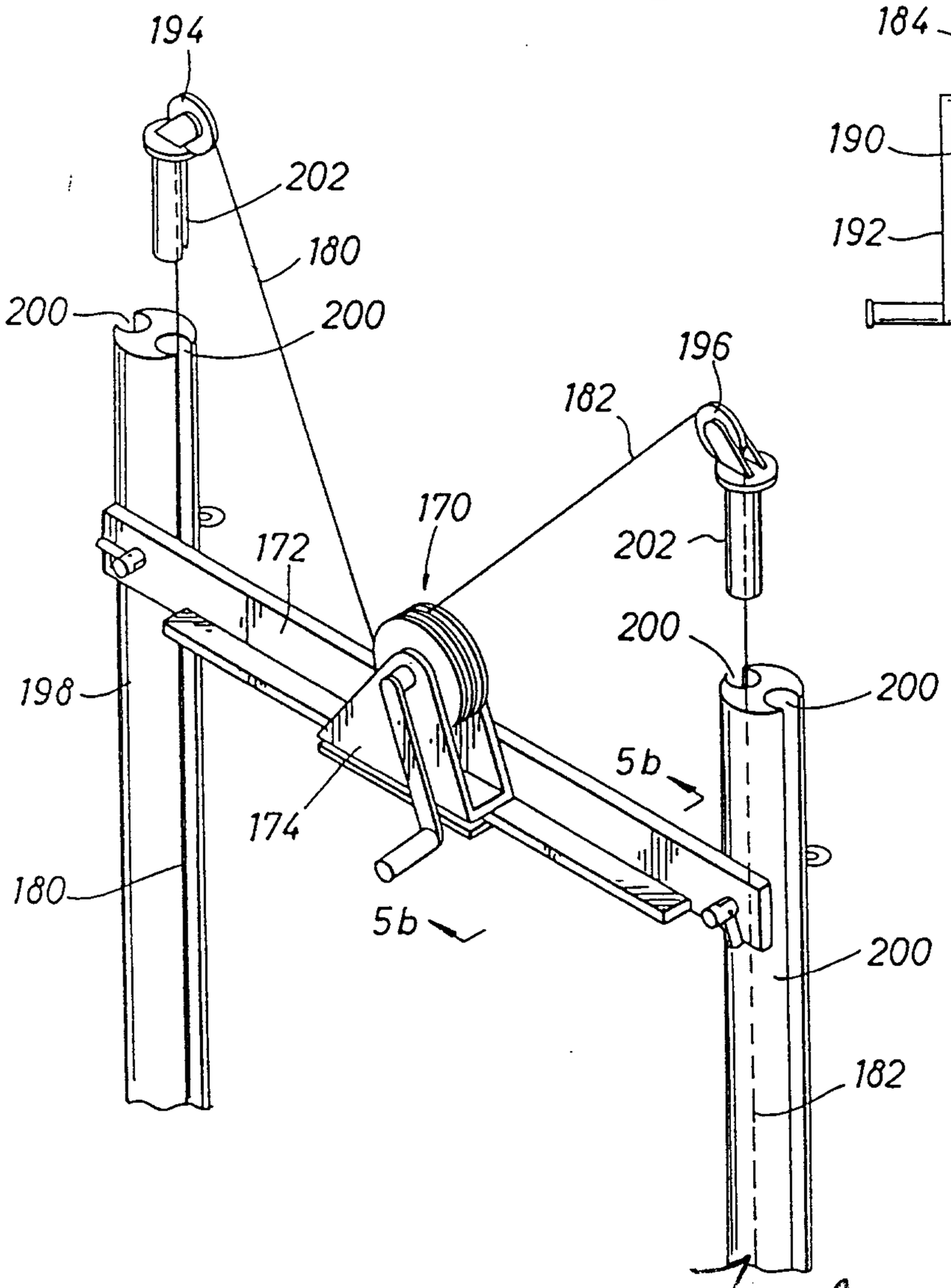


FIG. 5

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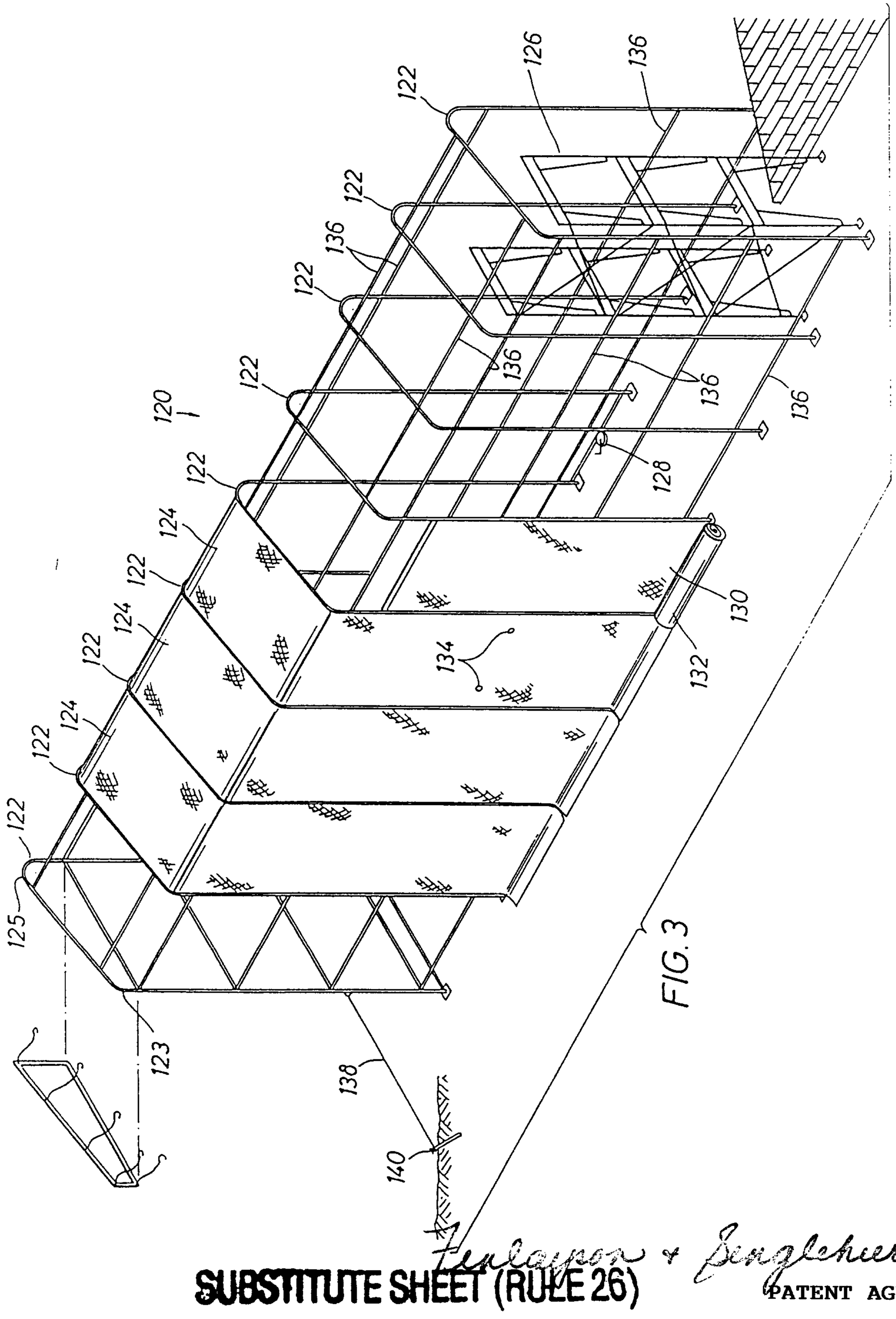

FIG. 3

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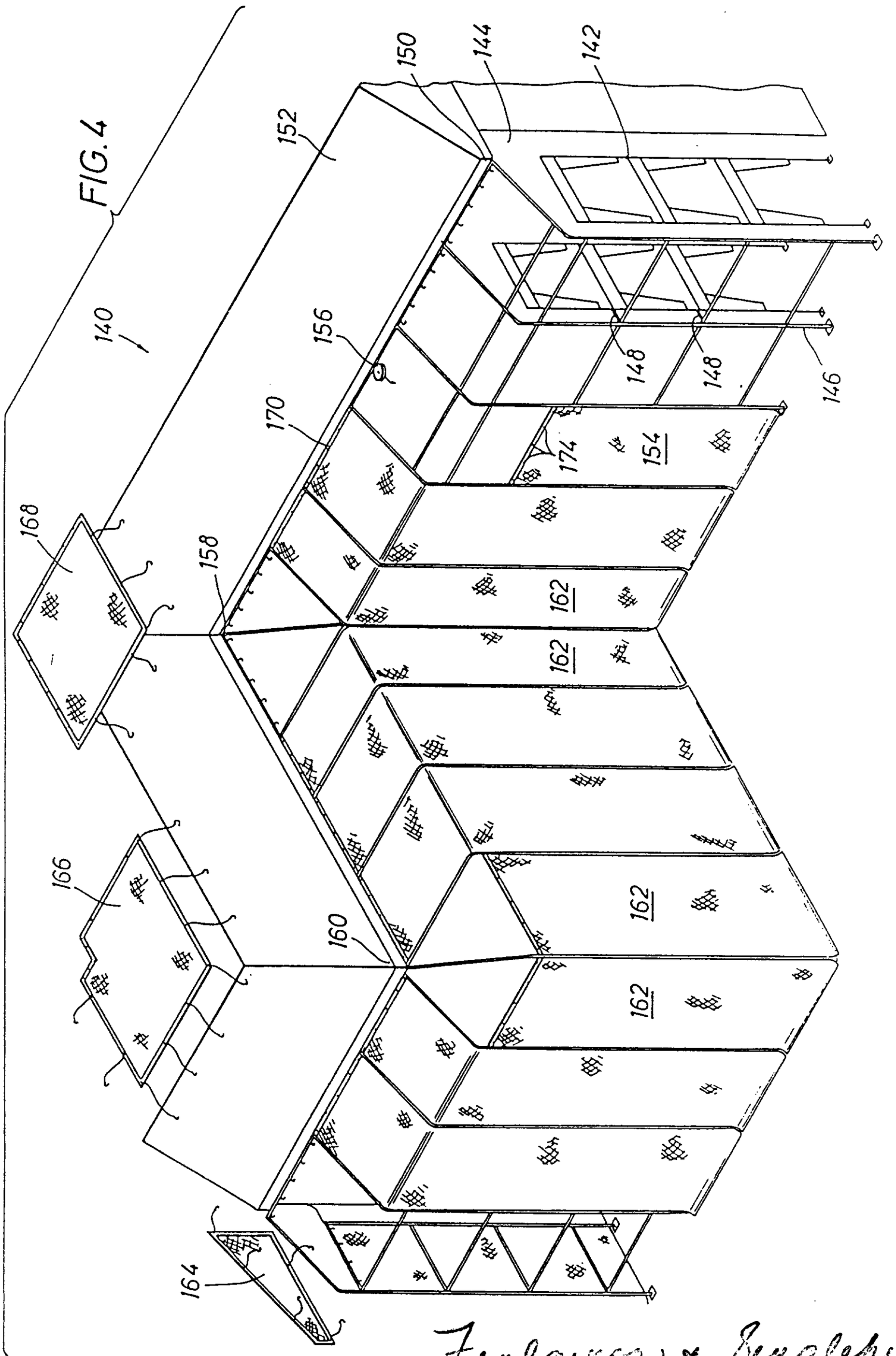

FIG. 4

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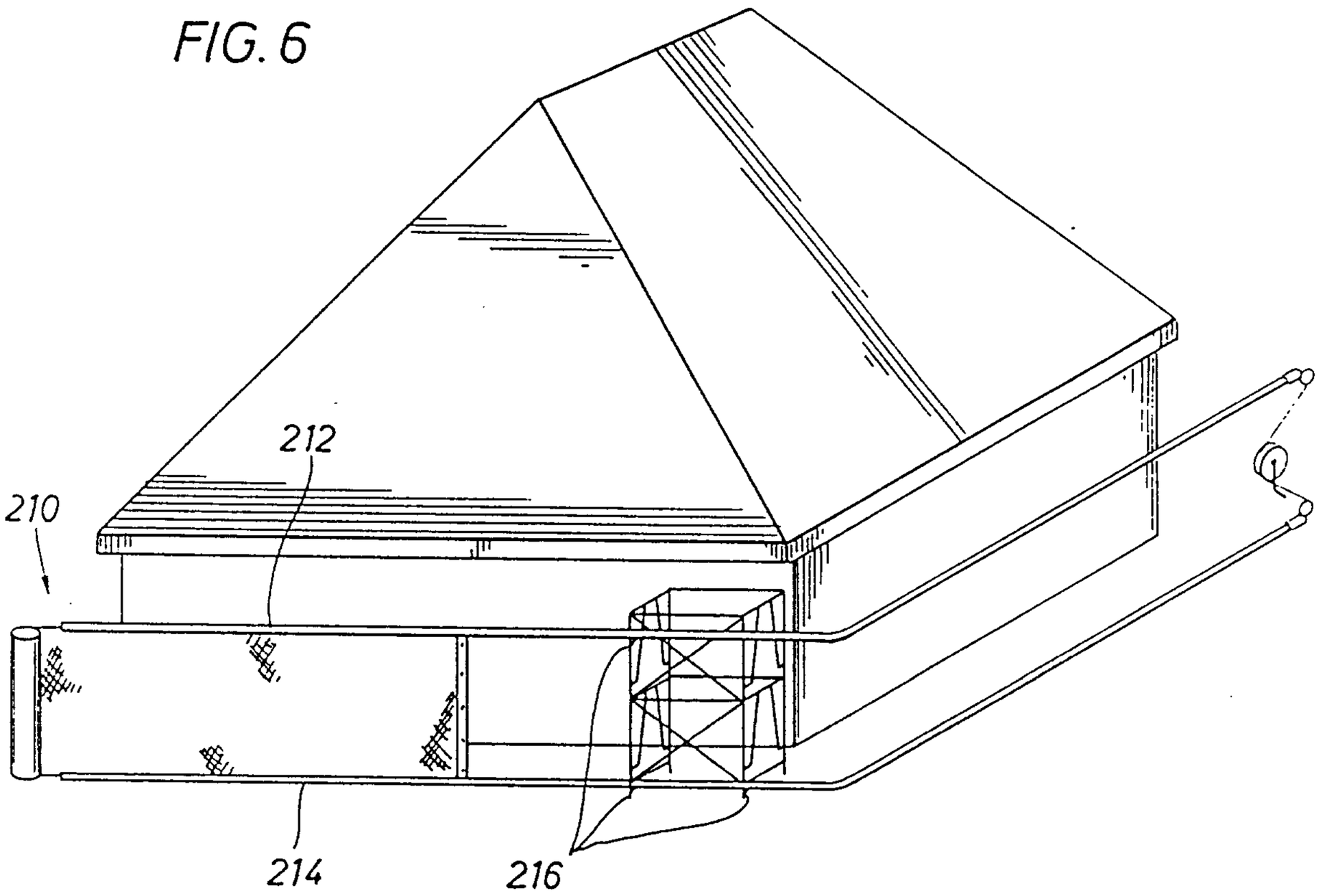
FIG. 6



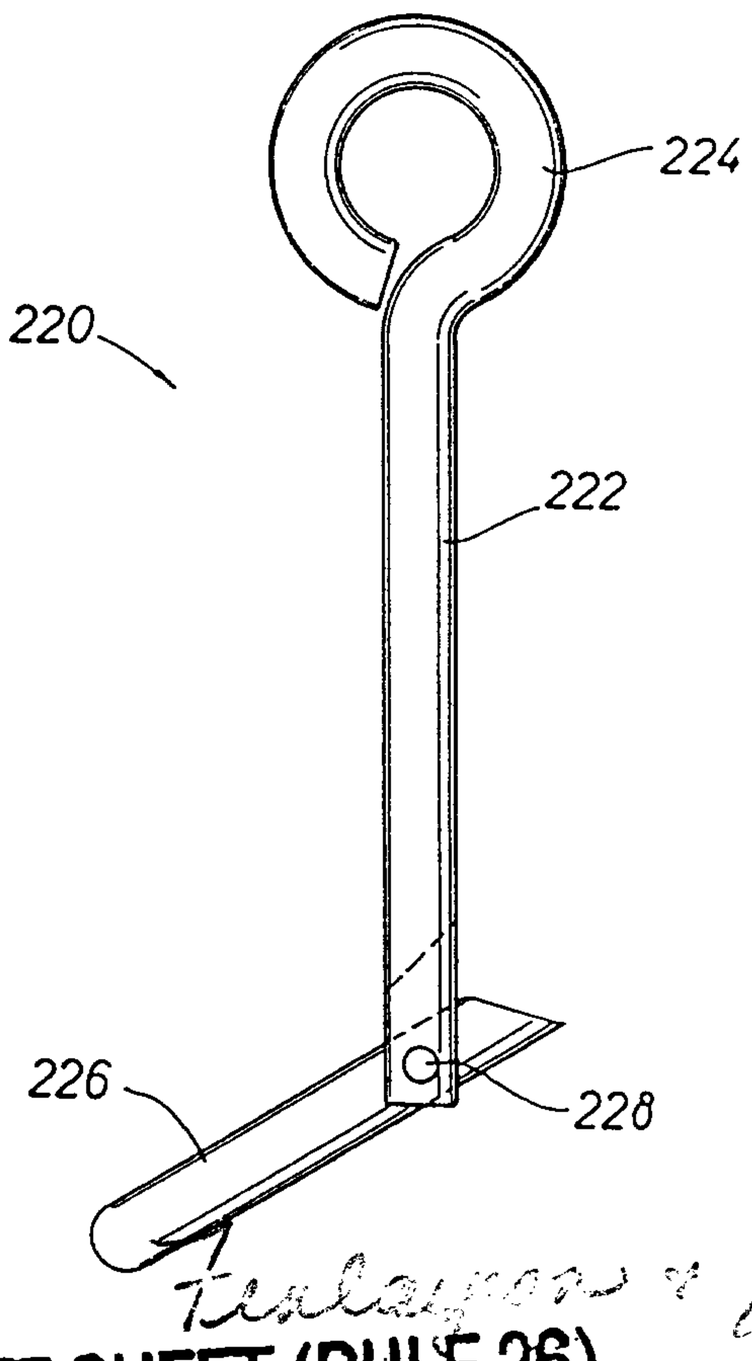


FIG. 7

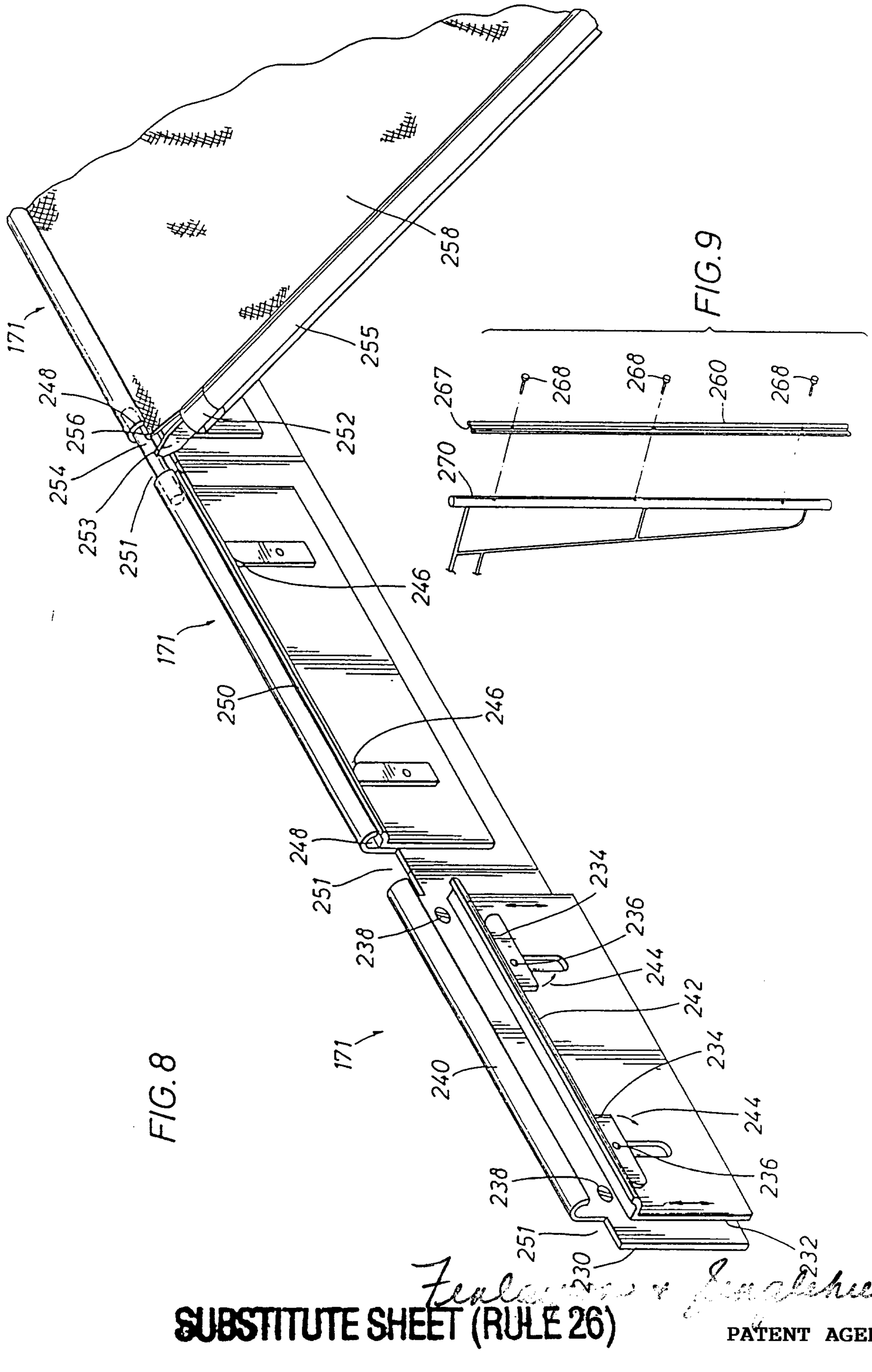


FIG. 8

FIG. 9

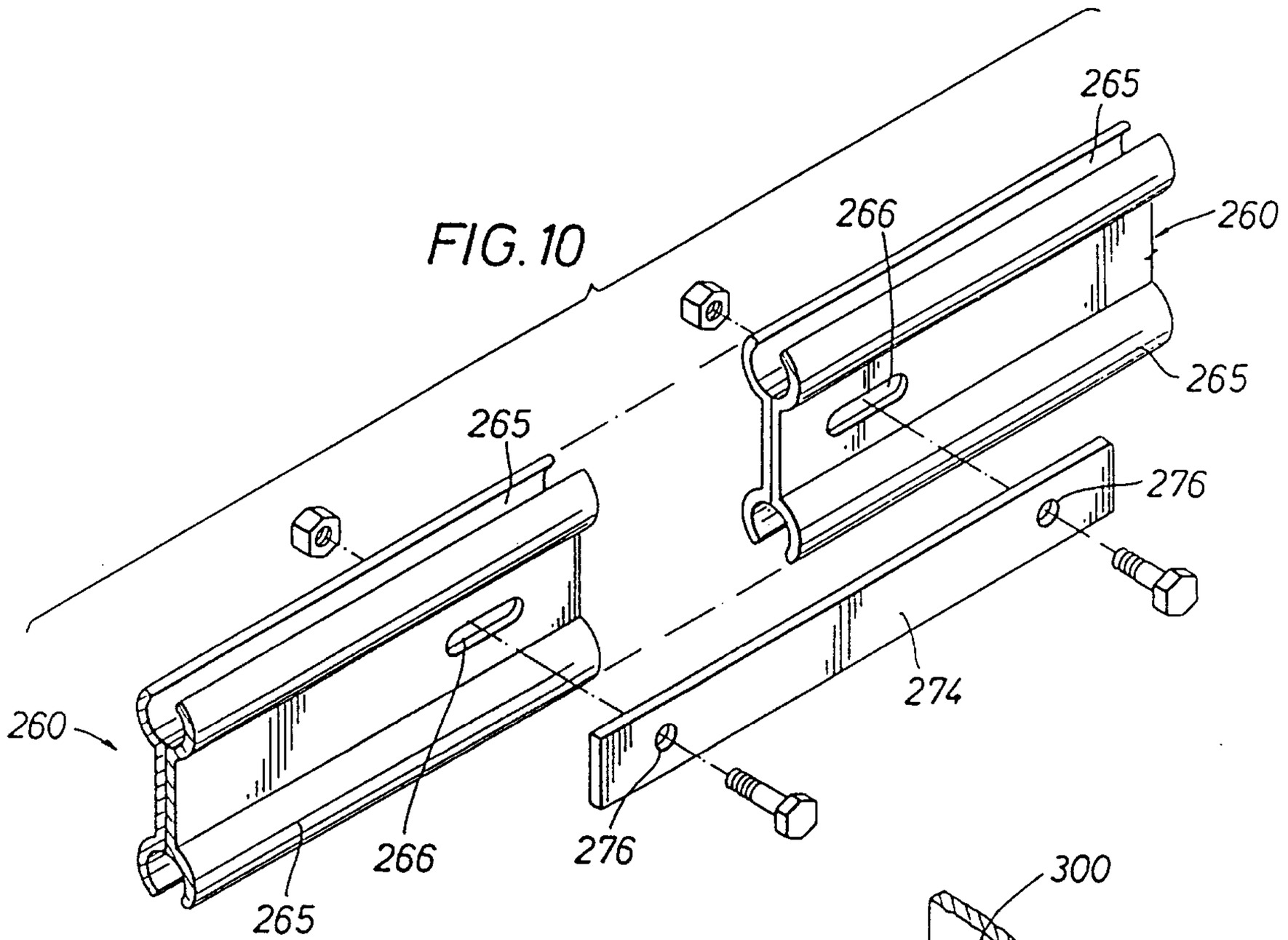


FIG. 10

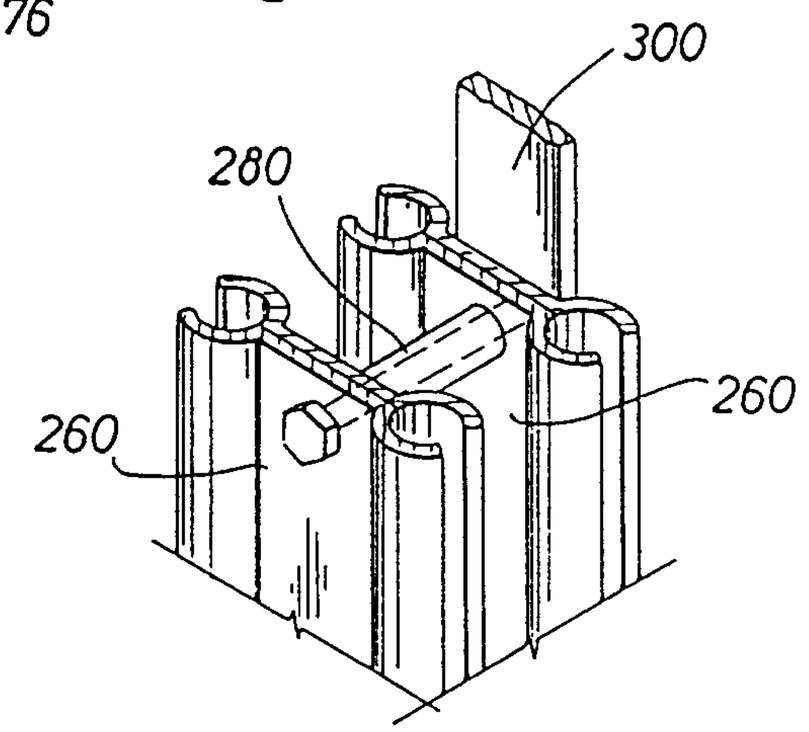


FIG.11B

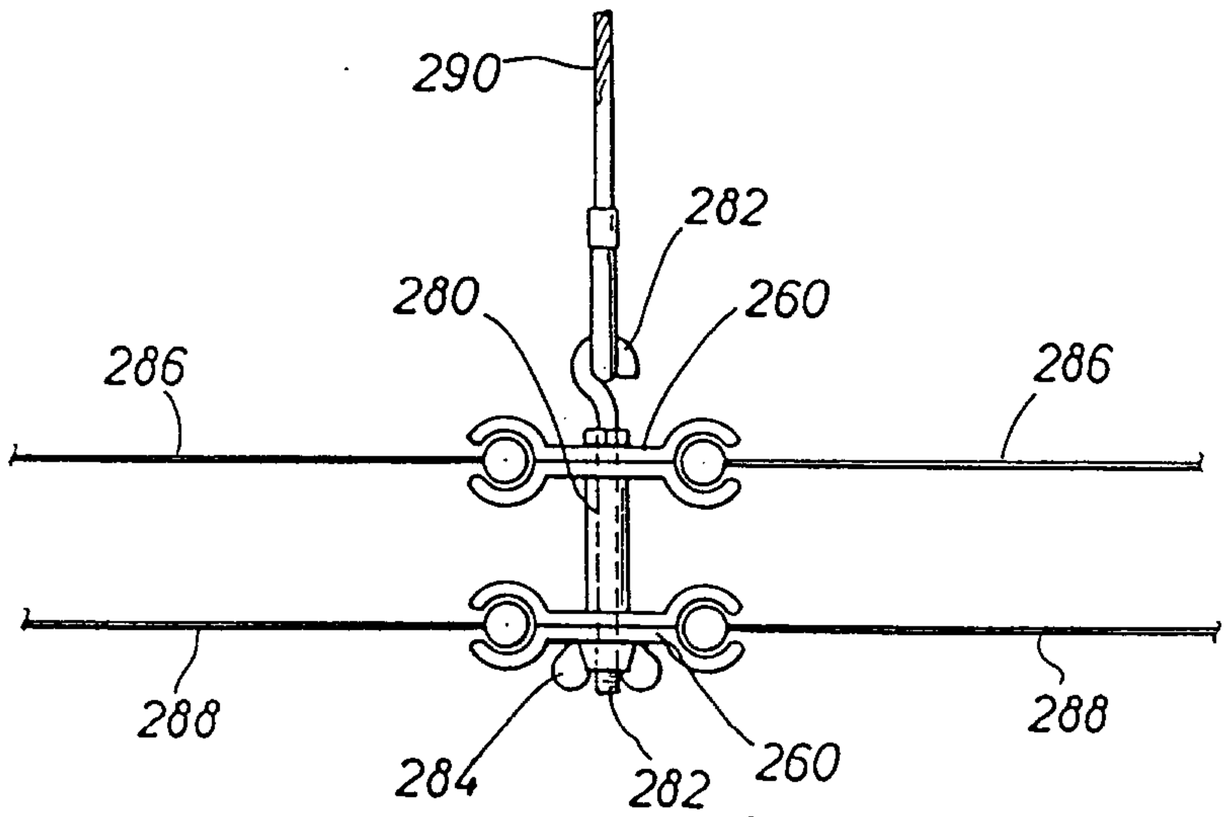


FIG.11A

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