



US 20020148173A1

(19) **United States**

(12) **Patent Application Publication**
Kugler

(10) **Pub. No.: US 2002/0148173 A1**

(43) **Pub. Date: Oct. 17, 2002**

(54) **APPARATUS FOR ADJUSTING THE
ELEVATION OF A PLANAR SURFACE WITH
SELECTIVELY ADJUSTABLE CAPS**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/575,335,
filed on May 19, 2000, now Pat. No. 6,363,685.

(76) Inventor: **William E. Kugler**, Denver, CO (US)

Publication Classification

Correspondence Address:
SHERIDAN ROSS PC
1560 BROADWAY
SUITE 1200
DENVER, CO 80202

(51) **Int. Cl.⁷ E04B 9/00**

(52) **U.S. Cl. 52/126.6**

(57) **ABSTRACT**

An adjustable head is provided for selective interconnection
to a vertical elevation support device and which is adapted
for aligning, supporting or positioning an object in a given
location.

(21) Appl. No.: **10/109,786**

(22) Filed: **Mar. 29, 2002**

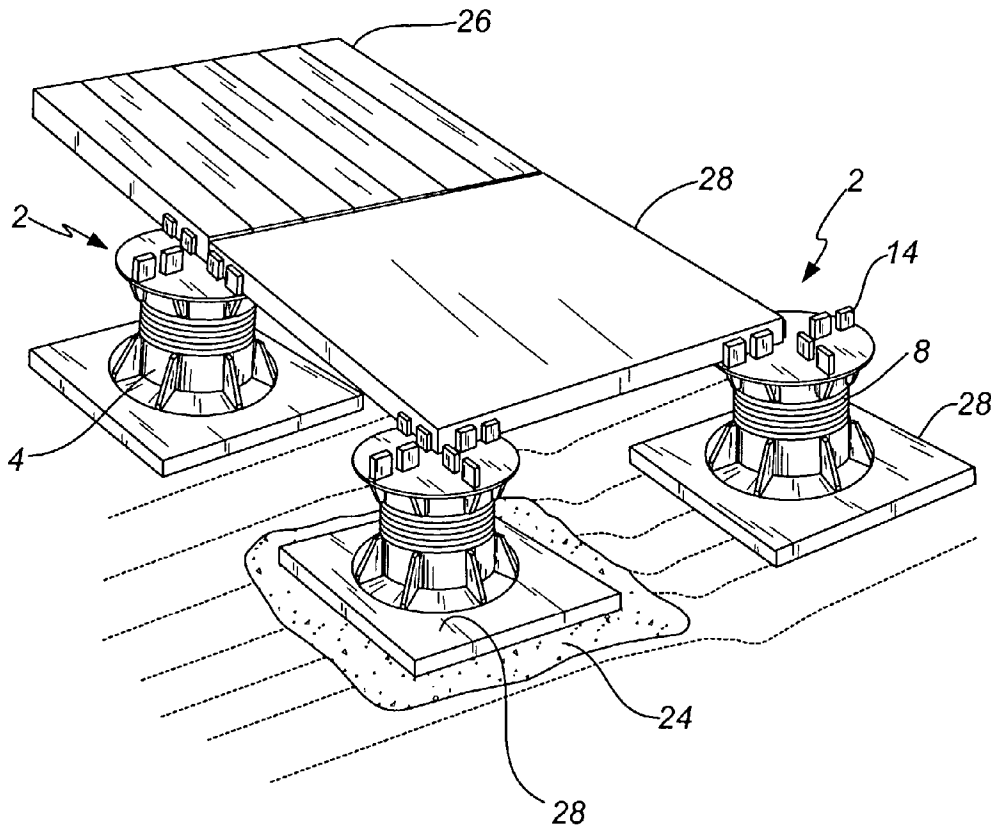


Fig. 1

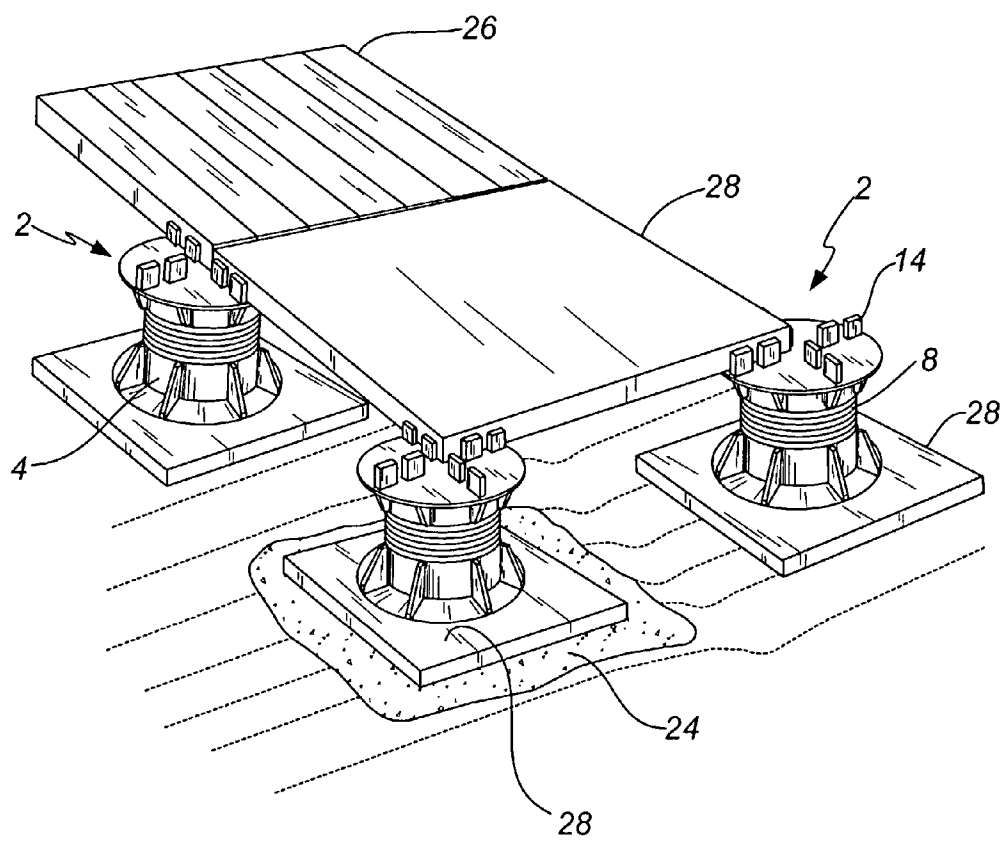


Fig. 2

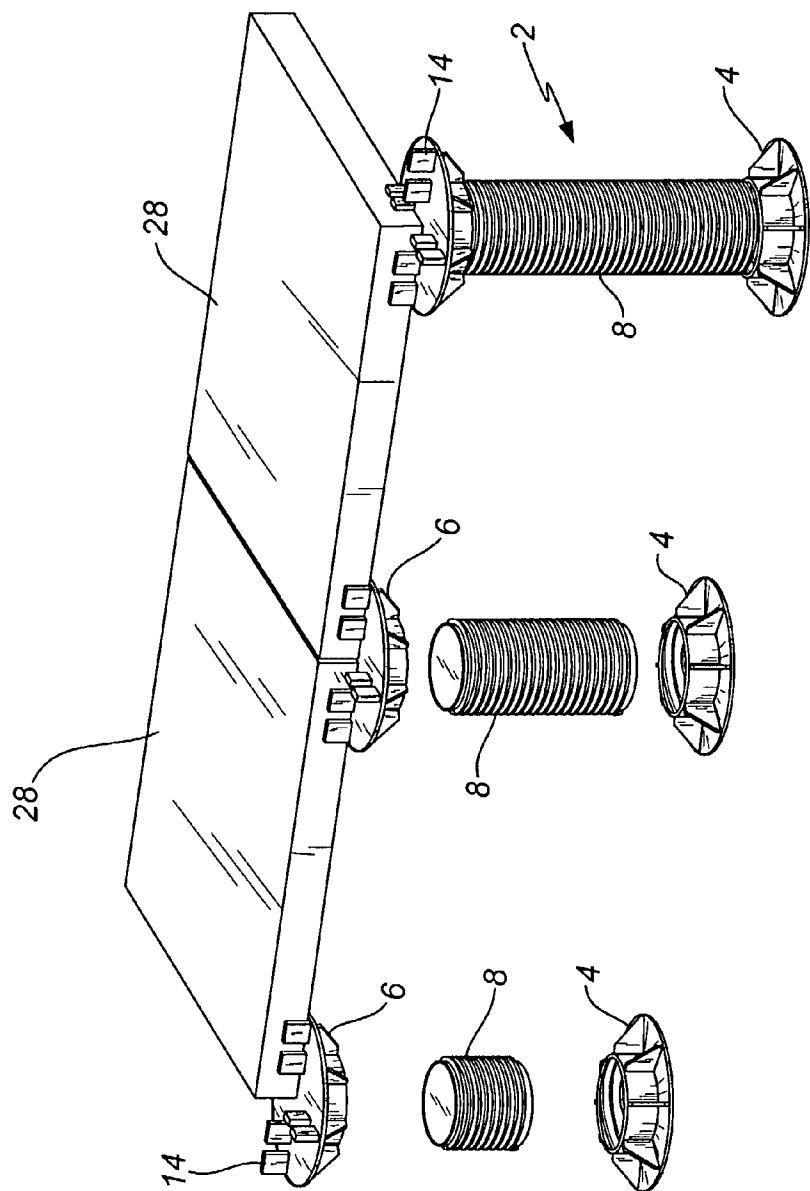
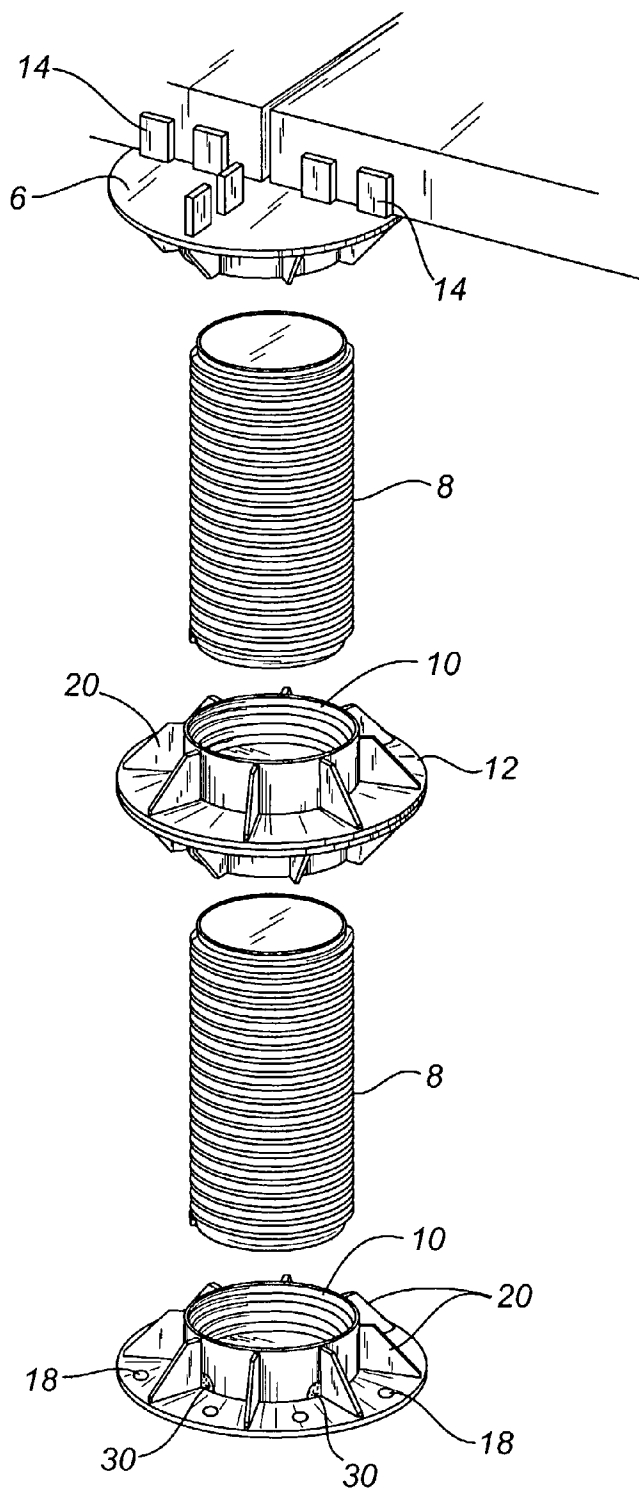


Fig. 3



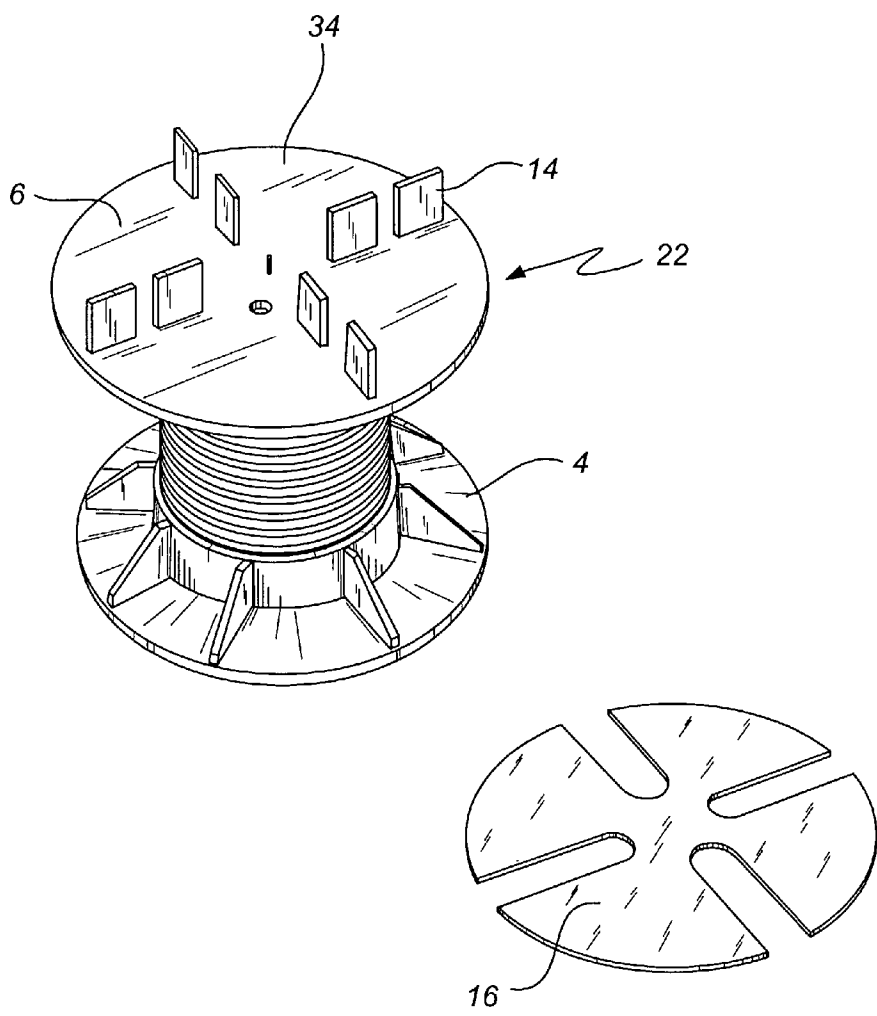


Fig. 4

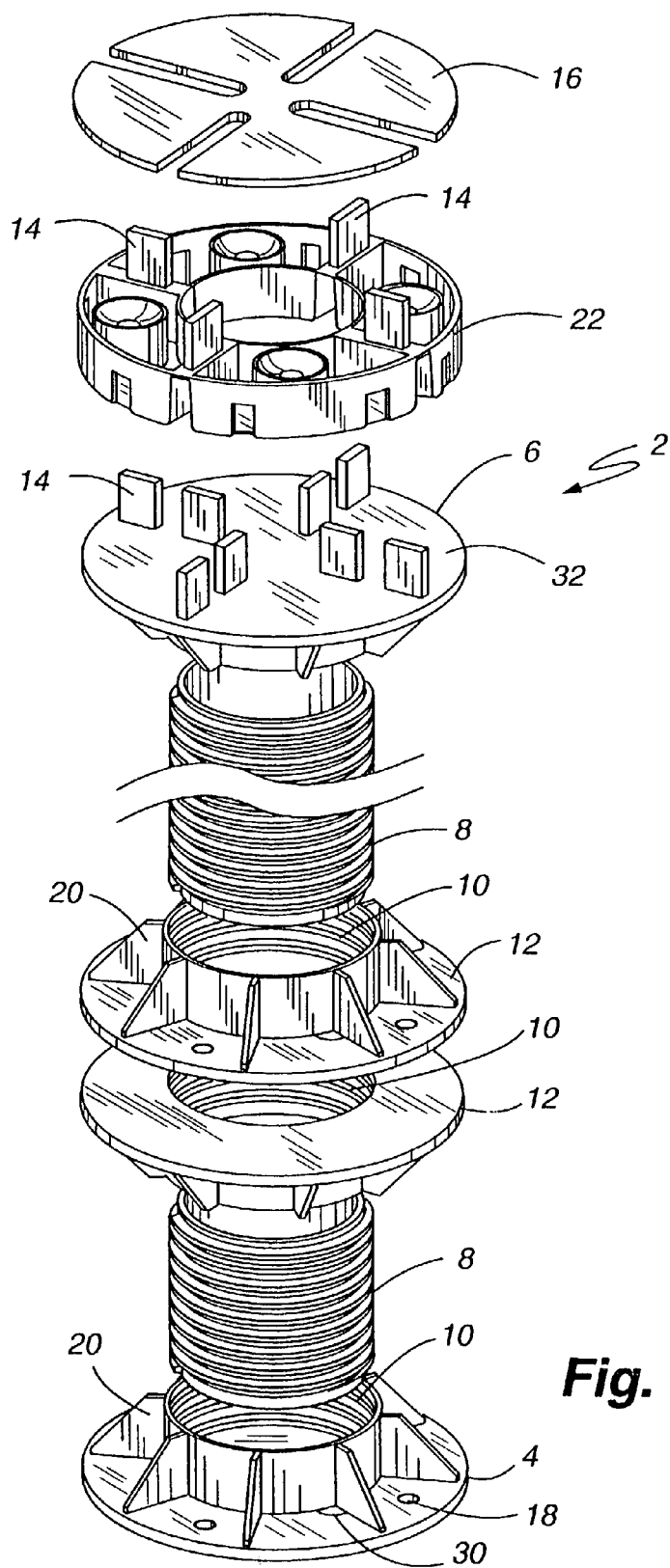


Fig. 5

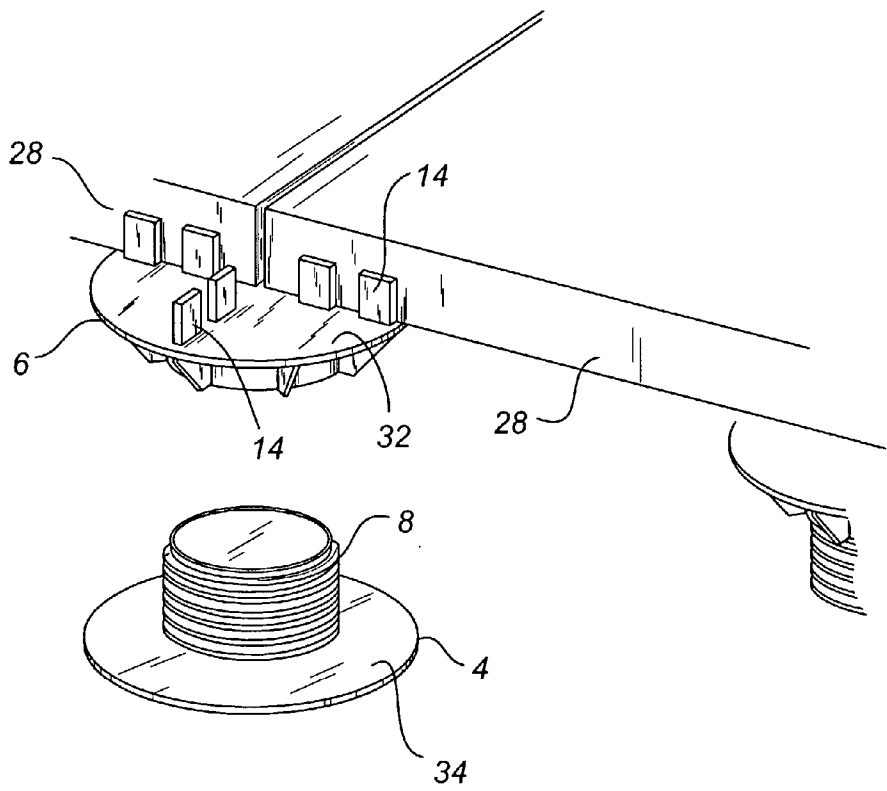


Fig. 6

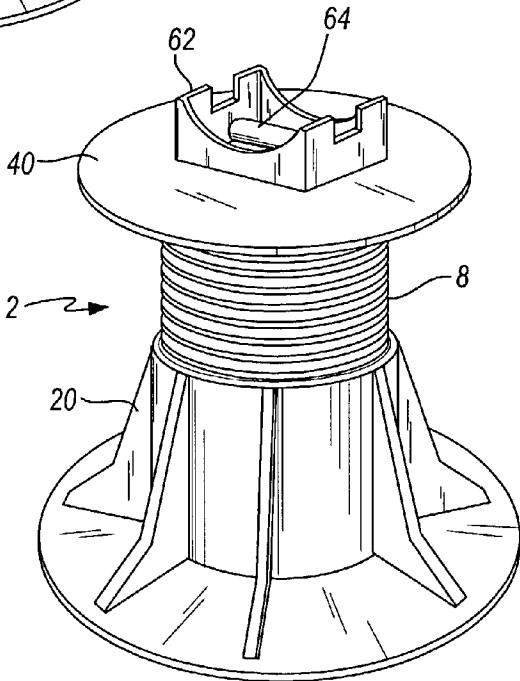
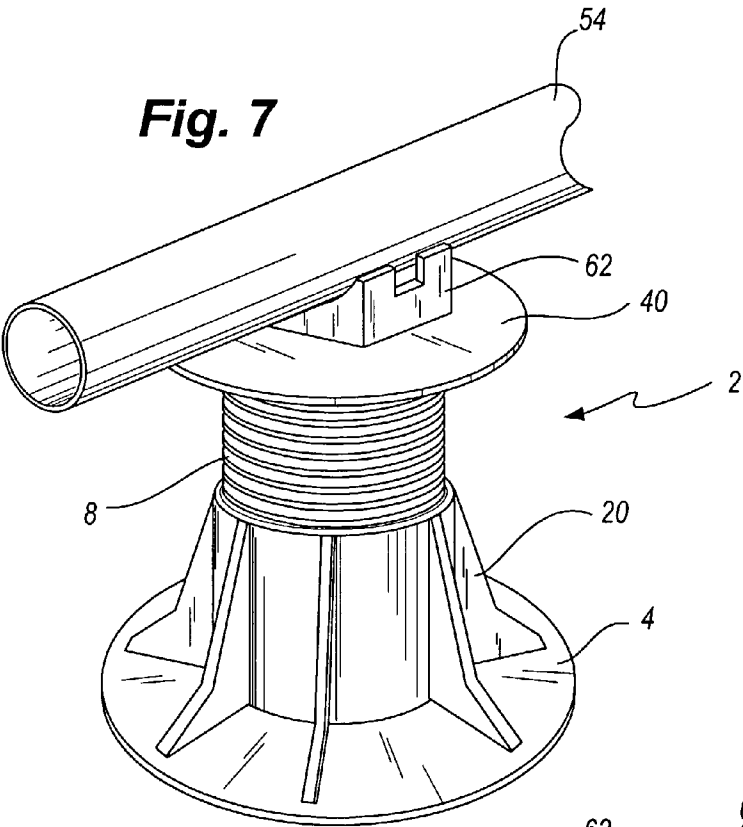
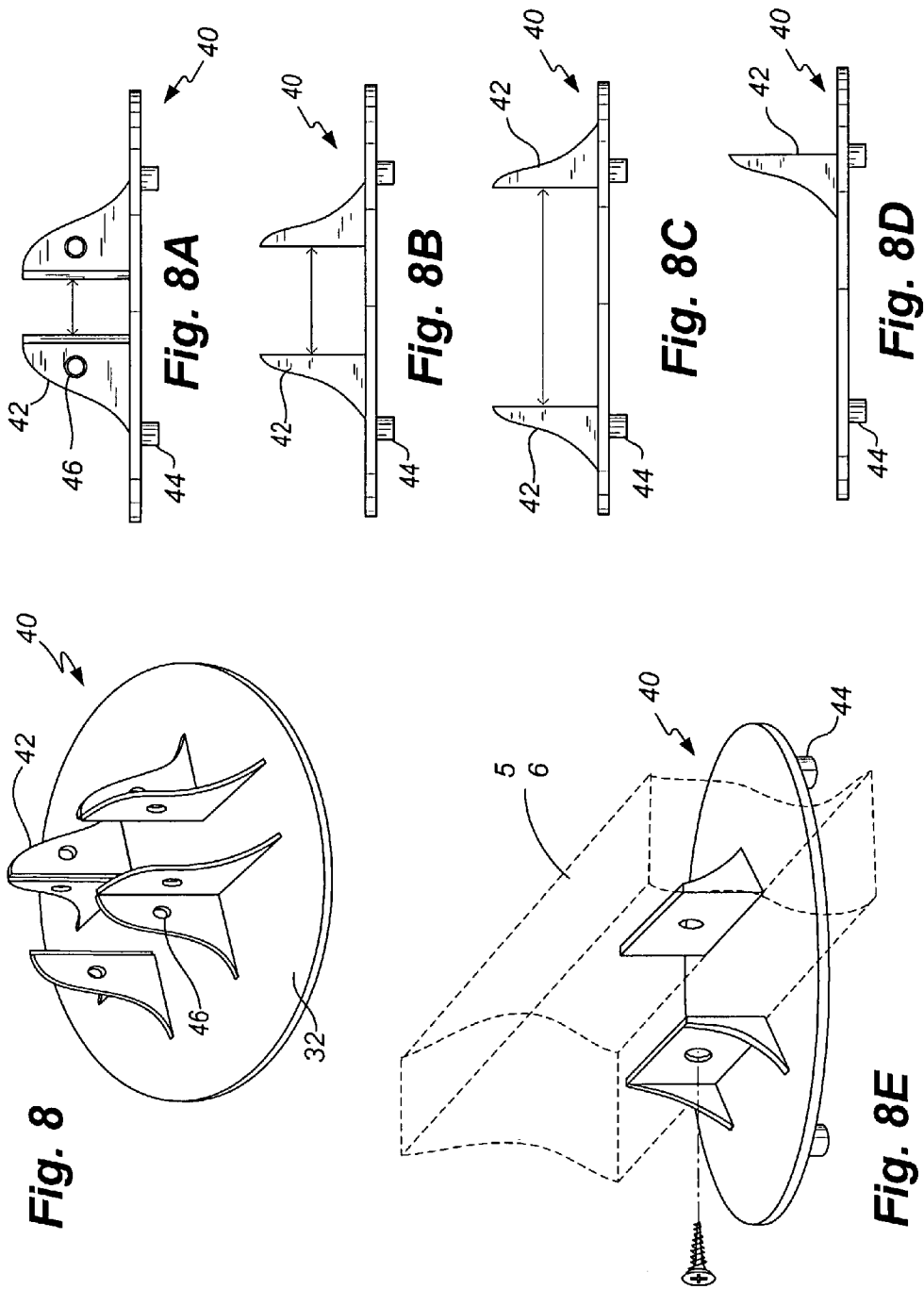


Fig. 7A



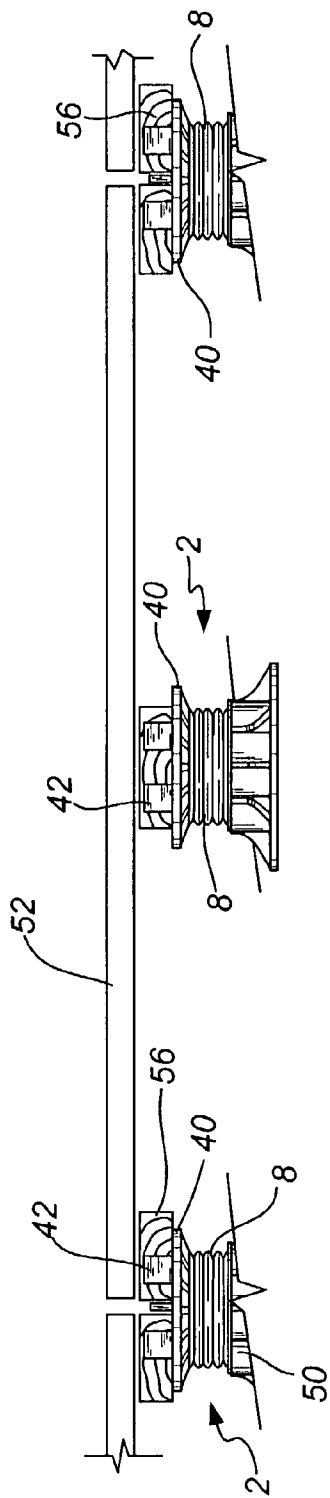


Fig. 8F

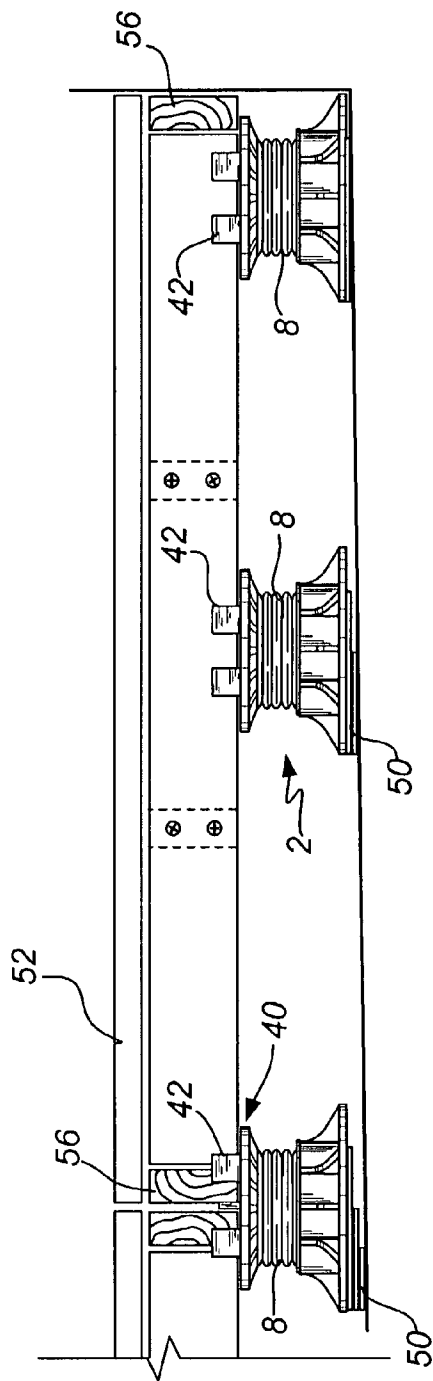
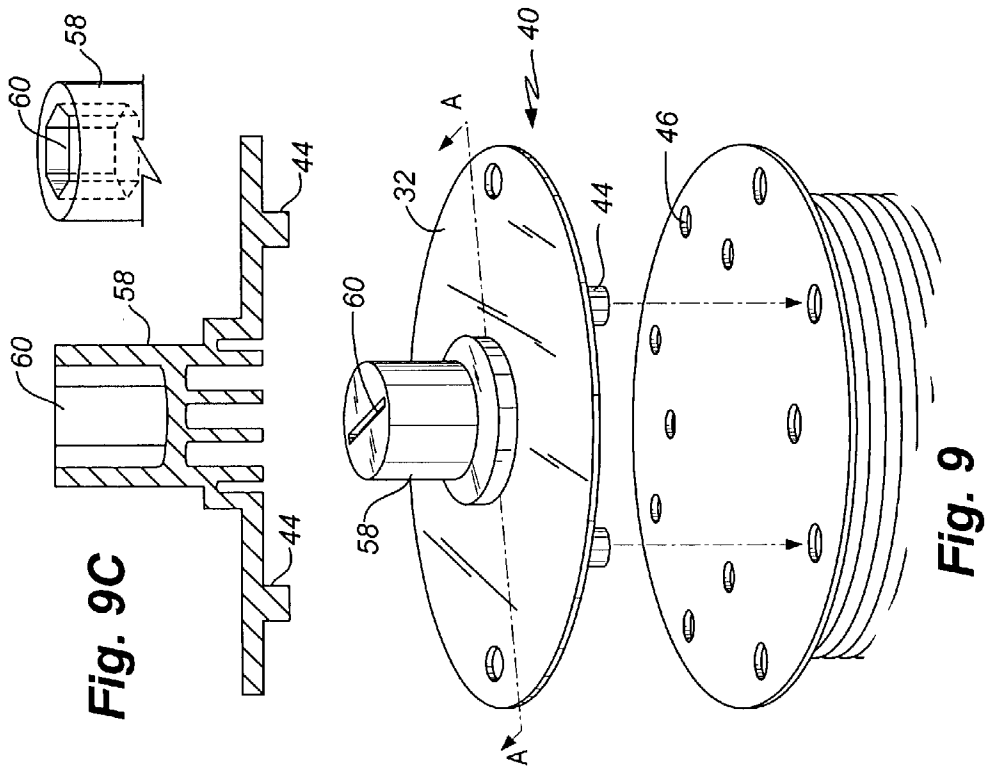
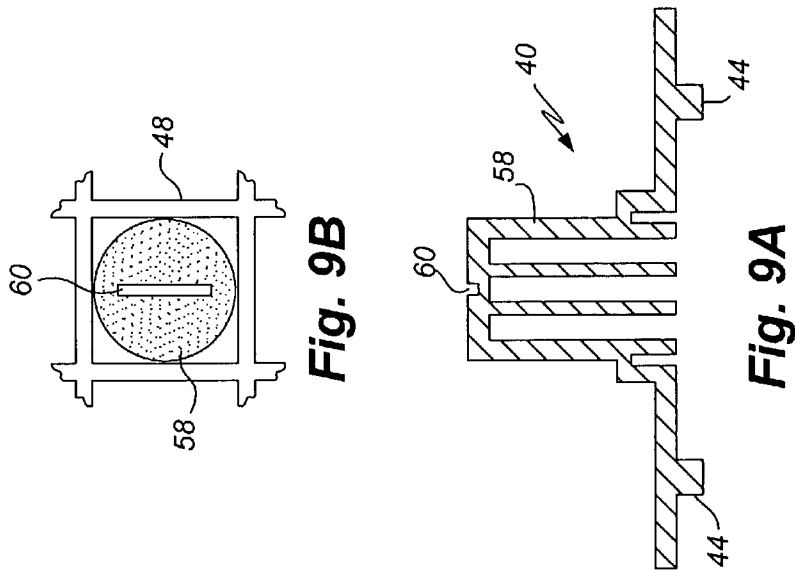


Fig. 8G



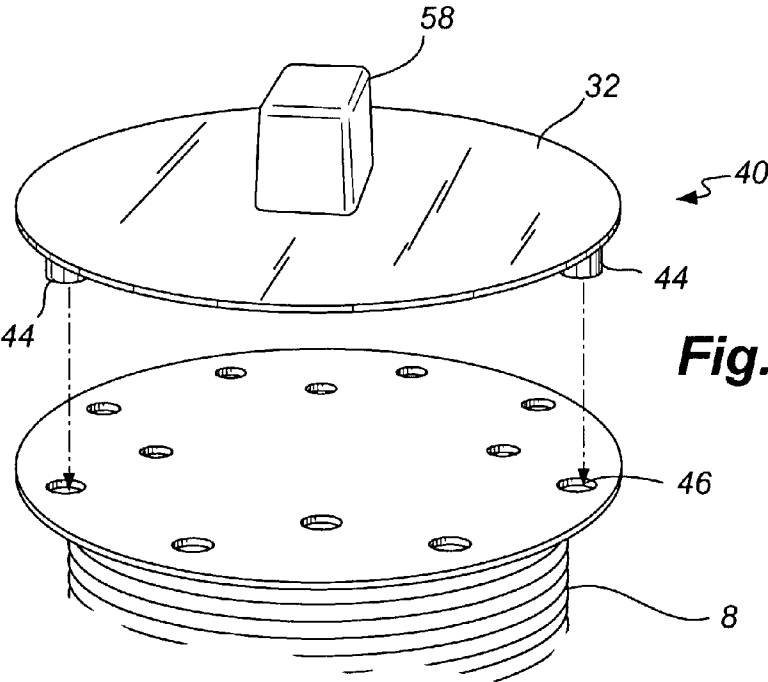


Fig. 10B

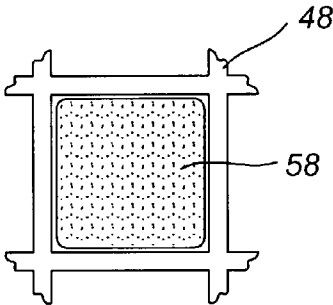
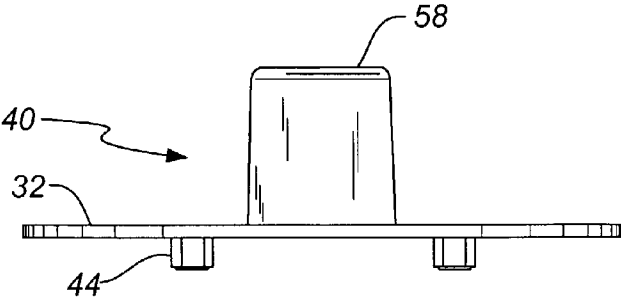
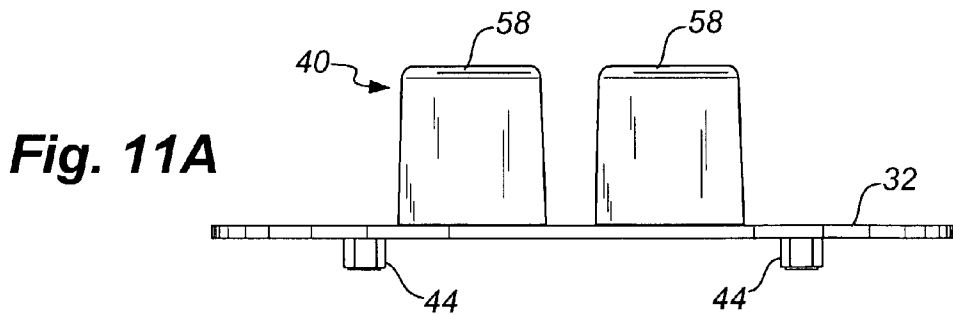
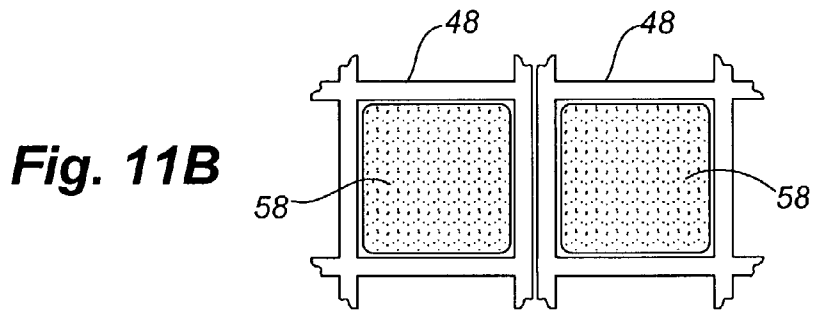
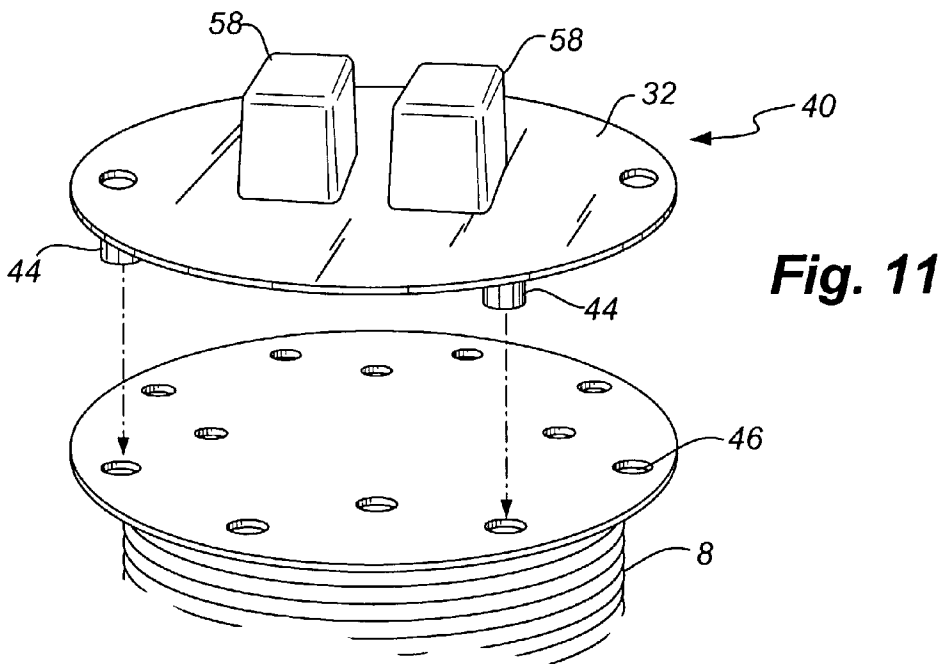


Fig. 10A





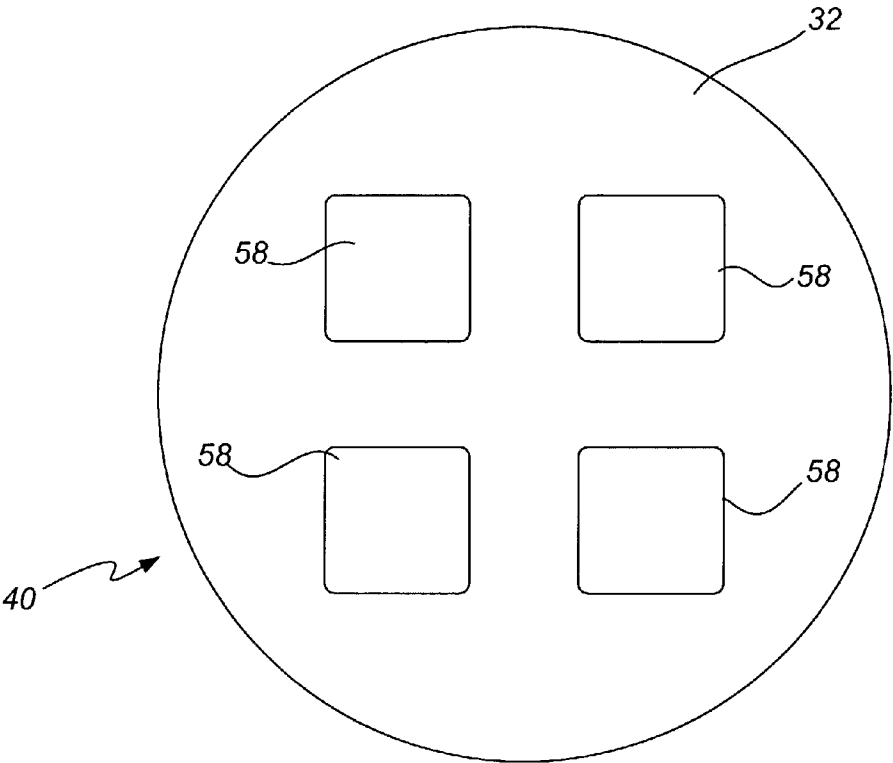


Fig. 12A

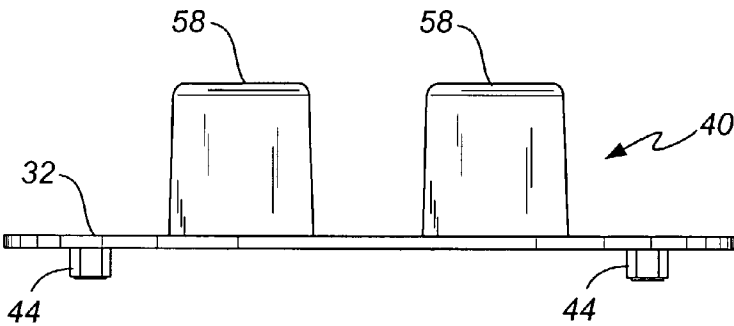


Fig. 12

APPARATUS FOR ADJUSTING THE ELEVATION OF A PLANAR SURFACE WITH SELECTIVELY ADJUSTABLE CAPS

[0001] This application is a Continuation-In-Part of pending U.S. patent application Ser. No. 09/575,335, filed May 19, 2000, entitled "Method and Apparatus for Selectively Adjusting the Elevation of an Undulating or Planar Surface" and is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to construction apparatus, and more specifically a device which can be used to selectively adjust the height, level and orientation of a building surface such as a walk, deck or porch during the construction therein, and which includes a plurality of adjustable caps for different applications.

BACKGROUND OF THE INVENTION

[0003] During the construction of patios, decks, floors and other building surfaces, it is imperative that a level surface or a surface with a gradual, consistent grade be maintained. This is most often accomplished over ground surfaces which are uneven, non-level and difficult to work with. Previous attempts have been made by builders to effectively eliminate this problem, including leveling the uneven surface by hand or with machinery, using wedge shims, spacers and selectively cutting numerous vertical support work pieces until the proper length and resultant grade is obtained. Unfortunately, all of the aforementioned methods are time consuming, generally ineffective and expensive.

[0004] One possible solution to the aforementioned problem was disclosed in U.S. Pat. No. 5,588,264 to Buzon (hereinafter the '264 patent). In the '264 patent, a leveling device was disclosed which included a tubular stem which was threadingly coupled with a crown member and a foot member. To adjust the elevation of a work surface such as a patio deck, the tubular stem was rotated either counter clockwise into a base member to increase the height of the leveling device, or rotated clockwise to decrease the height of the leveling device. This device allowed portions of the work surface to be raised or lowered quickly and effectively without having to add shims, move dirt or cut additional lumber or other materials.

[0005] The devices disclosed and covered in the '264 patent have a specific limited range of height since differing units can only be raised within a range of approximately 3 inches. Thus, the device is very limited in use and one unit cannot be used in a majority of situations where a custom fit piece is required to level a building surface. Further, no type of non-skid shim plates were provided in the '264 patent to prevent shifting of the building surface resting on the adjustable leveling device. Additionally, no attachable shims or couplings are provided to quickly modify the total height of the adjustable leveling device or bring the support element into a more vertical position. Thus, the use of shims and other make-shift work pieces are often required in combination with the leveling apparatus which is both time consuming and quite ineffective.

[0006] Another problem associated with prior art leveling devices is the inability to use non-threaded pipe such as inexpensive plastic PVC pipe, which can quickly be cut to

a desired height. Further, there are not any known coupling devices which are adapted or receiving a non-threaded pipe or one end, and a second threaded pipe on an opposing end which can be used to selectively adjust the elevation of the adjustment member and associated building surface.

[0007] Another problem found in the art is the inability to utilize a standard vertical adjustment aperture with a plurality of removable "heads" which are adapted for a multiplicity of uses. For example, one type of head may be designed to align and support a structural member such as a beam or stud, while a different type of head may include one or more projections designed to support a grating material. Other adjustable heads may be designed to support pipe or any other type of material where elevation and alignment are critical.

[0008] Thus, there is a strong need in the construction trades and industry in general for a leveling device which is simplistic to use, is stable, can be modified on site with common hand tools, and which can be expandable with a variety of accessory components to provide a wide range of selectively adjustable lengths.

SUMMARY OF THE INVENTION

[0009] It is thus one aspect of the present invention to provide an adjustable leveling apparatus which can be modified quickly and easily with a portable hand saw to accommodate a variety of different lengths to support a deck, porch floors or mechanical equipment (such as pumps) or other similar building surfaces. The leveling device can be used independently, or more commonly with a plurality of other adjustable support devices to create a level surface or a surface with a slight grade for drainage purposes.

[0010] It is another aspect of the present invention that the leveling device be selectively expandable to a much greater length by the use of a coupling mechanism which allows the interconnection of at least two distinct lengths of tubular stem material. Additionally, in another aspect of the present invention the tubular stem is integrally interconnected to a base member. In this configuration the total length of the adjustable support piece is significantly reduced and can be used in situations where the vertical clearance between an upper building surface and a lower surface is less than about three inches.

[0011] In another aspect of the present invention, a base member is provided which supports the tubular stem and crown member, and which has a greatly increased and widened base surface to provide stability. Further, the base member may have a plurality of drainage weep holes to allow water to drain through the substrate to avoid freezing and potential breakage. Further, a plurality of attachment apertures may be provided to receive nails, screws and other attachment hardware to allow the base member to be interconnected to a lower building surface.

[0012] It is yet another aspect of the present invention to provide a crown member which is screwed onto the tubular stem member and which can be raised or lowered to selectively adjust the total height of the leveling apparatus. The top of the crown member preferably includes a plurality of alignment tabs which are used to align the construction materials such as a wood deck panel, a patio paver, cement block or framing joist. Alternatively, one or more of the alignment tabs can be quickly removed to provide a flat support surface.

[0013] It is a further aspect of the present invention to provide a removable crown coupling member which matingly engages the upper planar surface of the crown member to provide slightly more length to the adjustable support piece. Preferably, the crown coupling member has a plurality of vertically extending alignment tabs which are used to align the building surface. Further, a non-skid pad may be provided which fits on either the upper planar surface of the crown coupling member. The non-skid pad is preferably made of a rubber, and has a sufficient coefficient of friction to prevent the deck panels or stone pavers or other common materials from shifting on the adjustable support piece after installation.

[0014] It is yet a further aspect of the present invention to provide a selectively adjustable support member which utilizes at least one non-threaded pipe and associated coupling and base or crown member. Thus a non-threaded pipe can be utilized to interconnect a crown member to an upper portion of a coupling, or alternatively to interconnect a base member to a lower portion of the coupling. In either embodiment it is anticipated that a threaded pipe would additionally be utilized to allow the selectively adjustable support member to be adjusted to a desired vertical height.

[0015] In another aspect of the present invention, a head or "cap" member is provided which may be removably interconnected to an upper portion of the crown member, and which has any number or geometric configurations designed to support, align or position a structural member such as a beam, stud or pipe. In one embodiment of the present invention the head member may have a plurality of pins or studs projecting downward which matingly engages one or more apertures positioned in an upper surface of the crown member. As appreciated by one skilled in the art, the head member may be interconnected to an upper portion of the crown by various other means such as hardware, i.e. screw on nails, adhesive materials or other ways known in the art. Further, the geometric configurations on the upper portion of the head member may include one or more rails aligned in a parallel or perpendicular orientation, one or more male studs or pins projecting upwards to receive a grating material, or a "V" or "U" shaped guides with one or more rollers positioned thereon to support a pipe and accommodate movement as a result of thermal expansion or contraction. Thus, the number of possible geometric configurations which may be utilized in conjunction with the selectively removable head member are limited only by the type and nature of material or structure designed to be supported or aligned on top of the head.

[0016] Thus, in one aspect of the present invention, a removable, multi-purpose head which is adapted for selective use with a vertically adjustable support member is provided, comprising:

[0017] a substantially planar surface;

[0018] an attachment means interconnected to a lower surface of said substantially planar surface which is adapted for removable interconnection to an upper portion of the vertically adjustable support member; and

[0019] an alignment means interconnected to said substantially planar surface which is adapted for at least one of supporting, aligning or positioning an object at a specific vertical elevation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a front perspective view of the present invention being used to support a building surface such as wood decking and/or concrete pavers;

[0021] FIG. 2 is a front perspective view showing the adjustable support piece in various stages of assembly and supporting a building surface;

[0022] FIG. 3 is an exploded view of the adjustable support piece showing the base member, two tubular stems for interconnection with a coupling, and a crown member for interconnection to the upper tubular stem;

[0023] FIG. 4 is a front perspective view of an assembled adjustable support piece and identifying a non-skid shim plate which fits on the upper planar surface of the crown member;

[0024] FIG. 5 is an exploded view of the adjustable support piece and further identifying a crown coupling member which matingly engages the upper planar surface of the crown member to provide a slight increase in the total length of the adjustable support piece; and

[0025] FIG. 6 is a front perspective view of an alternate embodiment of the present invention where the tubular stem is integrally interconnected to the base member, thus reducing the total height of the adjustable support piece.

[0026] FIG. 7 is a front elevation view of one embodiment of the present invention with a head or cap member used to support a pipe and including a roller or glide surface;

[0027] FIG. 7A is a front elevation view of the embodiment shown in FIG. 7B without the pipe positioned on a multi-purpose head;

[0028] FIG. 8 is a front perspective view of one embodiment of the present invention wherein the head is used to support intersecting building materials such as studs positioned at a right angle;

[0029] FIG. 8A is a front elevation view of the embodiment shown in FIG. 8;

[0030] FIG. 8B is an alternative embodiment of the invention shown in FIG. 8 and used to support a single 2x4 stud;

[0031] FIG. 8C is an alternative embodiment of the present invention used to support wider building materials;

[0032] FIG. 8D is an alternative embodiment of the invention shown in FIG. 8 and used to support a fascia/rim joist;

[0033] FIG. 8E is a front perspective view of the embodiment shown in FIG. 8B, and identifying the positioning of a stud;

[0034] FIG. 8F is a front elevation view of one embodiment of the present invention and identifying the positioning of various frame and plank materials on top of an adjustable pedestal with selectively removable heads;

[0035] FIG. 8G is a front elevation view of an alternative embodiment of the invention shown in FIG. 8F in use with different building materials;

[0036] FIG. 9 is a front perspective view of one embodiment of a head of the present invention shown being positioned on an adjustable support piece;

[0037] FIG. 9A is a front elevation view of the embodiment shown in FIG. 9 taken along line "AA";

[0038] FIG. 9B is a top plan view of a portion of the embodiment shown in FIG. 9;

[0039] FIG. 9C is a cross-sectional front elevation view of the embodiment shown in FIG. 9 and having an optional drive head configuration;

[0040] FIG. 10 is an exploded front perspective view of one head embodiment of the present invention shown positioned above an adjustable support piece;

[0041] FIG. 10A is a front elevation view of the embodiment shown in FIG. 10;

[0042] FIG. 10B is a top plan view of the embodiment shown in FIG. 10 and further including a section of grating material positioned thereon;

[0043] FIG. 11 is an alternative head embodiment of the present invention shown in a front perspective view positioned above an adjustable support piece;

[0044] FIG. 11A is a front elevation view of the embodiment shown in FIG. 11;

[0045] FIG. 11B is a top plan view of the embodiment shown in FIG. 11, and further including two sections of grating;

[0046] FIG. 12 is a front elevation view of an alternative embodiment of the present invention; and

[0047] FIG. 12A is a top plan view of the invention shown in FIG. 12, and which is designed for use with 4 distinct sheets of grating material.

DETAILED DESCRIPTION

[0048] Referring now to the drawings, FIG. 1 identifies three adjustable support pieces 2 of the present invention positioned below a building surface to provide support therein. As seen in this drawing, the support pieces 2 are typically positioned between a substantially planar surface of a lower building surface and an upper building surface such as a patio deck. For example, a concrete paver 28 may be positioned on top of compacted soil 24 to provide a lower support surface while a concrete paver 28 or alternatively wood decking material 26 is positioned on top of the adjustable support piece 2 to provide an upper building surface. Depending on the uneven elevation of the compacted soil 24, it is necessary for the various corners of the adjustable support pieces 2 to be independently raised and/or lowered to effectively obtain a level building surface. Thus, as seen in FIG. 1, the adjustable support piece 2 on the right hand corner is raised to a greater elevation than the adjustable support piece 2 positioned in the middle due to the lower elevation of the compacted soil 24 shown on the right hand portion of the drawing.

[0049] Referring now to FIG. 2, the adjustable support piece 2 is generally shown being used to support two concrete pavers 28 and further identifying exploded views of the adjustable support piece 2. More specifically, the adjustable support piece 2 is comprised of a base member 4, a tubular stem 8, and a crown member 6 which is interconnected to the upper portion of the tubular stem 8. For assembly purposes, the tubular stem 8 is threadingly

engaged to inner integral threads 10 positioned within the base member 4 on a lower end, and on an upper end to a crown member 6 which additionally has integral vertical threads 10 extending therefrom. Generally, the tubular stem 8 has an original length at least about 4 times greater than the height of each of the base member 4 and the crown member 6. In a preferred embodiment, the crown member 6 and base member 4 each have a vertical height of about 1.50 inches, while the tubular stem 8 has an original overall length of approximately 12 inches.

[0050] To effectively use the adjustable support piece 2 to selectively level a building surface, an approximate height of the desired total height of the adjustable support piece 2 is calculated depending on the approximate elevated height of the upper building surface. Once this height is determined, the tubular stem 8 is typically cut with a portable hand saw and miter box and/or a power saw such as a sawsall. By effectively cutting the length of the tubular stem 8 for any given application, a significant amount of flexibility can be obtained by creating an adjustable support piece 2 which has a minimum length of about 2.25 inches, and/or a total maximum height using one tubular stem of about 15 inches. This flexibility allows the adjustable support piece 2 to be used in a wide variety of applications to effectively support a building surface such as a patio deck.

[0051] In an alternative embodiment of the present invention shown in FIG. 3, two separate tubular stems 8 may be interconnected by the use of a threaded coupling 12 to make an adjustable support piece 2 having a length effectively two times longer than an adjustable support piece 2 which utilizes only one tubular stem 8. This flexibility is especially beneficial in applications where there is a significant elevation differential between one position of a building surface and another.

[0052] The base member 4 is generally comprised of a plastic material such as polyethylene or nylon which is resistant to mold, mildew, and rotting when exposed to moist conditions. In general, the base member 4 has a substantially planar lower surface adapted for resting on an opposing flat surface such as a concrete paver or ground surface. Extending upwardly from the substantially planar surface is a vertical cylindrical member with integral threads 10 positioned therein which are adapted for receiving the tubular stem 8. For reinforcement and support purposes a plurality of support fins 20 preferably interconnect the vertically extending tubular piece of the base member 4 to the substantially planar member on the bottom. In a preferred embodiment, the width of the base member 4 is about 8 inches although lengths between about 6 inches and 12 inches would be quite effective. As further seen in FIG. 3, the base member 4 may additionally have a plurality of drainage weep holes 30 to allow water to drain from within the base member 4. Additionally, a plurality of base apertures 18 may be provided to receive a nail, screw, or other piece of attachment hardware to interconnect the base member 4 to a lower building surface such as a wood beam, or concrete paver. Additionally, gloves or adhesive may be used to attach the base member 4 to a lower building surface in certain applications.

[0053] The tubular stem 8 is preferably comprised of a plastic material such as a polyethylene, polypropylene, nylon, or other similar material. Preferably the tubular stem

8 has integral threads extending from a first lower end to a second higher end, with a rate of twist of approximately 5 threads per inch. The tubular stem has a preferred normal diameter of between about 3 inches and 5 inches and more preferably about 4 inches. Additionally, the tubular stem **8** has a length of at least about four times the vertical height of either the base member **4** and crown member **6**. This increased initial length of the tubular stem **8** allows the assembled adjustable support piece **2** to be used initially in applications requiring a support piece with a length of about 24 inches, or the tubular stem can be quickly cut with a hand saw to provide a support piece **2** with a length of only about 2.25 inches.

[0054] Referring again to **FIG. 3**, the threaded coupling **12** is designed to be positioned between two tubular stem members **8** to effectively increase the overall length of the adjustable support piece **2**. Similar to the base member **4** and crown member **6**, the threaded coupling **12** is preferably constructed of a plastic material such as polyethylene, polypropylene, nylon or other similar materials known in the art and which effectively has a diameter which is substantially equivalent to the crown member **6** or base member **4**. Additionally, a plurality of support fins **20** may be used to provide structural support to the threaded coupling **12**.

[0055] The crown member **6** is sized and designed to be threaded onto the upper end of the tubular stem **8**. The crown member **6** has a substantially planar upper surface which is interconnected to a cylindrical member which has a plurality of integral threads extending downwardly to receive the tubular stem **8**. Similar to the base member **4**, a plurality of support fins **20** may be used to provide structural support between the substantially planar upper surface and the downwardly extending integral threaded portion. Additionally, the substantially planar upper surface of the crown member **6** may include a plurality of alignment tabs **14** which are oriented at substantially right angles. The alignment tabs **14** are designed to abut an edge surface of a concrete paver **28**, wood decking material **26** or any other type of building surface. Preferably, the alignment tabs **14** are comprised of a brittle plastic material which are integrally interconnected to the upper planar surface of the crown member **6** during manufacturing. The alignment tabs **14** are brittle to allow an installer to selectively break off one or more of the alignment tabs **14** during installation. Further, all of the alignment tabs **14** may be quickly broken off by the use of a hammer or other similar tool to provide a substantially flat surface.

[0056] Referring now to **FIG. 4**, an upper perspective view of an assembled adjustable support piece **2** is provided along with a non-skid shim pad **16** shown to the right. The non-skid shim pad **16** is preferably comprised of a rubber type material which fits on the upper planar surface of the crown member **6**. The slots positioned in the non-skid shim pad **16** are designed to matingly fit around the alignment tabs **14**. When in place, the non-skid shim pad effectively prevents the concrete pavers **28** or other building materials from sliding and slipping on top of the plastic upper planar surface of the crown member **6**. Although other type of materials could be used for the same purpose such as felt, cloth fabrics and other similar materials appreciated by one skilled in the art, products which have a substantially high coefficient of friction are most desirable.

[0057] Referring now to **FIG. 5** the adjustable support piece **2** is shown in an exploded view which identifies the base member **4**, the tubular stem **8**, the crown member **6**, and a crown spacer **22** positioned on top of the crown member **6** and below the non-skid shim pad **16**. The crown spacer **32** is designed to matingly engage the upper surface of a typical crown member **6** by fitting around the alignment tabs **14**, and thus providing approximately 0.75 inches in increased height to the adjustable support piece **2**. In a preferred embodiment the crown spacer **22** is about 0.5 - 0.75 inches high, although lengths ranging from about 1 inch to 4 inches may be used. Additionally, the crown spacer **22** preferably has a plurality of alignment tabs **14** extending vertically therefrom which are similar to the crown member **6**, and are used for the same purpose to prevent movement of the building surface.

[0058] Referring now to **FIG. 6**, an alternative embodiment of the present invention is provided. More specifically, a front perspective view is shown with the crown member **6** disconnected from the tubular stem **8** and base member **4**. However, as shown in the drawing the tubular stem **8** is integrally interconnected to an upper planar portion of the base member **4**, as opposed to being an independent component as seen in **FIGS. 1-4**. This embodiment allows the crown member **6** to be screwed down over the tubular stem **8** until contact is made with the upper planar surface of the base member **4**, and thus significantly reducing the total length of the adjustable support piece **2**. In fact, the total length between the lower planar surface of the base member **4** and the upper planar surface of the crown member **6** is only 2.25 inches. Thus, this configuration allows the adjustable support piece to be used in locations where the total vertical distance between the upper building surface and lower building surface is very small, i.e., less than about 2.5 inches.

[0059] Referring now to **FIG. 7**, a front perspective view of one embodiment of the present invention is provided herein which is designed to support a cylindrical pipe **54** or other similar device. **FIG. 7A** depicts the embodiment shown in **FIG. 7** with the pipe **54** removed for clarity. As shown in this particular embodiment, the adjustable support member **2** is comprised of a base member **4** and a crown member **6** with a threaded tubular stem **8**. The crown member **6** further comprises an arcuate shaped pipe support **62** which is designed to substantially fit the profile or external circumference of a pipe **54** or other similar material. As appreciated by one skilled in the art, the arcuate shaped pipe support **62** on the crown **6** may have any number of diameters or shapes depending on the size and diameter of the pipe.

[0060] In a preferred embodiment of the present invention, a low friction glide roller **64** is provided to allow for expansion and contraction of the pipe **54**, and which is made of a polypropylene, polyethylene, teflon or other similar materials with a low coefficient of friction. As appreciated by one skilled in the art, based on the desired elevation of the pipe **54** the adjustable support piece **2** may be selectively rotated upward or downward into the base member **4** to adjust the elevation of the pipe **54** as necessary. Further, the crown **6** may be comprised of a selectively removable head **40** in a preferred embodiment which can be selectively removed or attached to the crown, and which can be quickly interchanged as necessary.

[0061] Referring now to FIG. 8-8G, numerous embodiments of the present invention are shown herein which are used to support one or more building materials typically used in the construction industry. These include 2x4 studs, 4x4 studs, fascia boards and other similar materials. Referring now to FIG. 8 and 8A, in this particular embodiment a selectively removable multi-purpose head member 40 is provided with a plurality of alignment braces 42 positioned at substantially right angles to support a building stud 56 or other similar materials which are positioned at right angles.

[0062] FIG. 8D represents an alternative embodiment of the present invention wherein a fascia/rim joist may be positioned against one alignment brace 42. FIG. 8B depicts an alternative embodiment wherein a pair of opposing alignment braces 42 are adapted for supporting two 2x4 building studs 56, or one 4x4 building stud. FIG. 8C is an alternative embodiment wherein three 2x4 studs 56 may be supported by opposing alignment braces 42. FIG. 8E is a front perspective view of the embodiment shown in FIG. 8B, and identifying the position of the stud 56 during use. As appreciated by one skilled in the art, the geometric configuration of the alignment braces 42 are almost limitless, and can be designed to support or align any type of building material, including studs 56, facie boards, grating 48, pavers, etc.

[0063] Referring now to FIG. 8F-8G, the adjustable support piece 2 with the multipurpose head 40 is shown in use with a plurality of studs 56 and building planks 52 which are positioned on top of the adjustable support piece 2. As depicted in this drawing, numerous embodiments of the present invention may be used in one particular design to support one or more building materials in a preferred design layout. As additionally seen in FIG. 8F-8G, sloped compensation shims 50 may be used as necessary to support the adjustable support pieces 2 in a vertical relationship when used on inclined flooring or a non-level ground surface to assure that the building materials are level.

[0064] Referring now to FIGS. 9-9C, an alternative embodiment of the multi-purpose head member 40 of the present invention is shown herein. More specifically, in FIG. 9 the multi-purpose head 40 is shown detached from the adjustable support piece crown member 6, and which is held in place with one or more attachment pins 44 which are selectively aligned with one or more securement apertures 46. As further appreciated by one skilled in the art, other types of attachment means may be used to selectively attach and remove the multi-purpose head member 40 from the crown 6 of the adjustable support piece 2. The multi-purpose head 40 in the embodiment shown in FIG. 9 is adapted with a rotating slot 60 which is adapted for use with a flathead screwdriver or other similar device to rotate the multi-purpose head 40 with respect to the base member 4 and to either raise or lower the elevation of the adjustable support piece as necessary.

[0065] FIG. 9A of the present invention is a front cross-sectional elevation view of the embodiment shown in FIG. 9 taken at line "AA", while FIG. 9B is a top plan view of FIG. 9A shown with a piece of grating 48 positioned thereon. FIG. 9C is an alternative embodiment of the invention shown in FIG. 9 which uses an alternative type of drive head suitable for use with an allen wrench, hex wrench or other type of tool with a preferred geometric profile. As

appreciated by one skilled in the art, the geometric shape or design of the multi-purpose head 40 and associated alignment pin 58 may be any various shape or size based on the required needs of the contractor or home builder.

[0066] Referring now to FIG. 10, an alternative embodiment of the present invention is shown herein wherein the multi-purpose head 40 is comprised of a single, substantially cubed shaped alignment pin 58 which is adapted for positioning a sheet of grating 48, as shown in the top plan view of FIG. 10B. FIG. 10A represents a front elevation view of FIG. 10, and further identifies the attachment pins 44 which are used to selectively interconnect the multi-purpose head 40 to the crown member 6 of the adjustable support piece 2.

[0067] Referring now to FIG. 11-11B, yet another embodiment of the present invention is shown herein in perspective, front elevation and plan views, respectively. More specifically, two alignment pins 58 are provided on the multi-purpose head 40 and which are adapted for engaging two distinct sheets of grating material 48 as shown in FIG. 11B.

[0068] Referring now to FIG. 12, yet another embodiment of the present invention is provided herein which is shown in a front elevation view in FIG. 12 and a top plan view in FIG. 12A. In this embodiment, the multi-purpose head 40 is comprised of four distinct alignment pins 58 which are spaced to receive between one or four sheets of grating material in a given orientation. As appreciated by one skilled in the art, the multi-purpose head 40 and associated alignment braces 42 and attachment pins 44 may be comprised of a plastic material such as polypropylene, polyethylene, fiberglass, wood, metal or other similar materials. Furthermore, although drawings identify attachment pins 44 for interconnection to the crown member 6 of the adjustable support piece 2, other types of attachment means commonly known in the art may be suitable for the same purpose. More specifically, adhesives, clamps, brackets, screws, nails, and other types of attachment hardware may be suitable for selectively interconnecting the multi-purpose head 40 to the crown member 6 of the adjustable support piece 2 to provide a suitable work surface which is adapted to support one of a number of types of construction materials such as building planks 52, grating materials 48, pipes 54 or other similar materials which require support in the construction industry.

[0069] For clarity purposes, a detailed list of the various components of the present invention and the associated numbering is provided herein.

Number	Component
2	Adjustable support piece
4	Base member
6	Crown member
8	Tubular stem
10	Threads
12	Threaded coupling
14	Alignment tabs
16	Non-skid shim pad
18	Base apertures
20	Support fins
22	Crown spacer
24	Compacted soil
26	Wood decking
28	Concrete paver

-continued

Number	Component
30	Drainage weep holes
32	Crown member upper planar surface
34	Base member upper planar surface
36	Tubular stem first end
38	Tubular stem second end
40	Multi-purpose head
42	Alignment braces
44	Attachment pins
46	Securement apertures
48	Grating
50	Shims
52	Building plank
54	Pipes
56	Stud
58	Alignment pin
60	Rotating slot
62	Pipe support
64	Glide roller

[0070] While various embodiments of the present invention have been described in detail, it is apparent that modification and adaptations of those embodiments will occur to those skilled in the art. However, it is to be expressly understood that such modifications and adaptations are within the scope of the present invention as set forth in the following claims.

What is claimed is:

1. A removable, multi-purpose head adapted for selective use with a vertically adjustable support member, comprising:

a substantially planar surface;

an attachment means interconnected to a lower surface of said substantially planar surface which is adapted for removable interconnection to said vertically adjustable support member; and

an alignment means interconnected to an upper surface of said substantially planar surface which is adapted for at least one of supporting, aligning or positioning an object at a specific location.

2. The removable, multi-purpose head of claim 1, wherein said attachment means comprises at least one pin projecting substantially downward which is adapted for operable engagement to an upper surface of a crown positioned on said vertically adjustable support member.

3. The removable multi-purpose head of claim 1, wherein said attachment means comprises a plurality of apertures extending through said substantially planar surface which are adapted to receive an attachment hardware.

4. The removable, multi-purpose head of claim 1, wherein said alignment means comprises at least one alignment pin projecting upward in a substantially vertical direction which is operatively sized to receive an aperture in a sheet of grating material.

5. The removable, multi-purpose head of claim 1, wherein said alignment means comprises a pair of opposing rails extending substantially upwardly which are adapted for receiving a building material such as a structural stud.

6. The removable, multi-purpose head of claim 1, wherein said alignment means comprises an arcuate shaped support mechanism adapted for supporting a pipe.

7. The multi-purpose head of claim 1, wherein said arcuate shaped support mechanism further comprises a glide roller interconnected thereto.

8. The removable, multi-purpose head of claim 1, wherein said alignment means comprises a plurality of upwardly projecting alignment pins which are adapted for orienting a building material.

9. The removable, multi-purpose head of claim 1, wherein said alignment means comprises four vertically extending rails positioned in an opposing relationship, wherein two distinct building materials may be positioned at substantially right angles to one another.

10. The removable, multi-purpose head of claim 1, wherein said alignment means comprises a cylindrical shaped post extending upwardly in a substantially vertical direction.

11. The removable, multi-purpose head of claim 1, further comprising an elevation adjustment means which facilitates rotating said vertically adjustable support member to lower or raise said vertically adjustable support member.

12. The removable, multi-purpose head of claim 1, wherein said elevation adjustment means comprises a drive head which is adapted for receiving at least one of a screwdriver, an allen wrench, and a torx wrench.

13. A method adapted for selectively adjusting a height of a building surface, comprising the steps of:

determining an approximate height requirement of the building surface;

cutting a threaded tubular stem with a first end and a second end with a crown interconnected thereto to accommodate said approximate height requirement;

interconnecting a base member to a first end of a said tubular stem, to form an adjustable support piece;

adjusting a total length of said adjustable support piece by rotating said threaded tubular stem, wherein said crown can be positioned at a desired vertical elevation; and

attaching a head portion to said crown, said head portion having a geometric profile adapted to support, align or position an object in a specific vertical or horizontal location.

14. The method of claim 13, wherein said attaching step comprises engaging at least one pin which extends downwardly from a lower surface of said head portion into at least one aperture in said crown.

15. The method of claim 13, wherein said attaching step comprises applying an adhesive between a lower surface of said head portion and an upper surface of said crown.

16. The method of claim 13, wherein said attaching step comprises interconnecting said head portion to said crown portion with a piece of hardware.

17. The method of claim 13, wherein said geometric profile of said head comprises at least one rail adapted to align a substantially planar building material.

18. The method of claim 13, wherein said geometric profile of said head comprises at least one upwardly projecting alignment pin.

19. The method of claim 13, wherein said geometric profile of said head comprises at least one non-linear shaped cradle which is adapted for supporting a pipe.

20. The method of claim 13, wherein said head portion further comprises an elevation adjustment means which is

adapted for receiving at least one of a screwdriver, an alien wrench, a crescent wrench and a torx wrench.

21. The method of claim 13, further comprising the step of interconnecting a coupling and a non-threaded second tubular stem to said tubular stem to increase a total length of said adjustable support piece.

22. The method of claim 13, wherein at least a portion of said adjustable support piece is comprised of a plastic material.

23. An apparatus adapted for selectively adjusting and aligning an object in a preferred vertical and horizontal location, comprising:

a base;

a tubular stem having threads on at least a first end and a second end, said first end threadingly engaged to said base;

a crown interconnected to said second end of said tubular stem;

a head having an upper surface with an alignment means for supporting, or aligning an object, and a lower surface with an attachment means for selectively interconnecting said head to said crown.

* * * * *