(12) STANDARD PATENT APPLICATION (11) Application No. **AU 2012201848 A1**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
A Wall System

(51) International Patent Classification(s)
E04B 2/74 (2006.01) ***E04B 2/76*** (2006.01)

(21) Application No: **2012201848** (22) Date of Filing: **2012.03.29**

(43) Publication Date: **2013.10.17**
(43) Publication Journal Date: **2013.10.17**

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ABSTRACT

The present invention provides wall member 10 having a first frame 12,16,20 in which feet 22 are able to be assembled so the wall member10 can be free standing, the feet 22 being disassembleable from the frame 12,16,20.

FIGURE 2.

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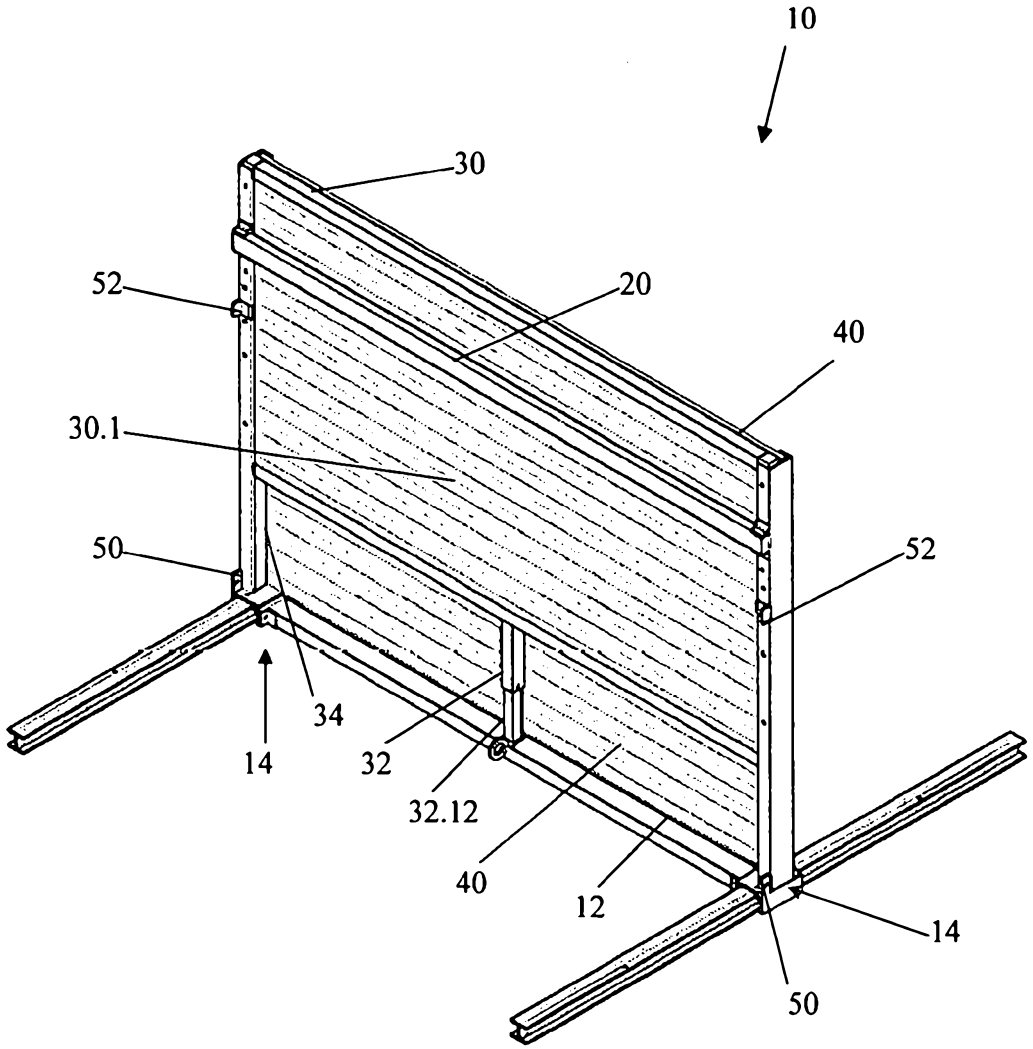

FIG 2

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A wall system

Field of the invention

[001] The present invention relates to wall systems for use with mining, industrial, commercial, sporting events, music events, etc, where a temporary wall is required. In particular the present invention relates to such wall systems that enable different height walls to be utilised. Generally, the main purpose of these walls is to assist with sound attenuation and as a visual block.

Background of the invention

[002] Wall systems are in ever increasing demand. Such wall systems can sometimes be called temporary wall systems due to the need to relocate them. As such, there is a need for better and more versatile systems than presently available.

[003] Any reference herein to known prior art does not, unless the contrary indication appears, constitute an admission that such prior art is commonly known by those skilled in the art to which the invention relates, at the priority date of this application.

Summary of the invention

[004] The present invention provides a wall member having a first frame in which feet are able to be assembled so the temporary wall member can be free standing, the feet being disassembleable from the frame.

[005] The frame member can include at least one wall panel.

[006] The wall panel can be any one, or a combination of two or more, of the following: sound attenuating; metal lined; made of polystyrene foam; constructed exclusively of metal; constructed from polymeric material; constructed from composite material; constructed from corrugated or other strengthened sheet material.

[007] The wall member can include spaced apart feet receiving formations.

[008] The formations can receive the feet by the feet sliding into them.

[009] The wall member can include sides made from channel shape or U-shape or C-shape members.

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[010] The sides can include at least one longitudinal recess to receive a stationary panel and a moving panel therein.

[011] A wall member as claimed in any one of the preceding claims wherein the stationary panel and the moving panel are separated by being in two distinct longitudinal recesses.

[012] The stationary panel and the moving panel can be in the same longitudinal recess with the moving panel able to slide over the stationary panel.

[013] The feet can include means to join the wall member to a like wall member.

[014] The wall member can include a base which will accommodate the feet thereon in a wall member lengthwise orientation, so that the envelope of the wall member and the feet is no greater than the wall member.

[015] The wall member can include a frame member which extends substantially the width of the wall member and is adapted for mounting a winch therefrom.

[016] A winch can be mounted to the wall member.

[017] The winch can be one of the following: removably mounted to the wall member; permanently mounted to the wall member.

[018] The moving panel can be mounted to a second frame.

[019] The moving panel can be of lesser height than the stationary panel.

[020] The second frame can include a downwardly extending portion such that the portion and the second frame of the moving panel are substantially the same as the height of the first frame.

[021] The moving frame can includes a downwardly extending portion at an intermediate location so as to connect a winch thereto and thereby to winch the moving frame to a different height.

[022] Once the feet are slidably engaged into the base of the first frame, the feet can be temporarily or located secured with respect to the frame by means of a pin.

[023] The feet and the first frame can be joined together by tensile struts for the purpose of providing vertical stability and/or securing the first frame to the feet.

[024] A single foot on each side of the frame can be utilised.

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[025] Two feet on either side of the frame can be utilised.

[026] A wall member as claimed in any one of the preceding claims wherein a winch is operable from a ground position.

[027] The winch can be one or more of the following: manually operable; electrically operable; pneumatically operable or hydraulically operable.

[028] Lifting lugs can be provided at the top regions of the wall member.

[029] The moving panel can include at a side region thereof an expandable portion which when clear of the sides of the first frame will project to the same extent as the outer surfaces of the first frame or beyond.

[030] The expansion means can be a rubber section or member.

[031] The sides can be constructed such that a space exists between the outer edges of the moving frame and an inner surface of the sides.

[032] The sides can include a guide member to help maintain the alignment of the moving panel when moving to relative to the sides.

[033] The guide can helps to reduce friction of the moving panel moving relative to the sides.

Brief description of the drawings

[034] An embodiment or embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

[035] Figure 1 illustrates a rear view of a wall member having an unextended height of 2.6 metres;

[036] Figure 2 illustrates a front side view of the wall of Figure 1;

[037] Figure 3 illustrates the wall of Figure 1 extended to a height of 3.6 metres;

[038] Figure 4 illustrates the wall member of Figure 1 extended to a height of 4.0 metres;

[039] Figure 5 illustrates the wall member of Figure 1 extended to a height of 4.4 metres;

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[040] Figure 6 illustrates the frame work of wall member of Figure 1, in perspective view;

[041] Figure 7 illustrates an exploded view of the lower right hand corner of the frame and legs;

[042] Figure 8 illustrates an assembled perspective view and exploded view of the feet at the base of the wall member;

[043] Figure 9 illustrates assembled feet receiving formations with a single beam to produce oppositely located feet;

[044] Figure 10 illustrates the feet receiving formation in front perspective view;

[045] Figure 11 illustrates an assembled corner and two feet to interact therewith;

[046] Figure 12 illustrates the wall of Figure 1 in transport mode;

[047] Figure 13 illustrates a detailed portion of the wall of Figure 12;

[048] Figure 14 illustrates a left side upright or vertical frame member;

[049] Figure 15 illustrates a plan view of the side of Figure 14;

[050] Figure 16 illustrates an exploded view of the side of Figure 14;

[051] Figure 17 illustrates a detailed perspective view showing the mounting arrangement between the bottom beam and foot;

[052] Figure 18 illustrates a partial front elevation of the frame of the wall member;

[053] Figure 19 illustrates a joint detail of the upper beam assembly;

[054] Figure 20 illustrates a front view of the upper beam;

[055] Figure 21 illustrates a side view of the upper beam;

[056] Figure 22 illustrates a winch for use with the wall member;

[057] Figure 23, 24 and 25 illustrate winch mounting arrangement and activation of the moving panel relative to the stationary panel;

[058] Figure 26 illustrates a partial view of the wall member of Figure 1 fully assembled showing lifting lugs and tensioning struts;

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[059] Figures 27 and 28 illustrate the front and rear of movable frame and panel;

[060] Figure 29 illustrates the frame of Figure 6, modified to include a winch assembly;

[061] Figure 30 illustrates a detail of the cross beam and winch of Figure 29;

[062] Figure 31 illustrates an internal winch mounting arrangement.

Detailed description of the embodiment or embodiments

[063] Illustrated in Figures 1 to 5 is a temporary wall member 10 which is formed from base 12, feet receiving formations 14 at either side of the base 12, a right side upright 16, a left side upright 16 which are joined together and held in spaced apart relationship by a front mounted crossbeam 20.

[064] The feet receiving formations 14 receive respective feet 22 which are in the form of I-beams which are slidingly received in the formations 14 so as to pass through those formations so that a portion of the feet 22 extend past the wall member 10 on either side of the formations 14.

[065] An aperture 24 located on the upper surface of the formation 14 is provided to allow a pin to pass through the aperture 24 and through an aligned hole (not visible) in the upper flange of the feet 22. Such a pin can be a bolt with a nut or just a simple pin without the need for securement can be utilised.

[066] As better illustrated from the front of the wall panel as illustrated in Figure 2, the wall member 10 includes a moving frame 30 and captured wall panel 30.1 the frame 30 of which is illustrated in more detail in Figures 27 and 28, whilst the rear has a full height stationary panel,.

[067] As is best illustrated in Figure 2 to 6, the moving frame 30 and panel 30.1 have a height which is a fraction, approximately three quarters, of the height of the panel 40.

[068] Extending downwardly from the frame 30 is a telescoping extension 32 and downwardly extending legs 34.

[069] Also visible in Figure 2 from the front of the wall member 10, are side lower joining plates 50 and upper joining plates 52 through which bolts can be passed so as to join like wall members 10 together at both a base location and an upper location.

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[070] It will be noted from Figures 1 and 2 that the upper cross member 20 is located at a distance below the upper edge of the stationary panel 40.

[071] As is better illustrated in Figure 26, two upper lifting lugs 60 are located at the upper reaches of the sides 16 to allow the wall member 10 to be attached at two locations per side to a lifting harness for the purposes of a crane to lift the wall panel into place.

[072] As best illustrated in Figure 26, a series of holes 62 are provided along the front face of the posts 16 whereby once the lower edge of the frame member 34 has passed a specified hole 62, a pin can be positioned in the hole 62 for the purpose of preventing the moving frame 30 from descending once a winch or lifting device is no longer bearing the weight of the moving frame 30.

[073] Also visible in Figure 26 is the extendable rubber side member 70 attached to the outer surface of the frame of the movable frame 30. More will be described about this later, however it is provided so that when adjacent wall panels 10 are placed side by side and the movable panel extended the joining member 30 can make contact with a like joining member. More will be discussed about this later.

[074] As is also illustrated in Figure 26, two tensionable struts 64 per side, formed from hooks or shackles or the like and having a cable between them and having at an intermediate location turn buckles 66. Firstly the wall panel 10 is based relative to the feet to provide additional strength thereby reinforcing the interconnection of the feet 22 to the formation 14, and second by such bracing will also assist in maintaining the leg 22 relative to the formation 14 in an immovable condition.

[075] The preferred lowered height of the wall member 10 as illustrated in Figure 2 and Figure 1 is approximately 2,600 millimetres. This height of 2,600 millimetres is selected as it is a height which would allow the carrying of the wall member 10 on a trailer for use on most roads; in order to meet the height restrictions of those roads.

[076] Illustrated in Figures 6 and 14 to 16 is the wall member 10 shown with the frame 30 and its associated panel 30.1 and the panel 40 removed. It can be seen that the side frame members 16 are made so that there are two channels 16.1 and 16.2 formed in the sides 16 with a central separating member 16.3 between the channels. It will be noted that the central member 16.3 terminates at 16.4 above the upper surface

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of the formations 14. It will also be noted that the central portion 16.3 has holes 16.5 therein, which are in alignment with the holes 62 on the outside of the post 16. A pin is passed through the holes 62 and into the hole 16.5 so that the pin is supported in an "end supported beam" fashion rather than in a cantilever fashion once the weight of the moving panel and its frame 30 are resting thereon.

[077] As is better illustrated in Figures 14 through to 16, the central portion 16.3 is formed by the location of a length of angle 16.6 and welding same or securing same to the post 16 inside the main channel of the post 16. As is best seen in Figure 15, another longitudinal member 16.7 also an angle formed at 90° is welded to the inside of the channel at one side of the channel 16.1.

[078] As is illustrated in Figure 15 this leaves a space 16.8 into which the silicone rubber or rubber joining member 70 which is attached to the outer edge of the frame 30 can be squashed into this space as the panel 30 moves downward relative to the sides 16.

[079] The central portion 16.3 serves the function of keeping the peripheries of the frame 30 and panel 40 from making contact with each other in the course of their relative movement. The guide 16.7 also serves to assist the panel 30 in guided movement up and down the sides 16 and in the channel 16.1 but also assists to reduce the side friction by providing a relatively thin line of material on the apex of the guide 16.7 which will engage the side surface of the frame 30.

[080] If desired, if the central portion 16.3 were not used, the forward surfaces of the panel 40 can be suitably constructed so that the rearward faces of the frame 30 which may make contact with the forward faces of the panel 40 will be able to do so for the service life of the wall member 10 without damaging each other. For example, these might be provided with wear resistant surfaces or bearings and in this situation the central portion 16.3 could be removed. Further in this situation the pins passing through apertures 62 would be designed to operate in a cantilever fashion unlike the supported beam fashion of the current figures. In other words, the channel 16.1 to receive the slidably movable panel 30 can be formed, instead of by means of the central portion 16.3, by means of the outer forward surfaces of the frame around the panel 40, or by the panel 40 itself.

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[081] It will be noted from Figure 5 where the movable frame 30 is at its highest possible location relative to the stationary panel 40, that the leg 34 of the frame 30, which is approximately 600 millimetres in length, will have sufficient length remaining inside the channel 16.1 whereby sufficient structural rigidity of the movable panel 30 relative to the side 16 is achieved.

[082] As is illustrated in Figures 12 and 13, when the telescopic member 32 is retracted, as the feet 22 are of a length to sit within the width measured between the inboards edges of the sides 16, the feet 22 will nest readily on top of the base beam 12 so that a crane can lift the member 10 by means of lifting eyes 60 (see Figure 26), thereby the wall member 10 and its feet 22 can be loaded on a truck and moved to the next location relatively simply. Because the feet 22 sit within the plan profile of the wall member 10, or within its footprint or its envelope, a truck will be able to stack wall members 10 side by side without the feet 22 interfering in the location of one wall member with respect to another. If desired, holes can be provided through the feet 22 and the beam 12 so that when they are juxtaposed as in Figures 12 and 13, a vertical pin can be passed through to locations along the length of the feet 22 so that the feet 22 will not move relative to the frame of the member 10. If desired, holding hooks consisting of L shaped members can be welded to the plate 12 for the purpose of preventing the feet 22 from moving out of alignment with the base frame member 12 of wall member 10 during transport.

[083] As illustrated in Figure 15 around the apertures 62 is welded a nut 62.1 which has a thread therein. Alternatively, the aperture 62 through the front face of side 16 could be threaded so as to receive a threaded pin, such as a pin having a portion to be received and screwed into the threads previously mentioned, and a turned down cylindrical portion to pass through the threaded portion without having to rotate it and so that it will sit inside the aperture 16.5. Such an arrangement would ensure that the pins would not fall due to ground vibration or movement of vehicles and operation of machinery.

[084] As illustrated in Figure 8, the formation 14 is constructed from six plates. Plate 14.1 which constitutes a side plate and provides the joining location 50. An upper plate 14.2 which includes a recess 14.3 so that the portion 50.1 of side plate 14.1 will sit therein and have an edge which is flush. An inner plate 14.4 is provided and two separator plates 14.5 and 14.6 which are secured respectively to the plates 14.1 and

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14.4 so as to form a shaped recess which will receive the upper horizontal flange of an I-beam and a part of the vertical web of the I-beam from which the feet 22 are formed.

[085] The arrangement of Figure 8 shows the preferred arrangement whereby the formation 14 will have a single foot 22 of I-beam construction pass all the way through from one side of the formation 14 to the other. The upper plate 14.2 also includes apertures 14.21 and 14.22 for the purposes of receiving a vertical pin to pass through an aligned hole in the feet 22.

[086] As is best seen in Figures 9, 10 and 17, the section 50.1 sits flush with the outer outboard face of the side 16 and the rest of the plate 14.1. This ensures that a like constructed wall member 10 will leave little to no gap between adjacent wall members 10 when bolts are secured through the respective apertures 50.

[087] Illustrated in Figure 7 is an exploded view of the components forming the formations 14 and feet 22. It will be noted in Figure 7 that two feet 22 are utilised, whereas in previous figures a single foot 22 would pass all the way through the formation 14. The formation 14 of Figure 7 differs from the formation 14 of Figure 8 in that the plates 14.6 and 14.5 include an additional stop 14.8 on an upper surface thereof so that the feet 22 when pushed into the formation 14 will not go past a predetermined location. In Figure 11 which shows the formation 14 in its final state, it is ready to receive the feet 22. The apertures 14.23 and 14.24 in the inboard side of the formation 14 through plate 14.4, as is best seen in Figure 7 and in Figure 17, allow angle plates 12.1 and 12.2 to be secured to the plate 14.4 thus providing a location to secure the beam 12 to the plates 12.2 and 12.1.

[088] As is illustrated in Figure 18, it can be seen that the plate 14.1 and the outboard face of side 16 are in an aligned or flush arrangement.

[089] As is illustrated in Figures 19, 20 and 21, a similar arrangement to the bottom beam 12 is utilised to secure the top beam 20 to the forward side 161 of the side 16.

[090] As is illustrated in Figure 22, a winch assembly 100 can be used with the wall member 10 of the previous figures.

[091] The winch 100 has a crank handle 102 and a capstan 104 which includes a ratchet mechanism and can ratchet in either the up or down direction. Extending from the capstan 104 is an elongated body portion 106 on the end of which is a mounting

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hook 108 which will allow the winch 100 to hook over the upper surface of the upper beam 20 of the wall member 10. Also at the top of the elongate body 106 is a top roller 110 which allows the cable 112 from the capstan 104 to pass through approximately 180° so that the hook 114 can engage the eyelet 32.1 on the end of the telescopic portion 32.12 of the telescopic post 32. The telescopic portion 32.12 can be secured to the stationary portion of the extension 32 by means of a bolt or a pin. With the telescopic portion 32.12 being extended this provides the greatest range of movement of the frame 30 with respect to the sides 16. As is illustrated in Figure 23 the point of operation, namely the handle 102, is at a relatively low location so that most operators will be able to rotate the handle 102 at a mid height of that operator's height.

[092] One of the advantages of the wall member 10 is that all operations in respect thereto including attachment of lift harnesses to the eyelets 60 (see Figure 26), attachment of the cable struts 64 to the respective eyelets, the operation of the winch can all be done whilst operators are at ground level so that once ready the frame 30 can be translated to its maximum height or any desired height as required by a user.

[093] Whilst a separate and readily deployable winch 100 is illustrated, other systems of winching can be utilised so as to move the panel 30 relative to the sides 16. For example an inbuilt winching system such as that illustrated in figures 29 or 31 (as will be described in more detail below) whereby cables are routed through the stationary panel 40 to a winding location inside the beam 12 or cross beam 20, where a capstan can be located and mounted so that a simple crank arm such as those utilised with lifting jacks can be interconnected to a rotating eyelet so as to lift and lower the frame 30 relative to the panel 40. Such a system can result in the removal of the need of the extension 32 and telescopic portion 32.12, as such cabling can be made to travel inside the channels 16.1 and 16.2 and permanently connect to the base locations of the panel 30. By this means, a full lifting movement can be applied to the panel 30.

[094] Further, by use of an internal cable and winching system the height of the panel portion of the movable frame and panel 30 can actually be increased due to dispensation of the telescopic portion 32, potentially giving further height capability, however this has to be balanced with the need to maintain approximately 600mm of the side frame of the movable frame 30 within the channel 16.1 at the upper limit of movement of the panel 30 with respect to the channel 16.1.

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[095] An advantage of the embodiments is that along the length of a semitrailer it is expected that approximately three racks of these wall members 10 can be mounted with each rack containing some eight or nine wall members 10. Thus on a single truck, approximately 24 units can be located or 86 lineal metres of wall members. When this is factored to the maximum height extension of 4.4 metres, this equates to approximately 360m² of wall of a temporary nature. The approximate length from the outboard surface of side 16 to the other side 16 is approximately 3.6 metres and having maximum height being able to vary from 2.600 to 3.200 to 3.600 to 4.000 to 4.400 millimetres provides a relatively versatile wall member.

[096] Further, once the wall members have been placed in the appropriate location, they can be extended and locked off by a single person. This also provides the advantage that none of the operators need work from heights. Another advantage of the wall member described above is that it can be used in relatively high wind areas and if desired, for example to surround mining operations or the like, it can be extended to its full height of 4.4 metres, however, at the end of the work day if required, due to high winds and other issues, the movable panel 30 can be lowered to a lower height and yet provide suitable security against wandering intruders, and yet provide less of an area for the high wind conditions.

[097] Illustrated in figures 29 and 30 is a winch arrangement which can be built in to the cross beam 20 of the frame, to connect directly to the moveable frame 30, and would utilise a worm gear arrangement so that the need for a ratchet is removed. Due to the use of a worm gear, the winch will require manual application of power in both an up and a down direction.

[098] The capstan 200 can be mounted internally of the beam 20 as illustrated in figure 30, and operators will utilise a long open eyelet drive rod with crank to rotate the drive point 202.

[099] In the illustrations of figures 29 and 30 the capstan is mounted so that its rotation axis is generally parallel to the longitudinal axis of the cross beam 20. If desired the winch and capstan 200 of figures 29 and 30 could be mounted on the outside of the beam 20, whether at an inboard or an outboard location thereon, depending upon how far out from the sides 16, that the beam 20 is mounted to provide space from the inboard side of beam 20 and the moving panel 30.1 and its frame 30.

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[0100] Illustrated in figure 31 is another inbuilt winch system which has winch 300 mounted to base beam 12, and is located in the beam 12. The winch 300 will have its capstan mounted so that its rotation axis is generally perpendicular to the longitudinal axis of the base beam 12.

[0101] Cables 306 wrapped around the capstan of this winch 300, extend outwardly inside the beam 12 and pass around base pulleys 302 and up to top pulleys 304 by passing through the stationary panel 40 or its associated channel 16.2, and over the top pulley 304 down the channel 16.1 (in which moveable frame 30 slides) to its end 306, which is secured to a lower portion of the movable frame 30, where it is secured.

[0102] By winch 300 being worm gear driven, a relatively safe internal winch system is provided. However, if desired the cables and pulleys and winch can be externally mounted, or some components internally mounted while other components externally mounted. Internal mounting offers the advantage of protecting the components, particularly when wall members 10 are being transported, and ensures that cables etc do not get caught up in lifting or assembly operations.

[0103] Preferably the panels are pre-coated or coloured so as to be of a "bushland green" colour so as to allow an aesthetically pleasing final installation for local residents. The panels are also preferably made from composite corrugated steel panel which can include polystyrene cores so that sound attenuation can result from the use of such wall members.

[0104] Where ever it is used, the word "comprising" is to be understood in its "open" sense, that is, in the sense of "including", and thus not limited to its "closed" sense, that is the sense of "consisting only of". A corresponding meaning is to be attributed to the corresponding words "comprise", "comprised" and "comprises" where they appear.

[0105] It will be understood that the invention disclosed and defined herein extends to all alternative combinations of two or more of the individual features mentioned or evident from the text. All of these different combinations constitute various alternative aspects of the invention.

[0106] While particular embodiments of this invention have been described, it will be evident to those skilled in the art that the present invention may be embodied in other specific forms without departing from the essential characteristics thereof. The

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present embodiments and examples are therefore to be considered in all respects as illustrative and not restrictive, and all modifications which would be obvious to those skilled in the art are therefore intended to be embraced therein.

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Claims

1. A wall member having a first frame in which feet are able to be assembled so the wall member can be free standing, the feet being disassembleable from the frame.

2. A wall member as claimed in claim 1 wherein the frame member includes at least one wall panel.

3. A wall member as claimed in claims 1 and 2 wherein the wall panel can be any one or a combination of two or more of the following: sound attenuating; metal lined; made of polystyrene foam; constructed exclusively of metal; constructed from polymeric material; constructed from composite material; constructed from corrugated or other strengthened sheet material.

4. A wall member as claimed in any one of the preceding claims wherein the wall member includes spaced apart feet receiving formations.

5. A wall member as claimed in any one of the preceding claims wherein the formations receive the feet by the feet sliding into them.

6. A wall member as claimed in any one of the preceding claims wherein the wall member includes sides made from channel shape, U-shape or C-shape members.

7. A wall member as claimed in any one of the preceding claims wherein the sides include at least one longitudinal recess to receive a stationary panel and a moving panel therein.

8. A wall member as claimed in any one of the preceding claims wherein the stationary panel and the moving panel are separated by being in two distinct longitudinal recesses.

9. A wall member as claimed in any one of the preceding claims wherein the stationary panel and the moving panel are in the same longitudinal recess with the moving panel able to slide over the stationary panel.

10. A wall member as claimed in any one of the preceding claims wherein the feet include means to join the wall member to a like wall member.

11. A wall member as claimed in any one of the preceding claims wherein the wall member includes a base which will accommodate the feet thereon in a wall member

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lengthwise orientation, so that the envelope of the wall member and the feet is no greater than the wall member.

12. A wall member as claimed in any one of the preceding claims wherein the wall member includes a frame member which extends substantially the width of the wall member and is adapted for mounting a winch therefrom.

13. A wall member as claimed in any one of the preceding claims wherein a winch is mounted to the wall member.

14. A wall member as claimed in any one of the preceding claims wherein the winch is one of the following: removably mounted to the wall member; permanently mounted to the wall member.

15. A wall member as claimed in claim 7 wherein the moving panel is mounted to a second frame.

16. A wall member as claimed in claim 7 or 15 wherein the moving panel is of lesser height than the stationary panel.

17. A wall member as claimed in claims 15 and 16 wherein the second frame includes a downwardly extending portion such that the portion and the second frame of the moving panel are substantially the same as the height of the first frame.

18. A wall member as claimed in any one of the preceding claims wherein the moving frame includes a downwardly extending portion at an intermediate location so as to connect a winch thereto and thereby to winch the moving frame to a different height.

19. A wall member as claimed in any one of the preceding claims wherein once the feet are slidably engaged into the base of the first frame, are temporarily secured to the frame by means of a pin.

20. A wall member as claimed in any one of the preceding claims wherein the feet and the first frame are joined together by tensile struts for the purpose of providing vertical stability and/or securing the first frame to the feet.

21. A wall member as claimed in any one of the preceding claims wherein a single foot on each side of the frame is utilised.

22. A wall member as claimed in any one of claims 1 to 20 wherein two feet on either side of the frame are utilised.

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23. A wall member as claimed in any one of the preceding claims wherein a winch is operable from a ground position.

24. A wall member as claimed in any one of the preceding claims wherein the winch is one or more of the following: manually operable; electrically operable; pneumatically operable or hydraulically operable.

25. A wall member as claimed in any one of the preceding claims wherein lifting lugs are provided at the top regions of the wall member.

26. A wall member as claimed in any one of the preceding claims wherein the moving panel includes at a side region thereof an expandable portion which when clear of the sides of the first frame will project to the same extent as the outer surfaces of the first frame or beyond.

27. A wall member as claimed in any one of the preceding claims wherein the expansion means is a rubber section.

28. A wall member as claimed in any one of the preceding claims wherein the sides are constructed such that a space exists between the outer edges of the moving frame and an inner surface of the sides.

29. A wall member as claimed in any one of the preceding claims wherein the sides include a guide member to help maintain the alignment of the moving panel when moving to relative to the sides.

30. A wall member as claimed in any one of the preceding claims wherein the guide helps to also reduce friction of the moving panel moving relative to the sides.

31. A wall member being substantially as hereinbefore described with reference to the figures of the accompanying drawings.

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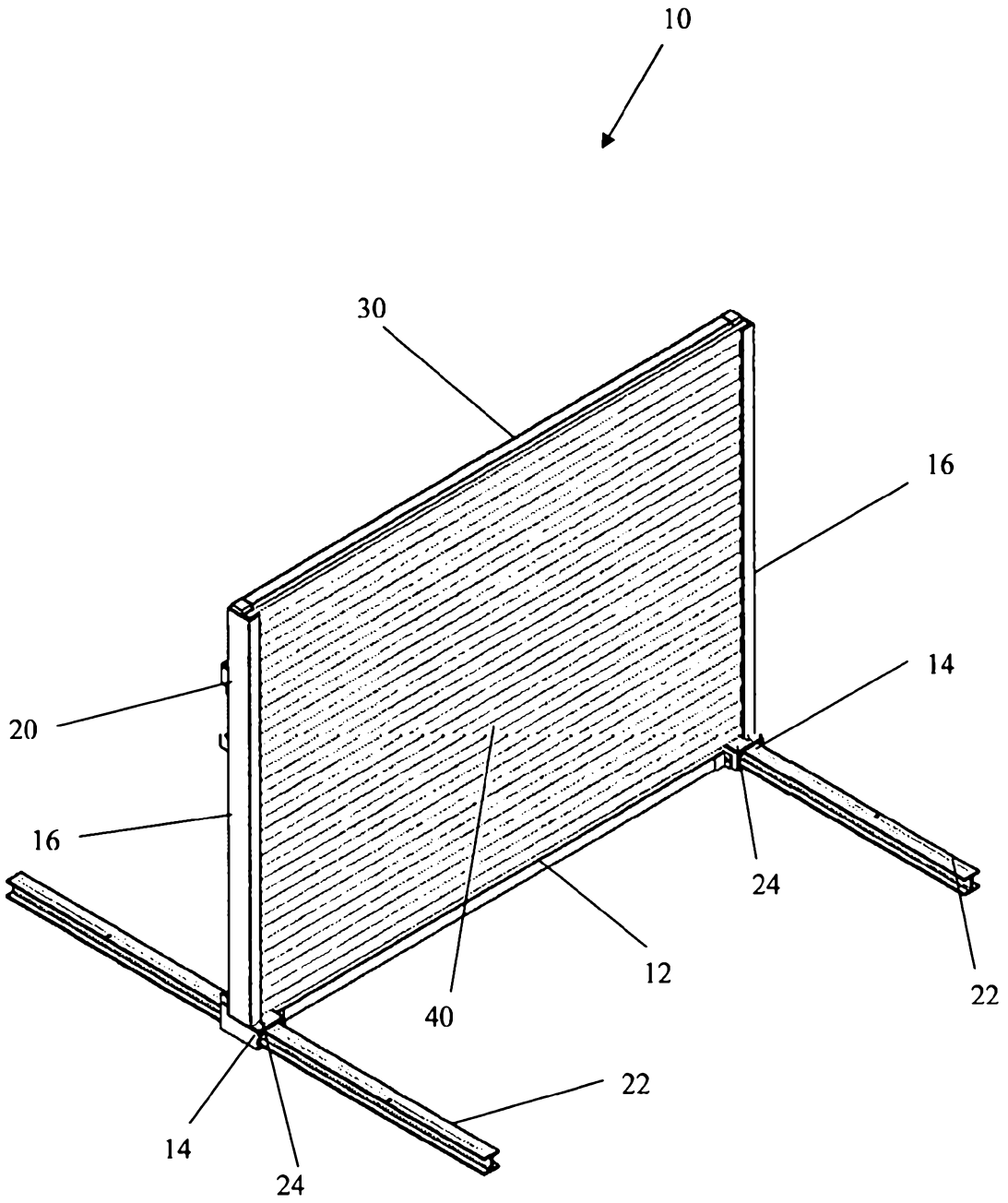

FIG 1

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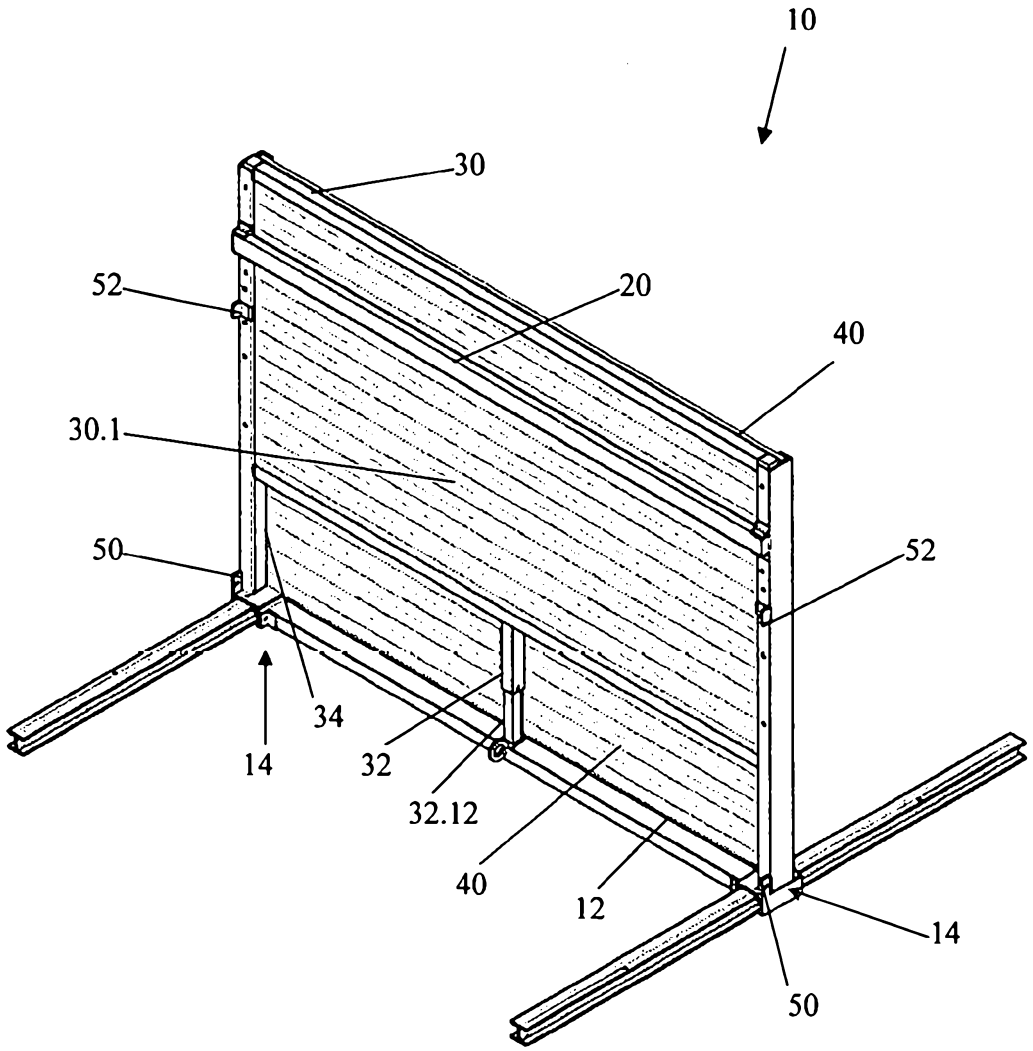

FIG 2

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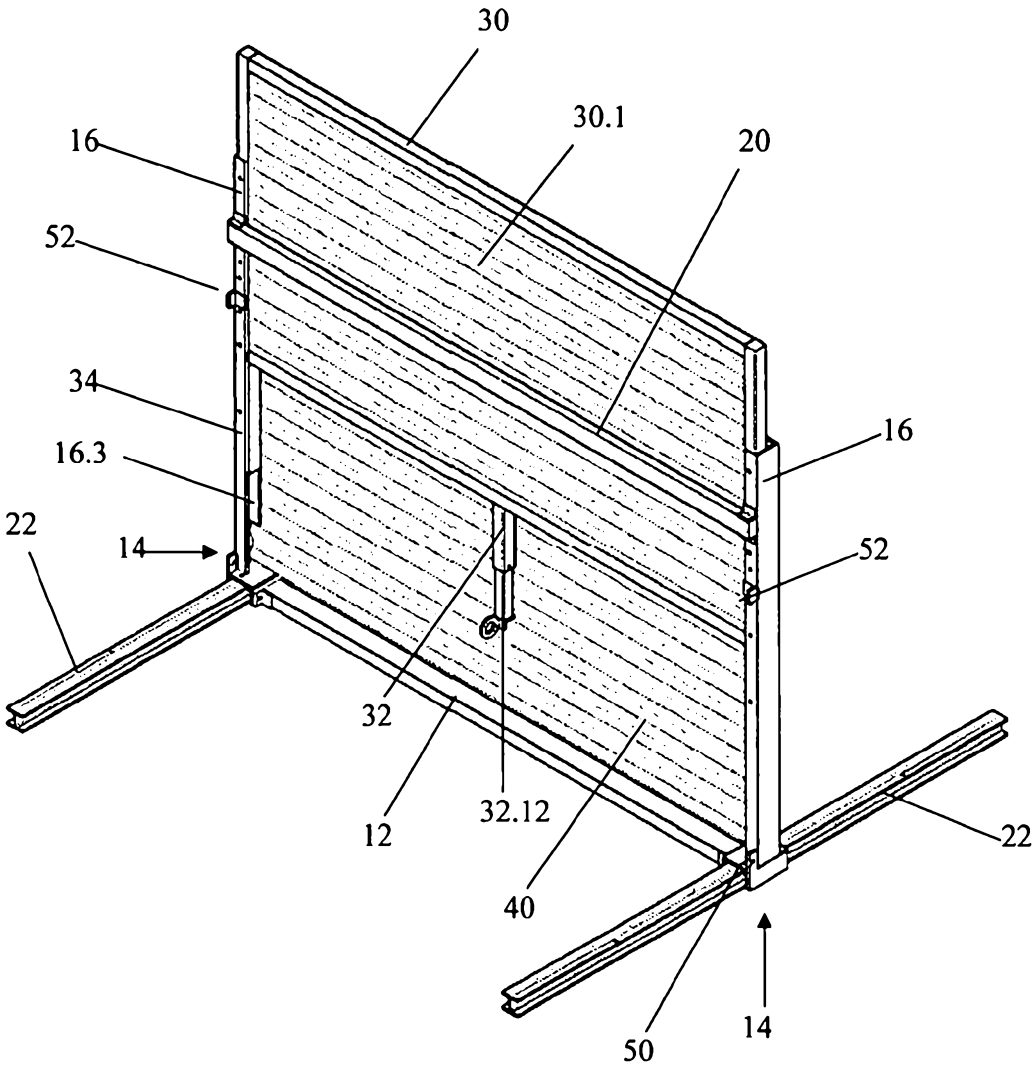

FIG 3

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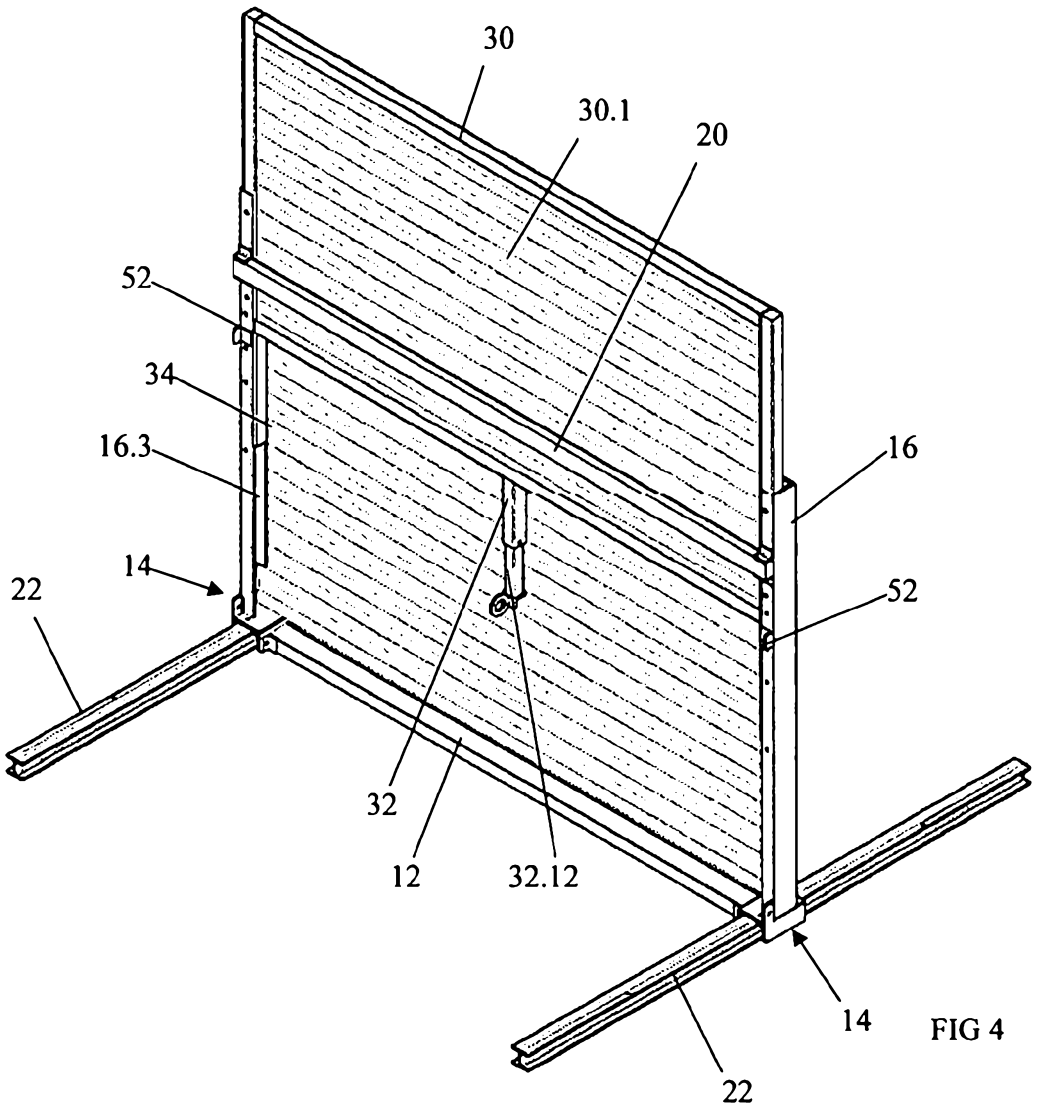

FIG 4

2012201848 29 Mar 2012

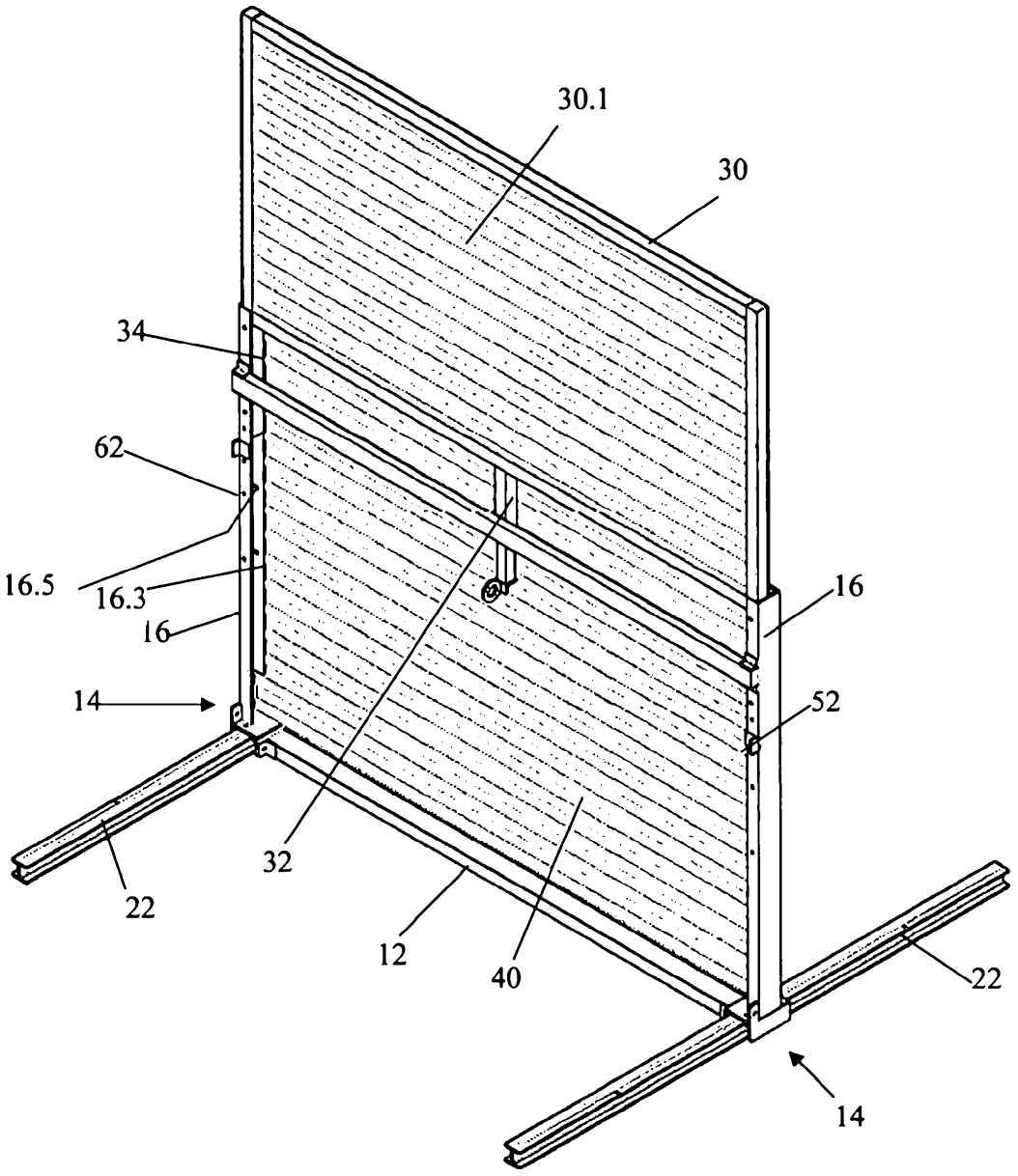

FIG 5

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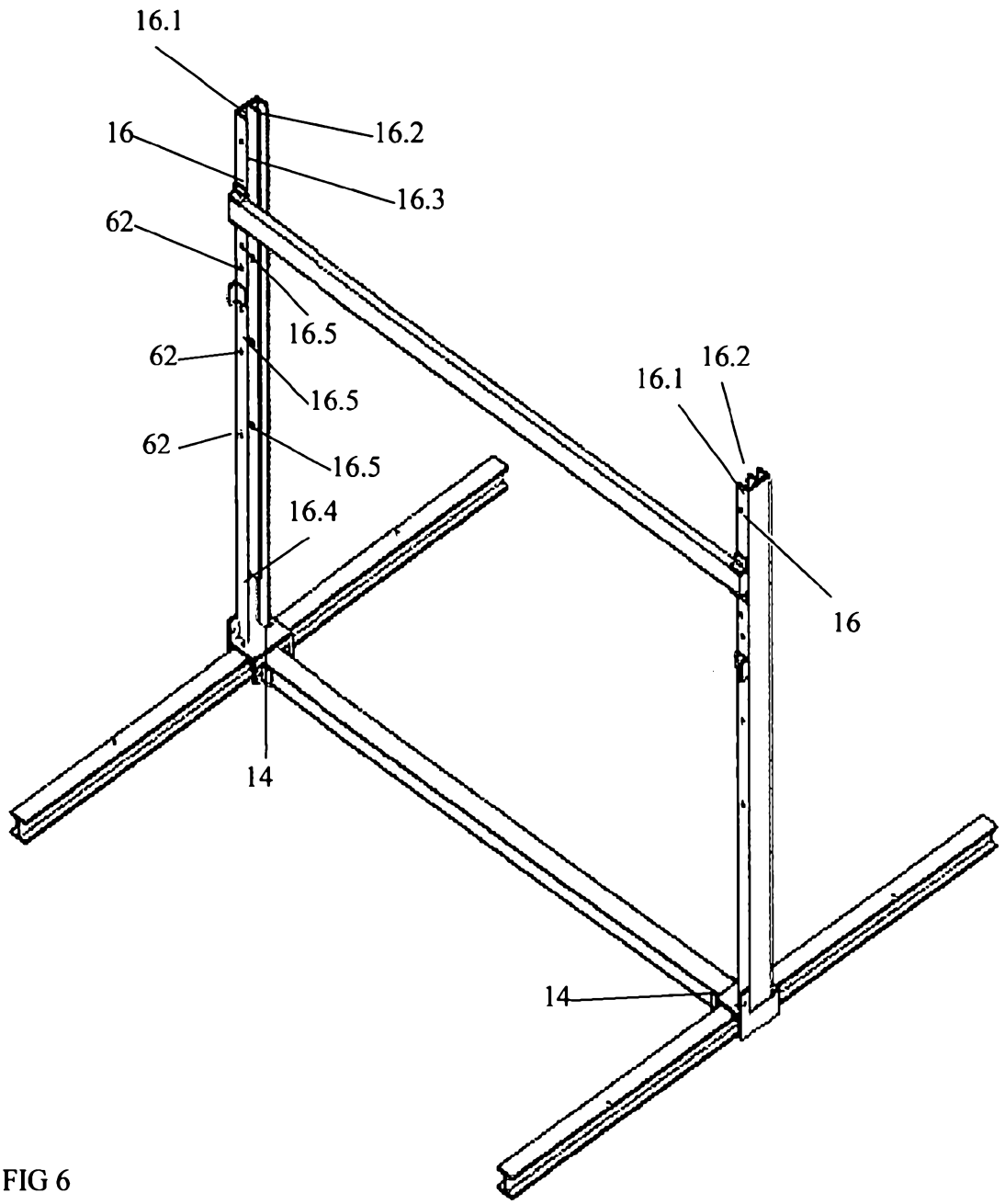

FIG 6

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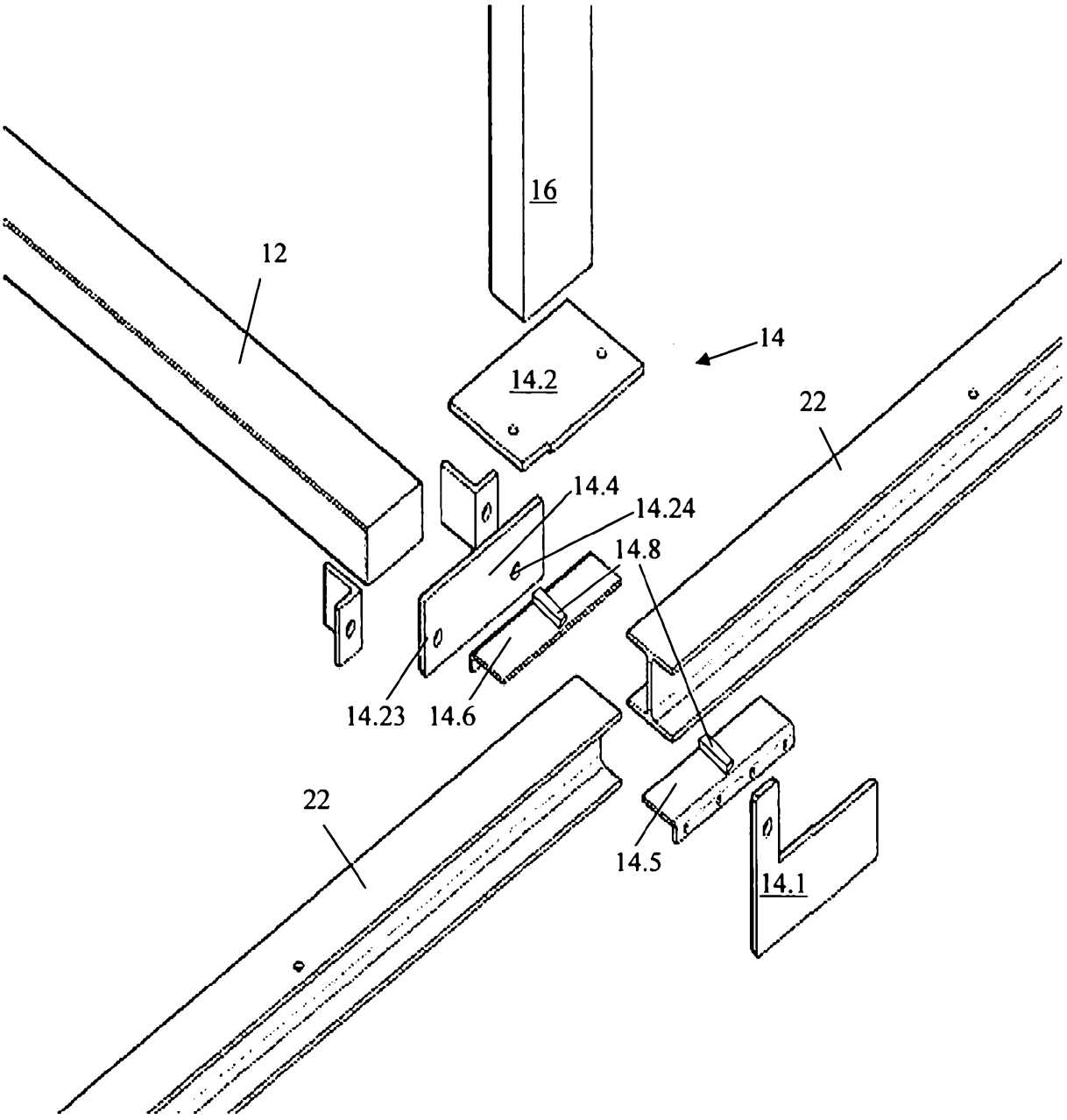

FIG 7

2012201848 29 Mar 2012

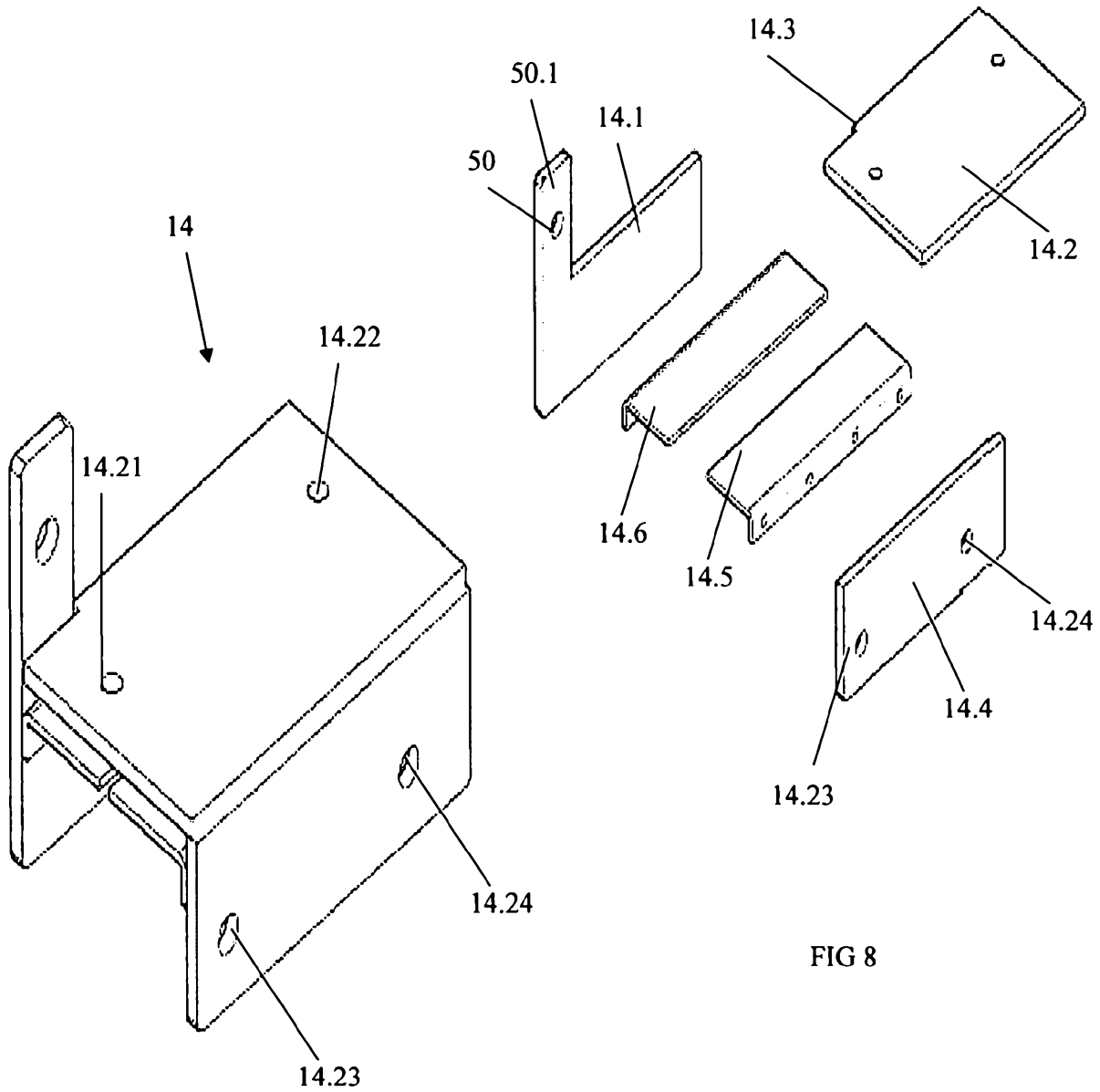

FIG 8

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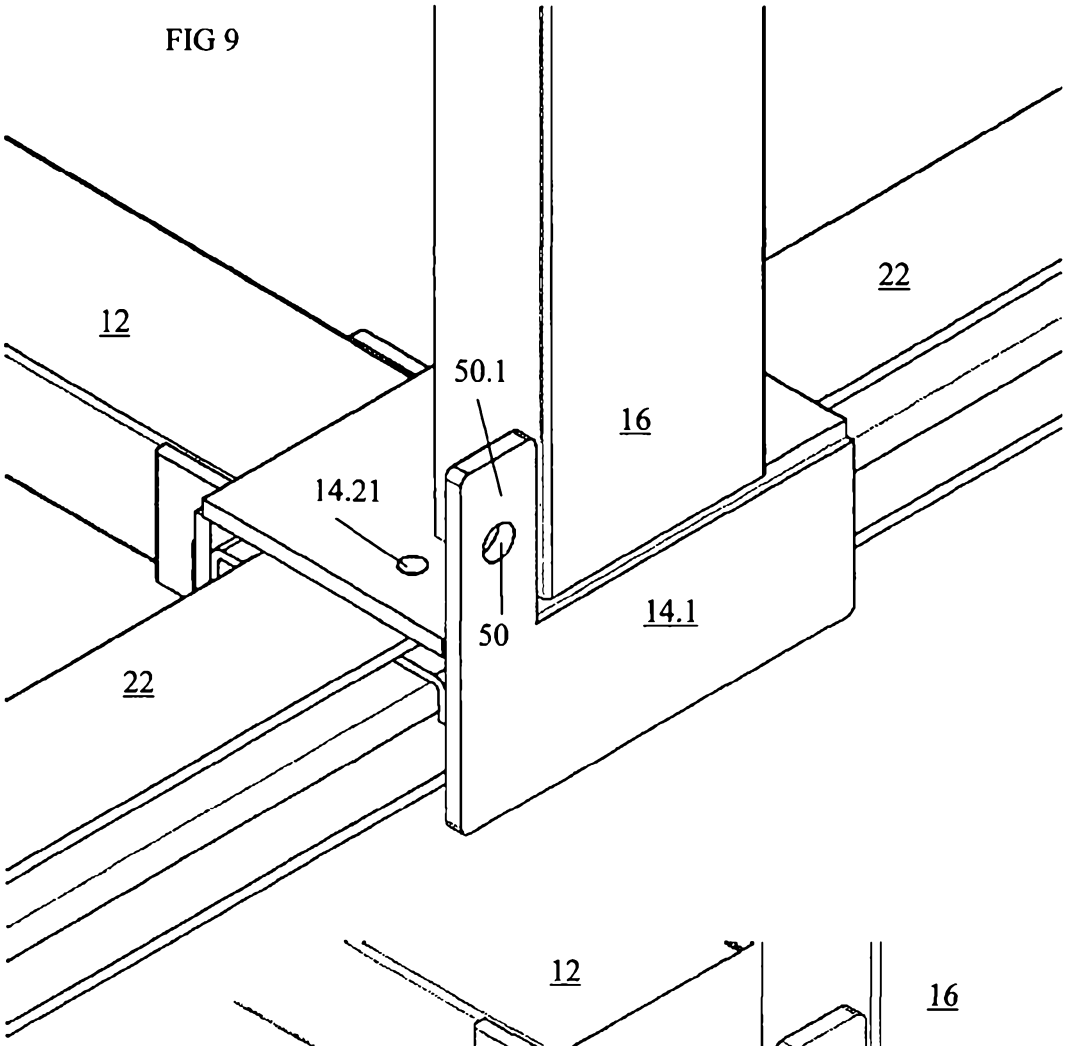
FIG 9



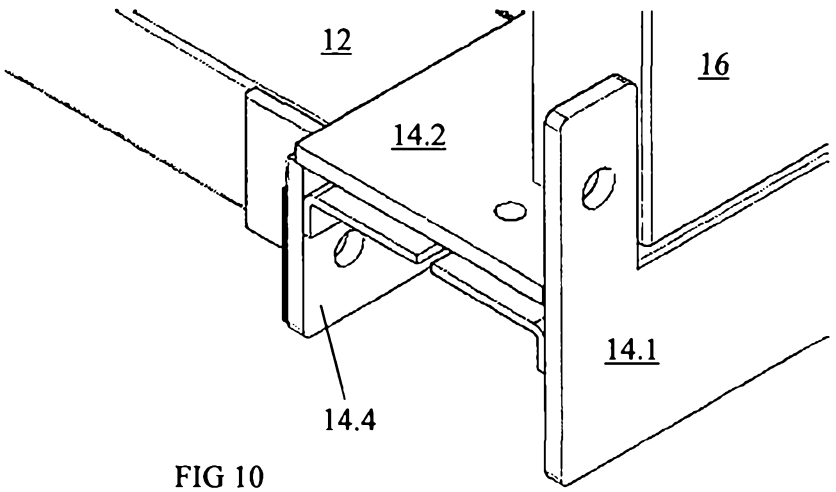


FIG 10

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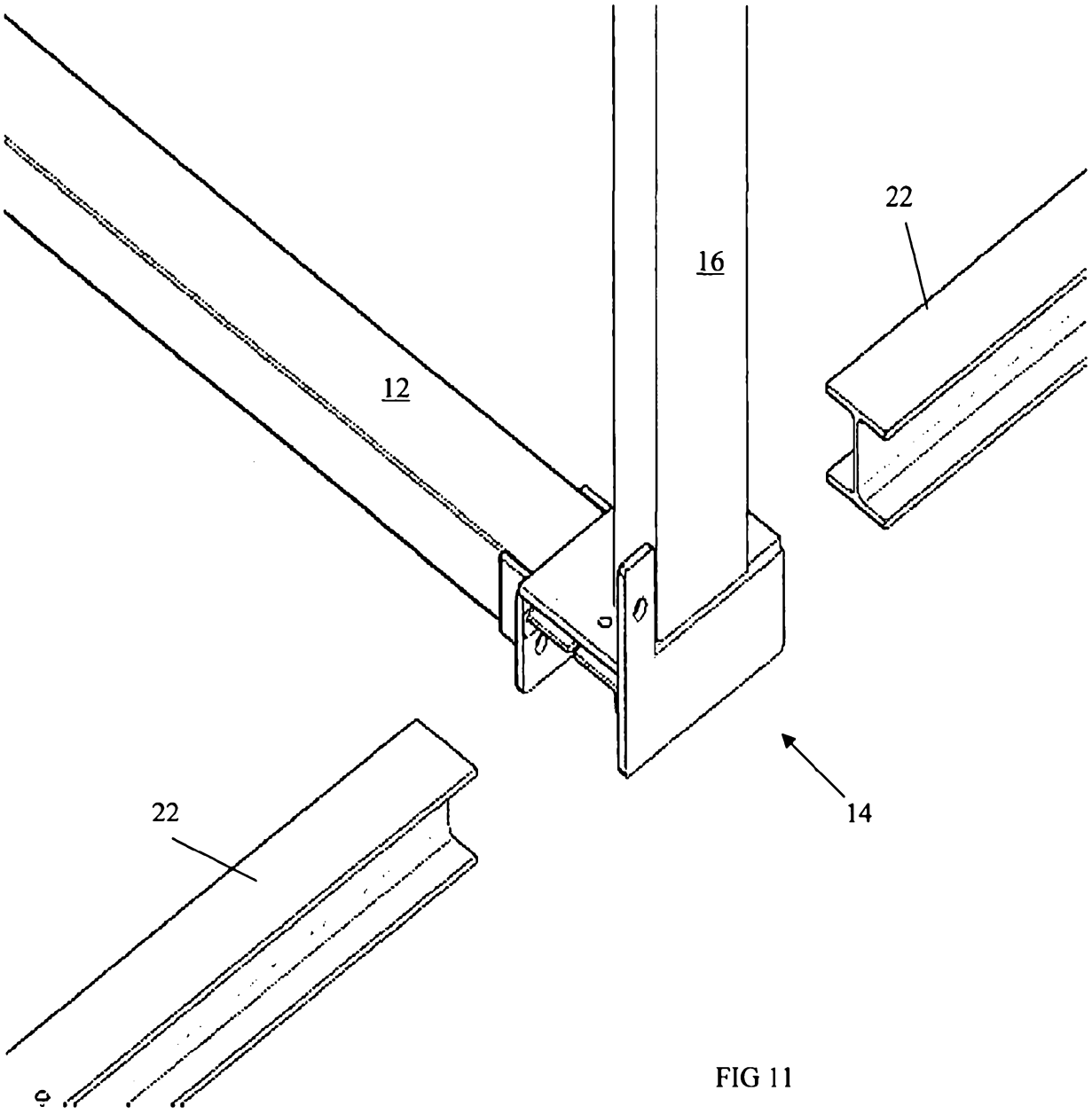

FIG 11

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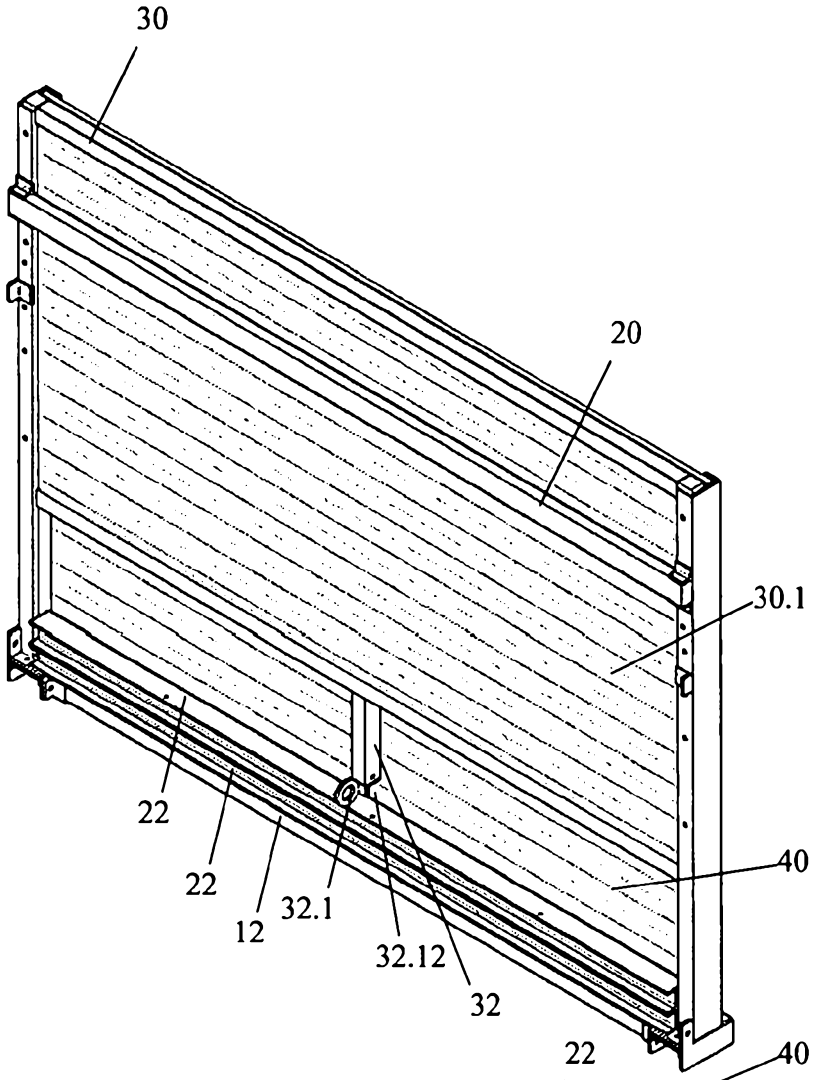

FIG 12

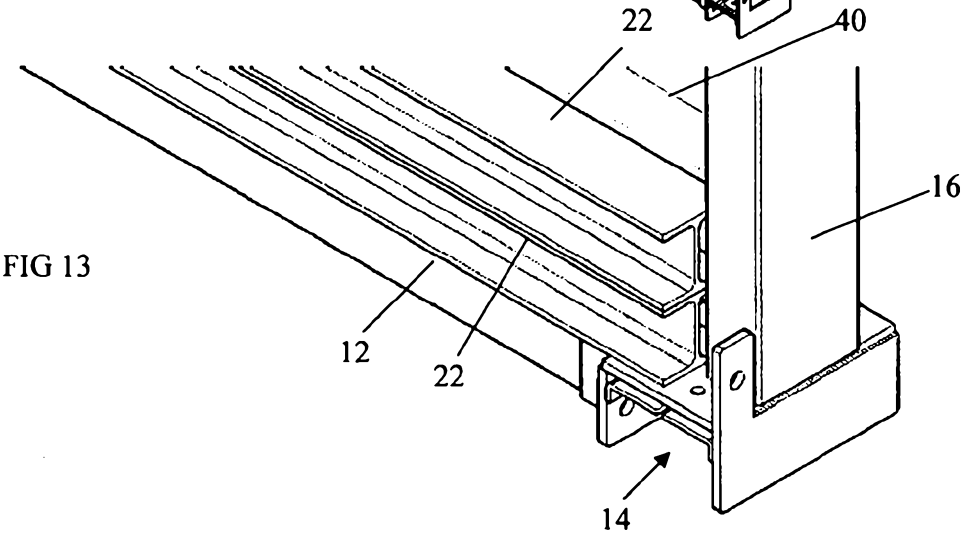

FIG 13

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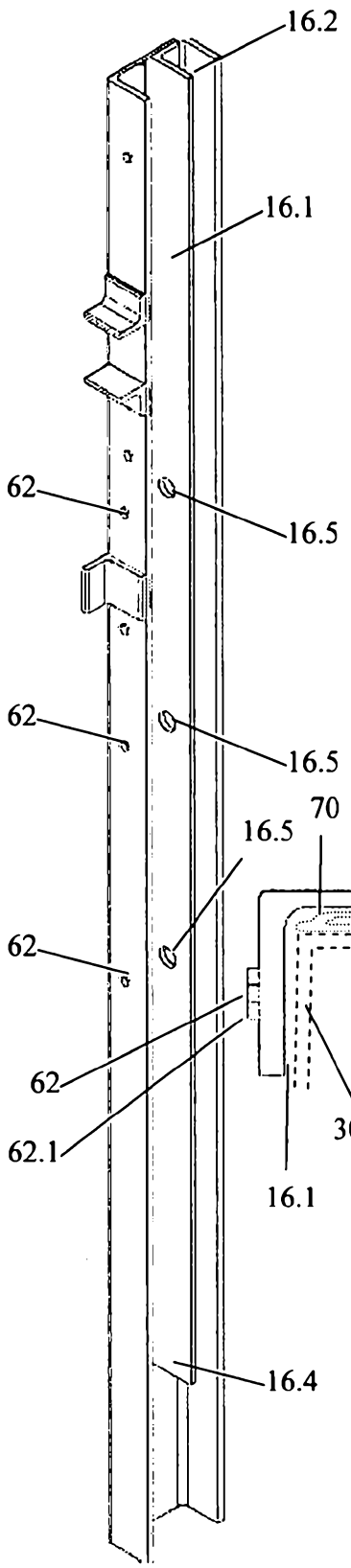

FIG 14

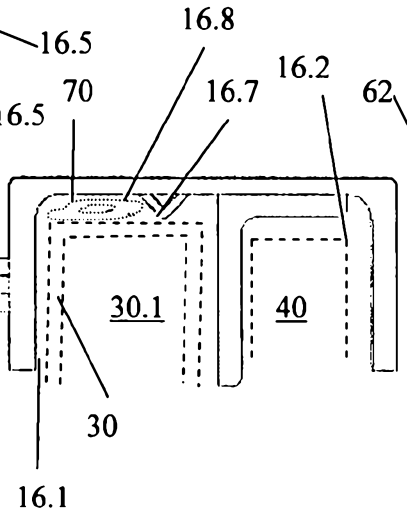

FIG 15

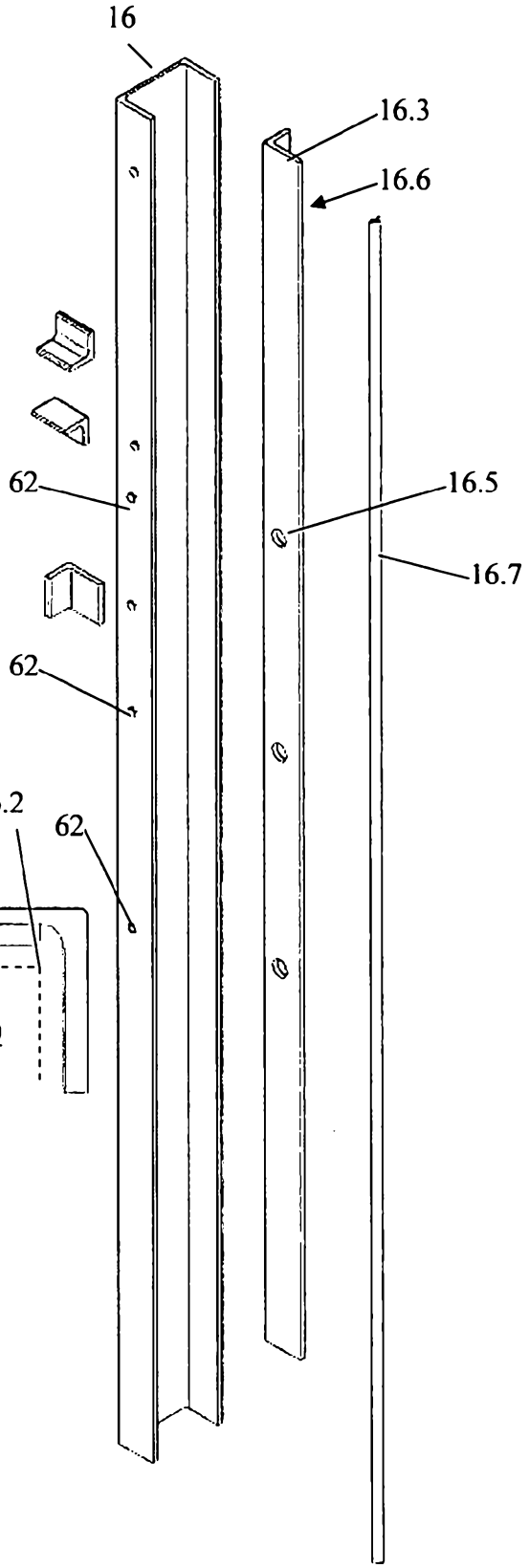

FIG 16

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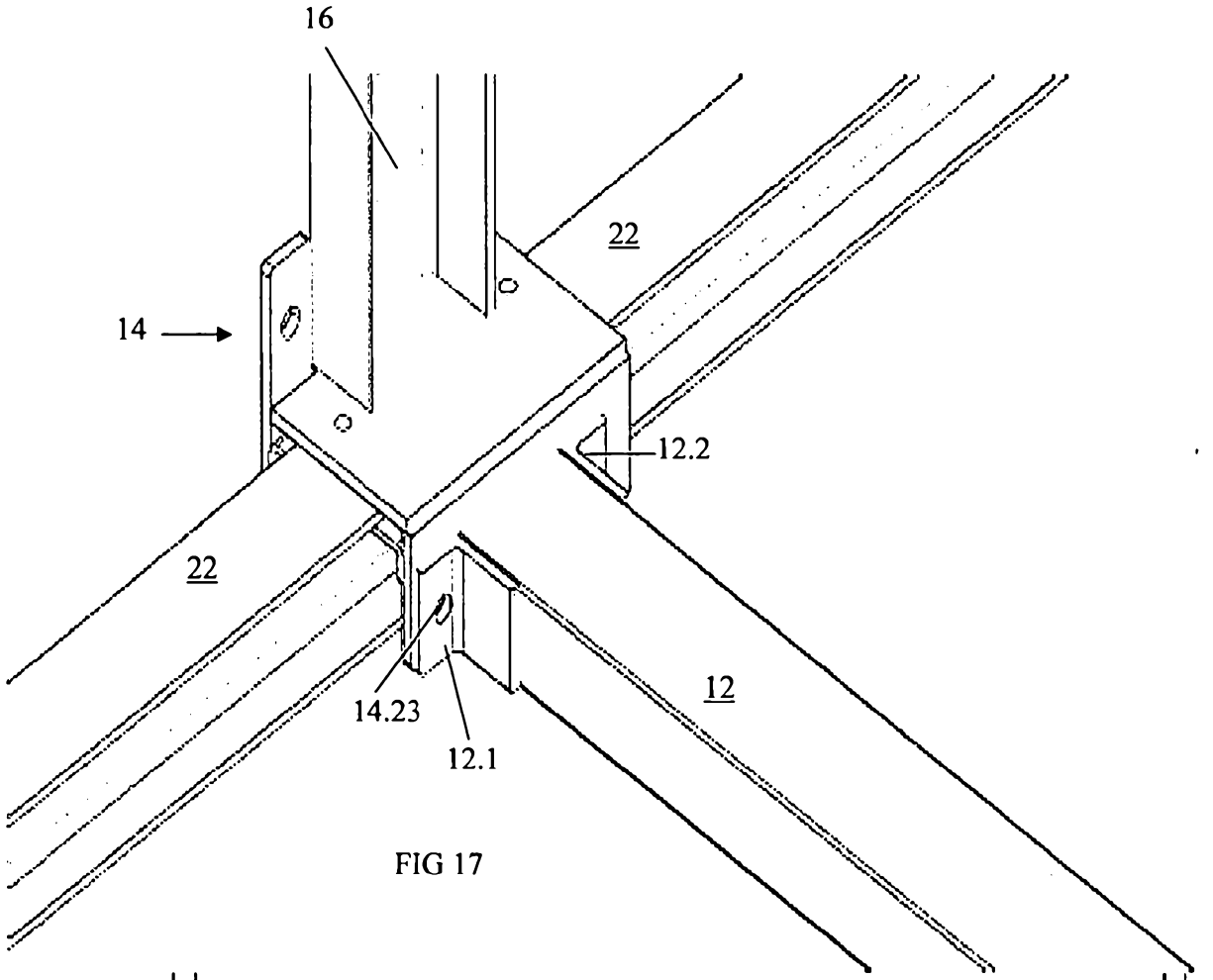

FIG 17

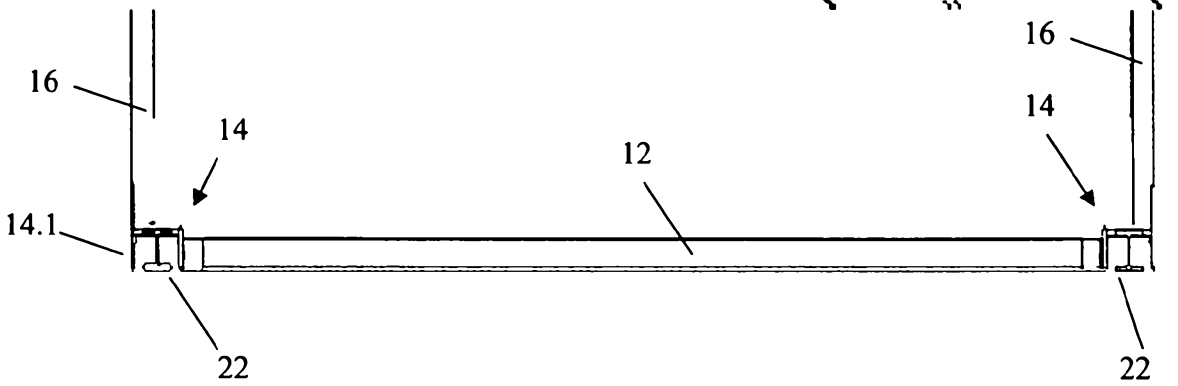

FIG 18

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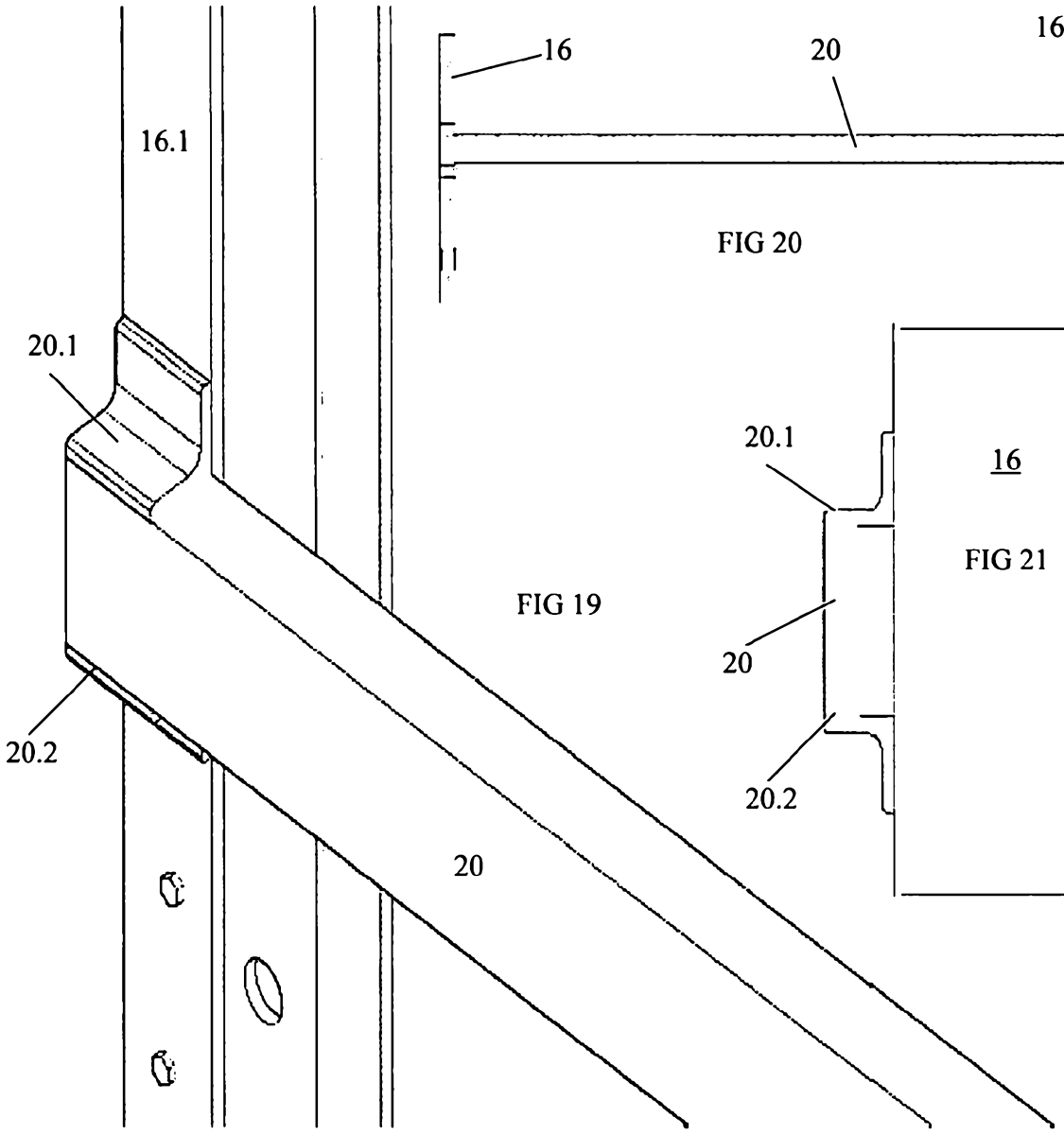

FIG 19

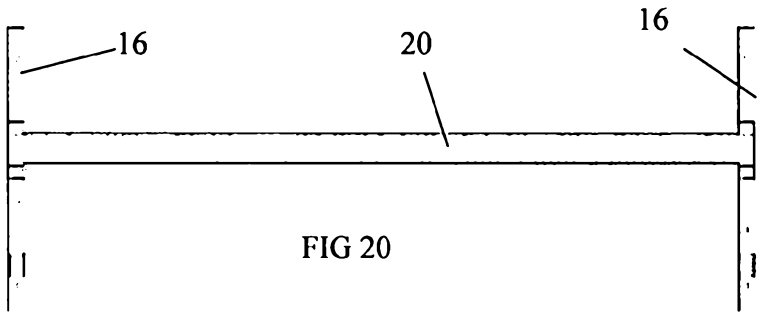

FIG 20

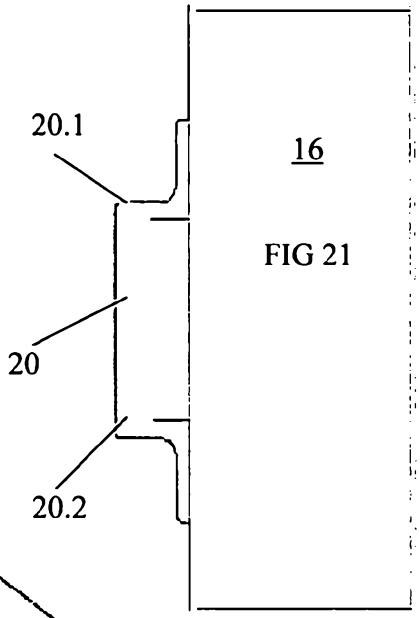

FIG 21

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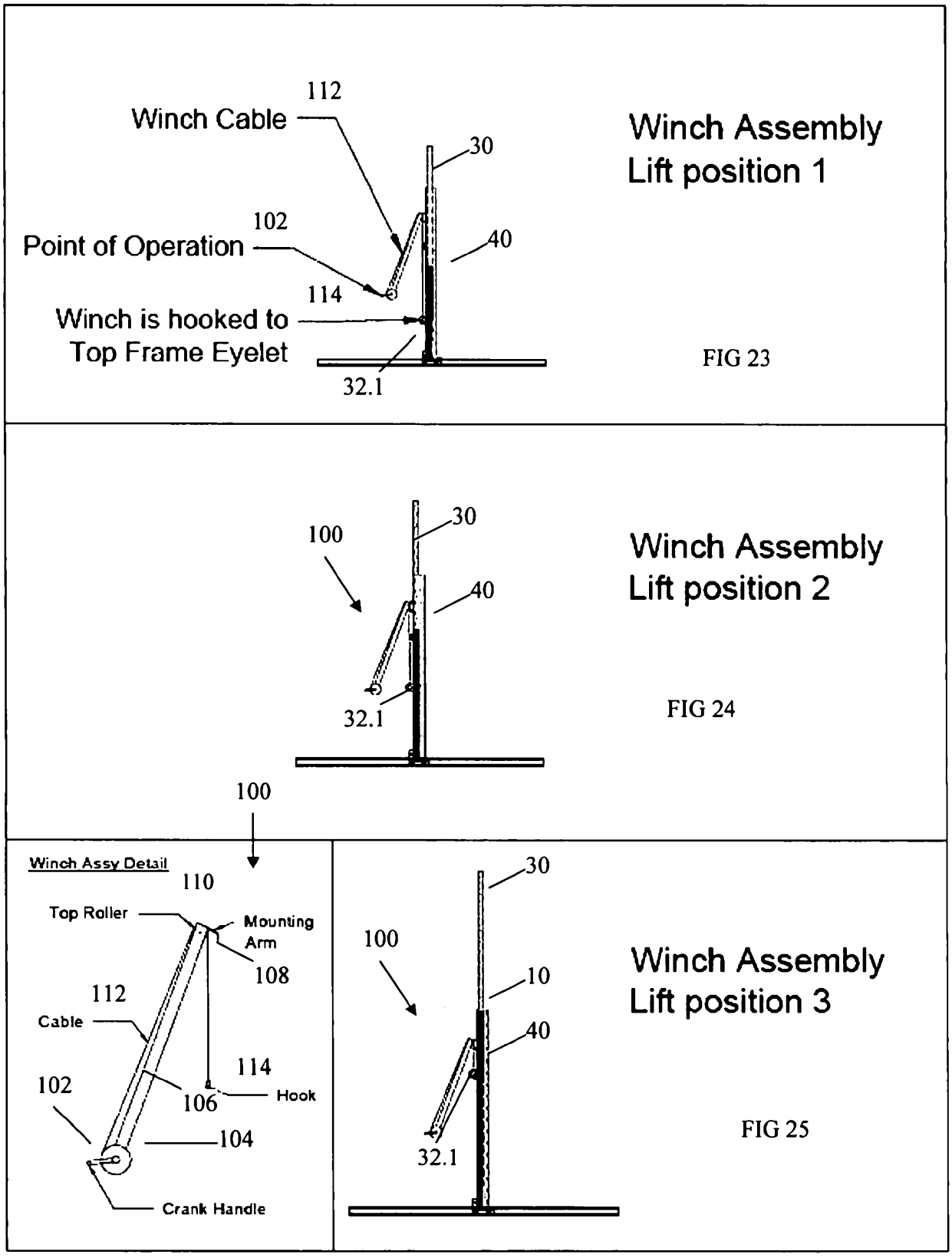

FIG 22

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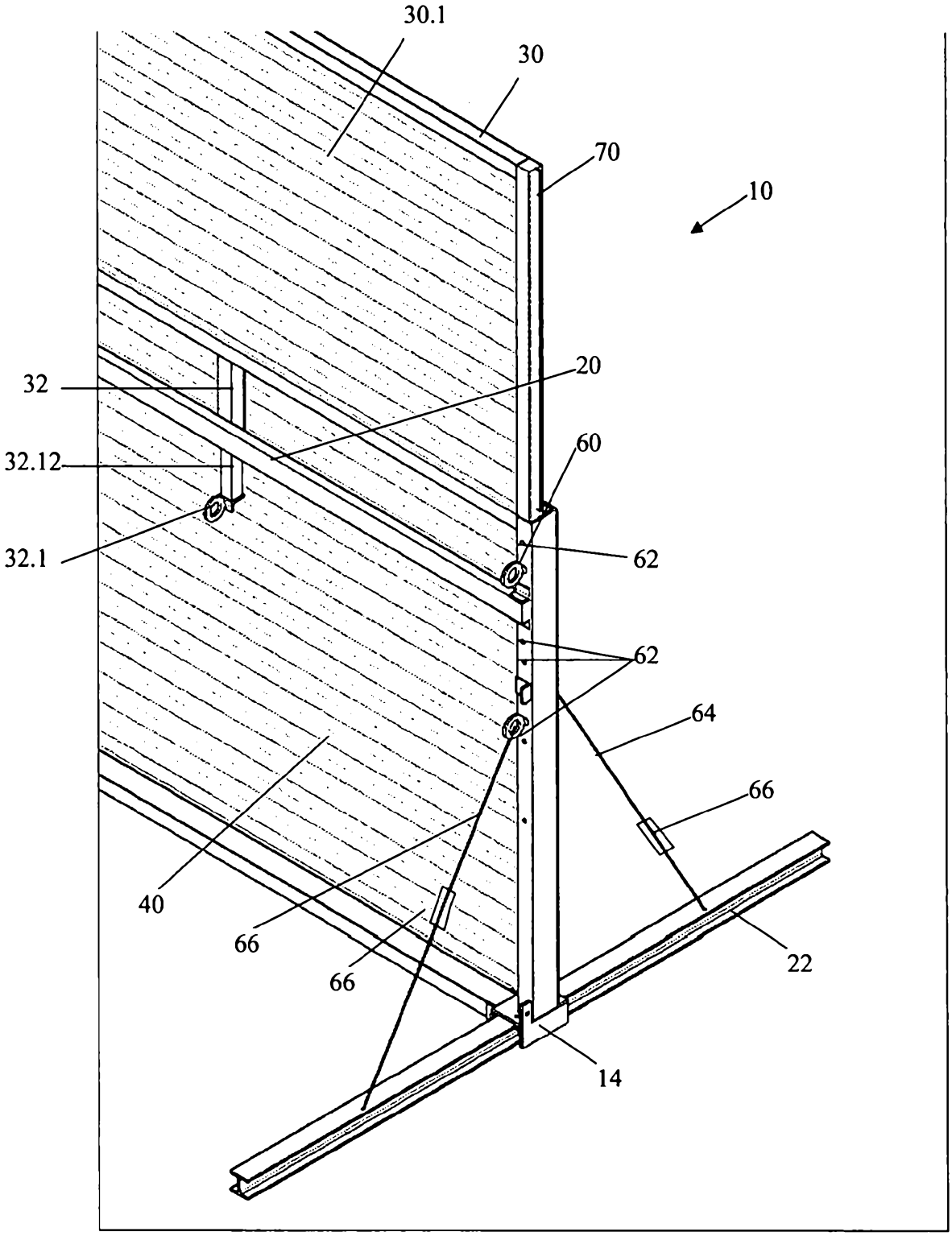

FIG 26

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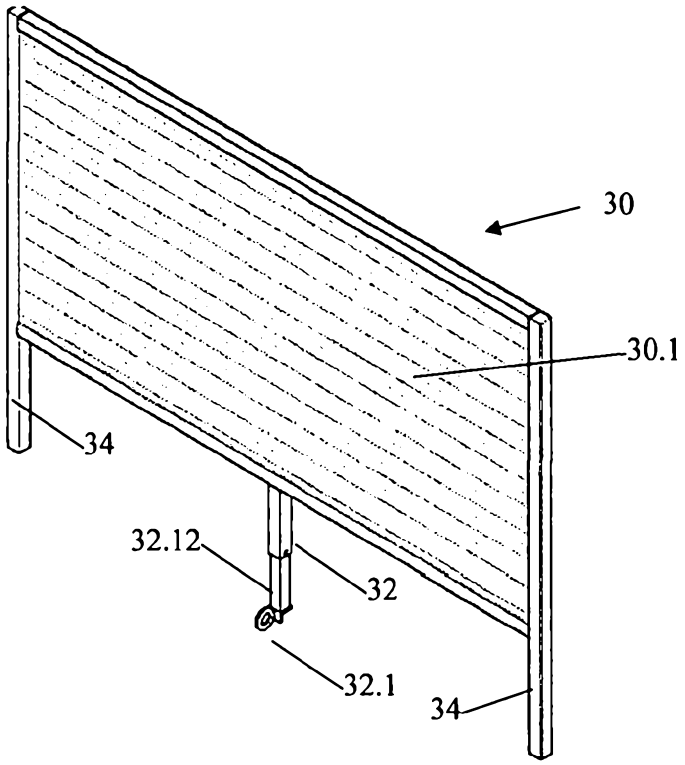

FIG 27

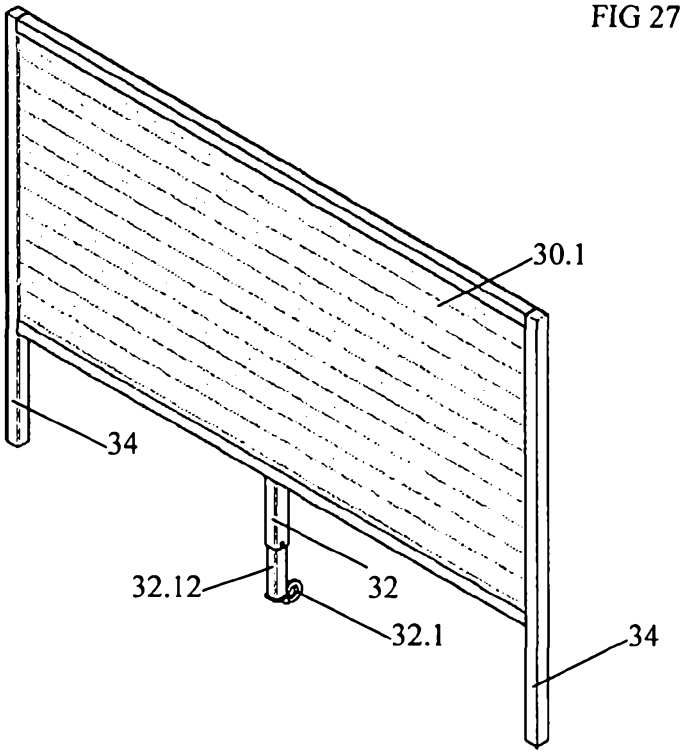

FIG 28

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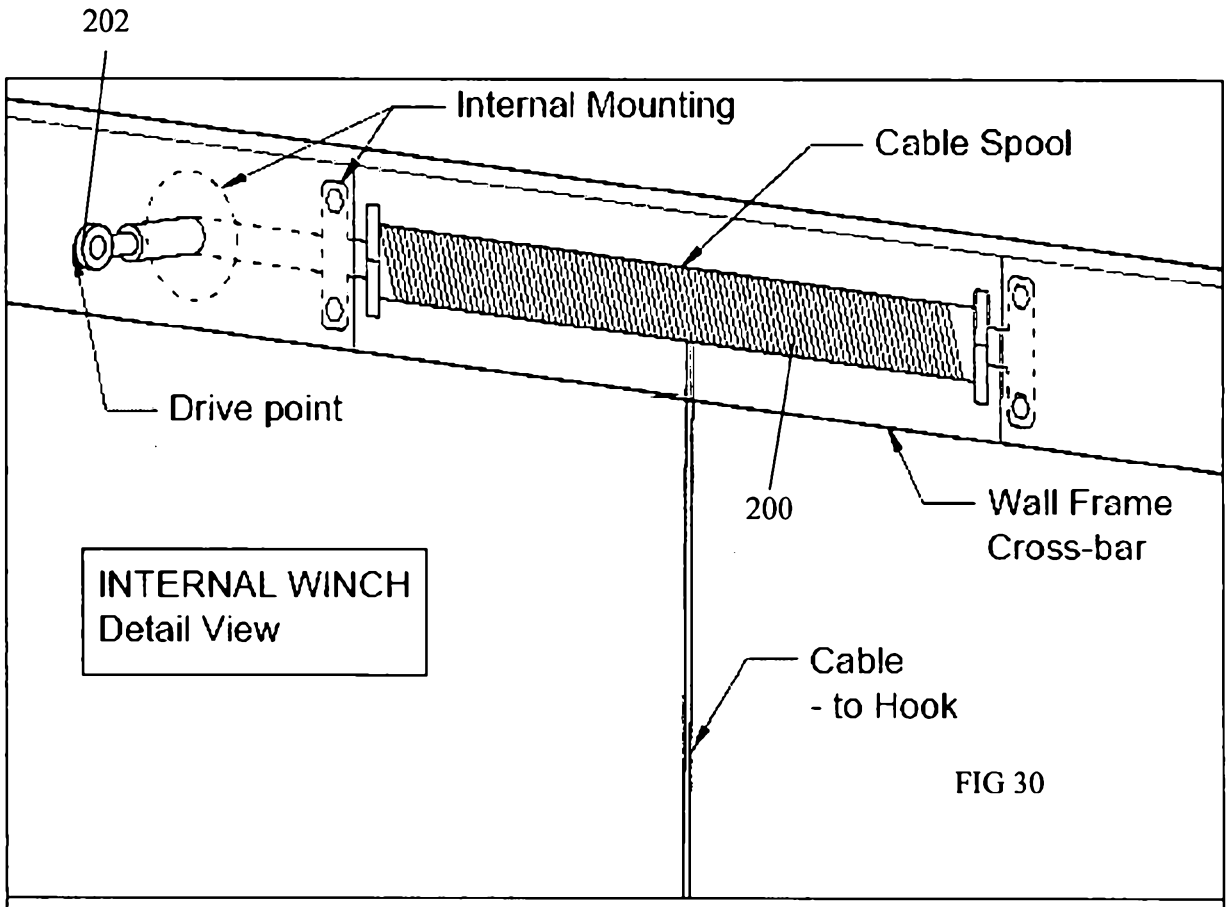

FIG 30

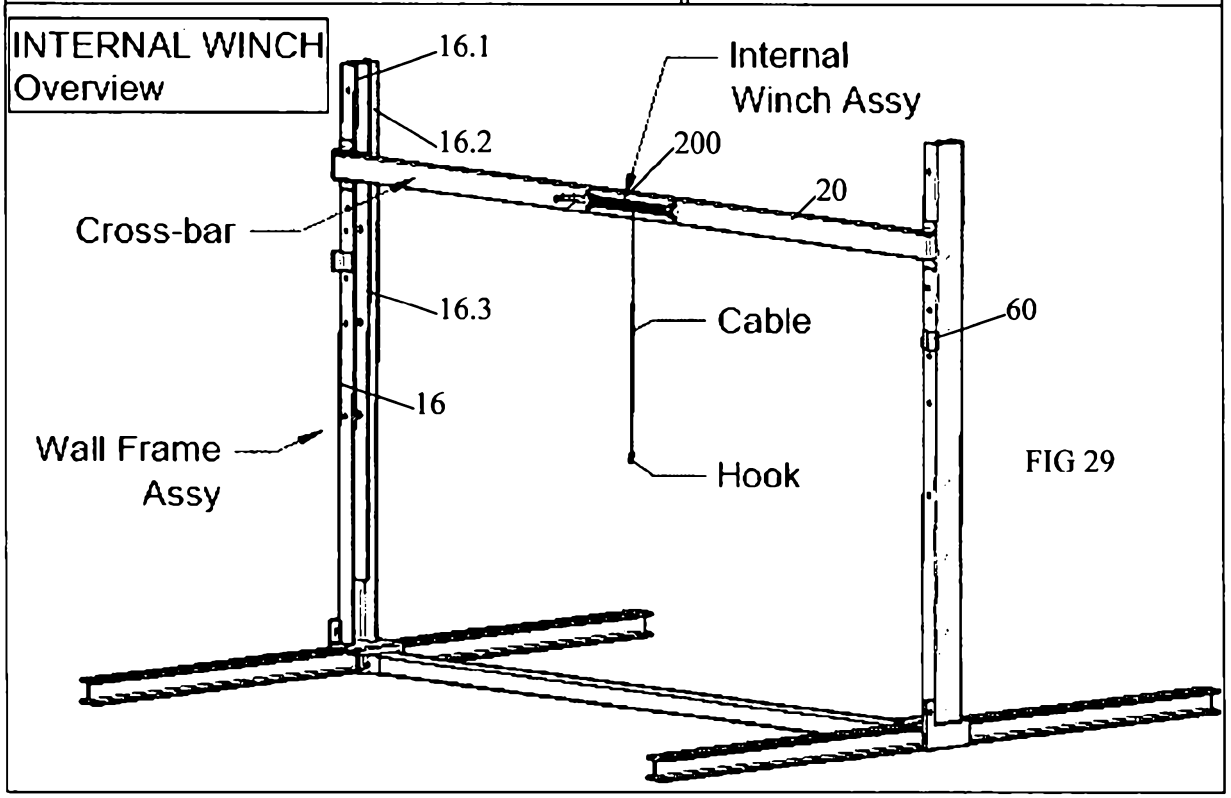

FIG 29

2012201848 29 Mar

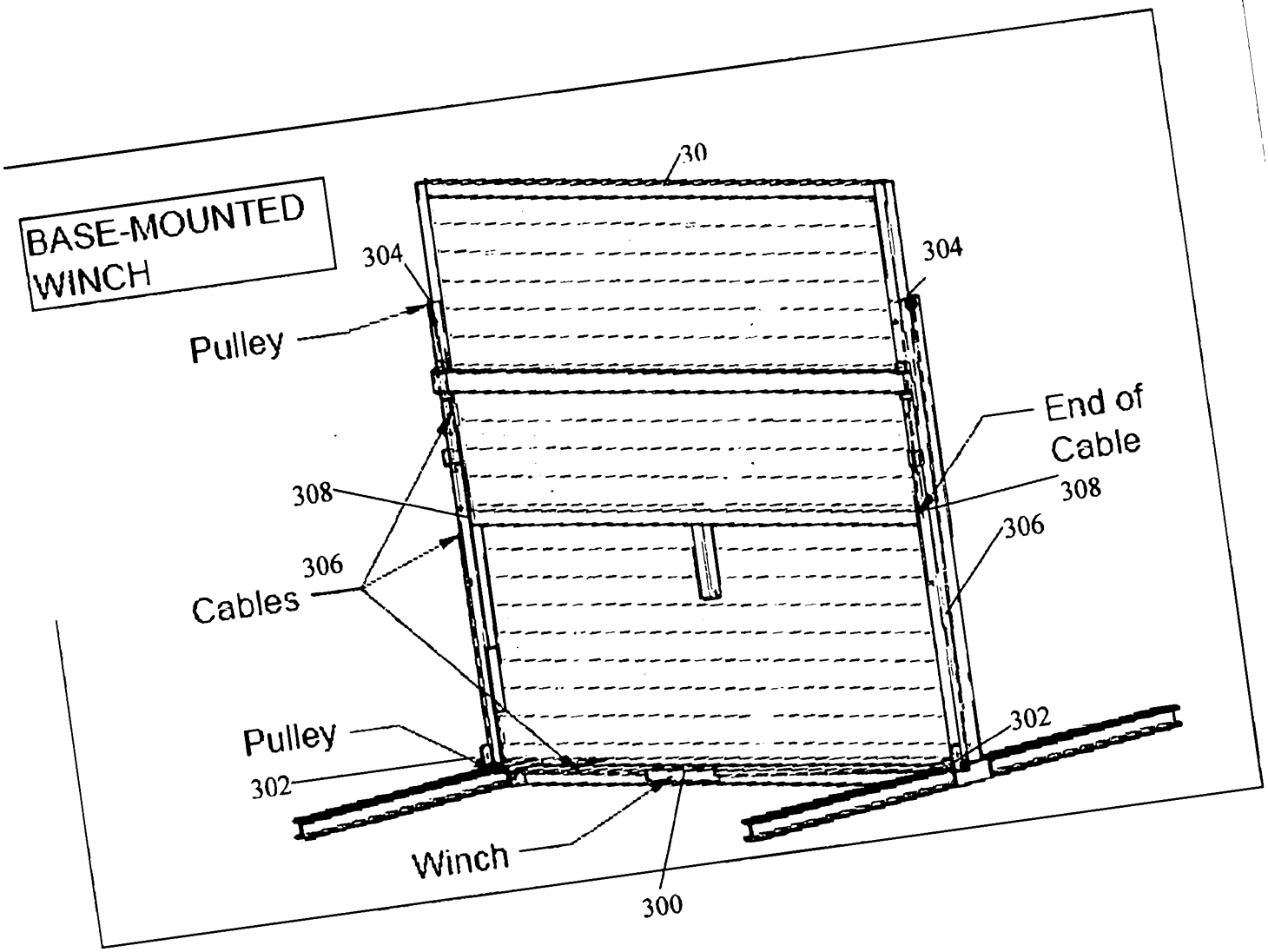

FIG 31