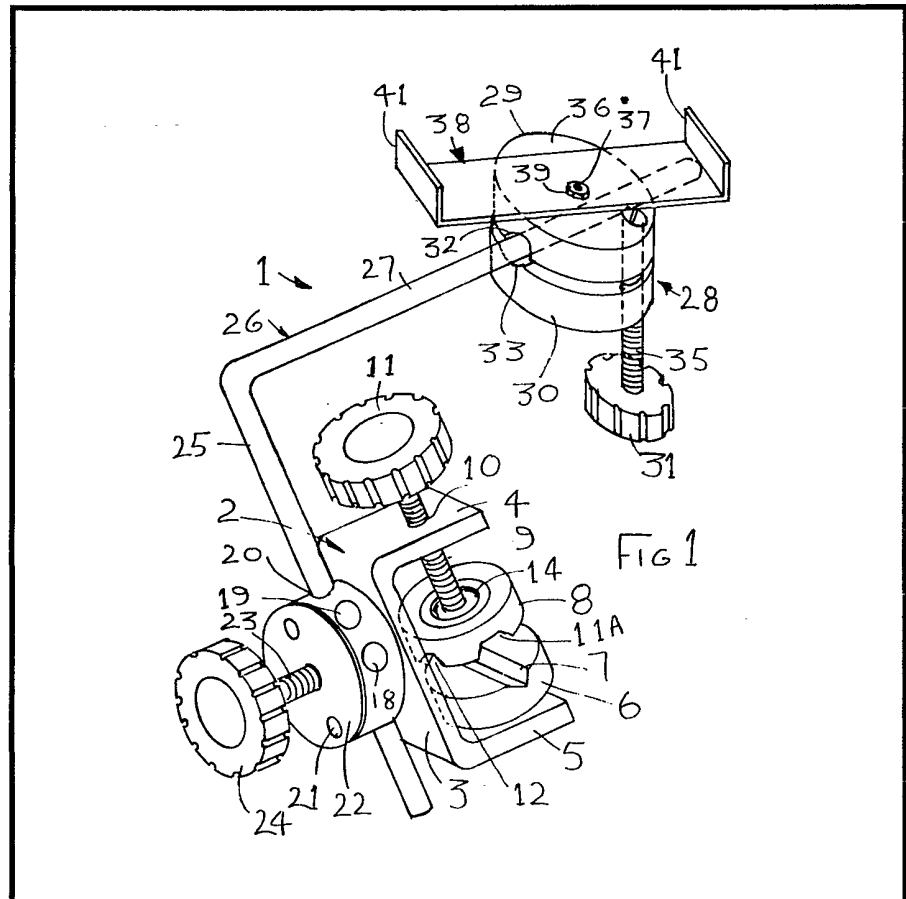


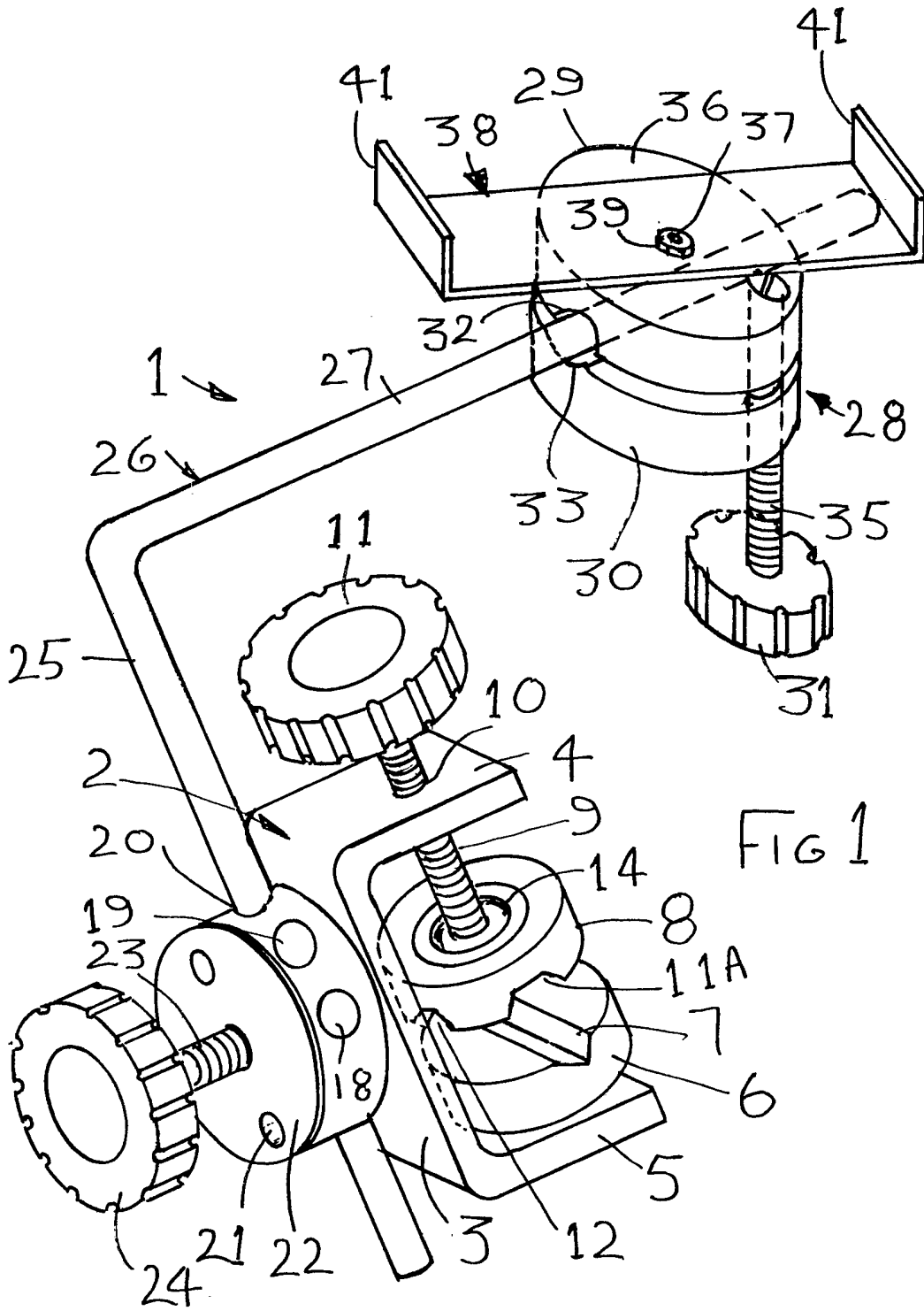
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E2A  
(71) Applicant  
Andrew Christo Pittas  
1 Wroxham Gardens  
London N11 2AY  
(72) Inventor  
Andrew Christo Pittas  
(74) Agents  
A P Russell-Rayner

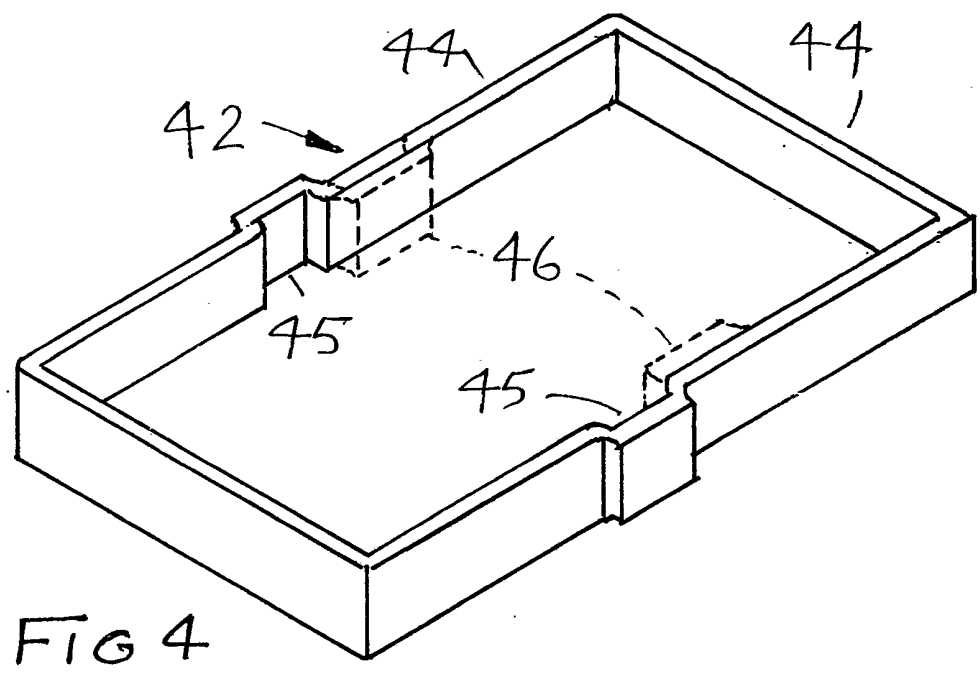
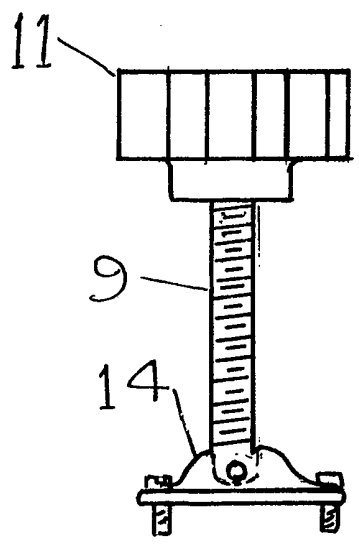
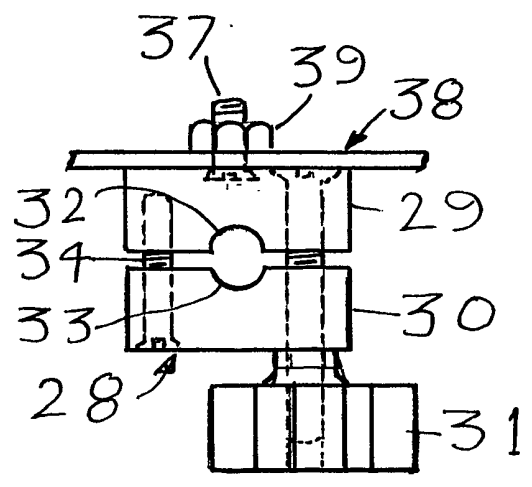
(54) **Multi-setting mounting as-  
sembly for articles**

(57) A selectively adjustable assem-  
bly for supporting articles in any  
one of a very large number of pos-  
sible settings. The assembly in-  
cludes a support member 26 pro-  
viding two parts arranged at an  
angle to each other; a first clamping  
unit 2 having a vice for attachment  
to a support and a first clamp unit  
which allows several connection set-  
tings with one of the support mem-  
ber parts and at any position along  
its length and at any orientation  
thereto; and a second clamping unit  
28 with a second clamp which al-  
lows connection with the other part  
of the support member at any posi-  
tion along its length and at any  
orientation thereto. The second  
clamp also serves to provide a  
mounting 38 for the article to be

supported, and facility for relative  
movement if required.







## SPECIFICATION

**Multi-setting mounting assembly for articles**

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BACKGROUND OF THE INVENTION  
FIELD OF THE INVENTION

This invention relates to a multi-setting mounting assembly for locating an article, element, object or the like in a desired position in relation to a reference location or position.

In particular the present invention is concerned with the provision of a multi-setting mounting assembly for enabling a work surface, tray or the like to be oriented in a required position with respect to a reference location or position. In this specification the term reference position indicates a location at which the mounting assembly is itself mounted secured or attached.

## THE PRIOR ART

It is known to mount articles such a work surfaces by means of supporting arrangements which allow for a degree of selective positioning of the work or support surface relative to a predetermined location.

One common form of such a supporting arrangement involves positionally adjustable rods axially movable relative to a support means and a second form involves a ball and socket type of mounting. However, these known systems generally involve inherent limitations in their range of movements in that the distance, for example, in the case of the ball and socket arrangements, that of the work surface from its supporting ball and socket is essentially a fixed quantity. That is to say the known ball and socket arrangements essentially provide for only angular adjustability relative to a reference location or position.

In other words the previously suggested arrangements have limitations in the variety and number of adjustment possibilities provided.

## SUMMARIES OF THE INVENTION

According to an aspect of the present invention there is provided a selectively adjustable assembly for supporting an article, element, object or the like in a desired positional setting with respect to a reference location or position: the assembly comprising a support member providing two elongate parts arranged at an angle to each other: a first clamp unit including a first clamp by means of which the assembly can be attached to a support for the purposes of use, and a second clamp by means of which one of the support member parts can be attached to the first clamp unit at any selected position along the length of the associated support member part and at any orientation relative to this associated part; and

a second clamp unit including a first clamping means by which the second clamp unit can be mounted to the other part of the support member at any selected position along the length of said other part and at any orientation to said other part; said second clamp unit also providing a support surface for said article, element, object or the like.

Preferably the second clamp of the first clamp unit is adapted to provide for different mounting orientations of the support member with respect to the remainder of the first clamp unit.

Conveniently, the second clamp unit includes means whereby said article, element, object or the like may be angularly displaced relative to the support surface thereof.

## BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the invention and to show how to carry the same into effect reference will now be made to the accompanying drawings in which:

*Figure 1* is an isometric view of a mounting assembly incorporating features of the invention when adapted for the support of a readily removeable tray or the like;

*Figure 2* is an elevation of a detail of the assembly of Fig. 1;

*Figure 3* is an elevation of a second detail of the assembly of Fig. 1, and

*Figure 4* is an isometric view of a tray unit for use with the assembly of Fig. 1.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Figs. 1 to 3 a support arm anchoring unit 1 includes a generally channel shaped element 2 having a base 3 and walls 4 and 5. A circular anvil or cramping plate, conveniently of plastics material, is secured to the wall 5 by screws (not shown). The plate 6 has a location groove 7 extending generally parallel to the channel base 3. A co-operating clamping or cramping plate 8 is carried at one end of a screw 9 which is engaged in a screw threaded bore 10 in the wall 4. An operating head, wheel or handle 11 is secured to the other end of the screw 9. The connection between the screw 9 and the plate 8 permits relative rotation and a limited amount of rocking or tilting movement to facilitate the gripping of a rod, bar or the like between the plates 6 and 8.

The plate 8 has orthogonally arranged grooves 11A and 12 each of the grooves being able to co-operate with the groove 7. The grooves 11A and 12 have different cross sections one being of triangular cross section and the other of trapezoidal cross section.

The rotatable connection between the screw 9 and the plate 8 includes a domed plate 14 secured to the plate 8 by screws. The domed part has a centrally positioned through bore through which the lower end of the screw 9

enters. The screw end is held against axial disengagement by a pin 15 or the like projecting transversely of the screw. The arrangement described not only allows rotation between the screw 9 and the plate 8 but also permits the required tiltability.

The main unit 1 additionally includes a support bar member mounting block 16 which includes a main body 17 provided with three intersecting bores 18, 19 and 20 which are equiangularly spaced at 45° to each other. The block 16 is secured by screws 21 to the base of the channel shaped element 2. In the case when the block 16 is formed of a plastics material a metal face plate 22 is included to provide an abutment surface for the retaining screws 21. A threaded central bore which is perpendicular to the plane containing the axes of the bores 18, 19 and 20 is intended to receive a locking screw having an operating head, wheel or handle 24 to enable manual rotation of the screw 23.

The bores 18, 19 and 20 are of such diameter as to provide a relatively close sliding fit for a first part 25 of a rod member 26. The rod is L-shaped and thus includes a second part 27. The two parts are conveniently perpendicular to each other. However, other angular relationships could be used, if desired. Whilst the axial lengths of the two parts 25 and 27 are conveniently of the same length one part can, if preferred be longer than the other.

The rod part 25 can be selectively inserted into any of the bores 18, 19, and 20 and held in a required position therein by the operation of the operating head 24.

A secondary clamping unit 28 is attachable to the rod part 27 and includes two generally cylindrical elements 29 and 30 which can be cramped to the part 27 by means of an operating head, wheel or handle 31.

The elements 29 and 30 have grooves 32 and 33 respectively directed lengthwise of the facing surfaces thereof, the grooves 32 and 33 being opposite each other to enable the gripping of the rod part 17 therebetween. The elements are connected together to one side of the grooves 32, 33 by a first screw 34 (Fig. 3) which is such as not to fully tighten the elements one against the other. This first screw 34 passes fully through the element 30 and screws into the element 29. A second screw 35 which is provide a part of the operating head arrangement screws into the part 29 and passes through the element 30 with clearance to project outwardly therefrom to receive the operating head 31. In practice, the screw 35 would be of such length that on tightening the head 31 fully against the element 30 the screw would not project through the head 31. In the Fig. 1 the length of the screw has been increased for the purposes of clarity of illustration.

The arrangement of the screws 34 and 35

is such that on entering the rod part 27 into the nip between the facing grooves 32 and 33 and on tightening the head 31 against the element 30 a cramping force is exerted which locks or otherwise firmly secures the second clamp unit 28 onto the part 27.

It will be understood that the unit 28 can be located at any desired position lengthwise of the part 27 and also at any required orientation about the part 27. That is with the axes of the screws 34, 35 set at any angle to the vertical or horizontal.

The surface 36 of the part 29 remote from the grooved surface thereof provides a mounting surface for an article, element, object or the like. Thus a tray work surface or the like can be attached to the surface 36.

The mounting of the article, element object or the like on the surface 36 can be positionally fixed with respect to the surface 36 or the mounting can be such as to permit relative movement, for example rotation, about an axis perpendicular to the axis of the part 27, or slidable movements relative to the surface.

In the Fig. 1 an embodiment of a mounting system enabling rotation is illustrated. The system includes a bolt 37 is engaged in a through bore in the part 29 and a bracket 38 is held in place by a nut 39 such that the bracket is able to rotate about the bolt 37. The tightening of the nut 39 is such that such rotation is only possible on application of a pre-determined force which is of such magnitude that the bracket will not rotate when carrying an acceptable load.

The bracket 38 has a main body or strip 40 terminating in ends walls 41 which are intended resiliently to engage with a tray or other support surface 42.

The tray which is illustrated in Fig. 4 in an upside down position includes a main panel 43 having a peripheral wall or skirt 44 and a strengthening rim (not shown) extending around the perimeter of the upper surface of the main panel.

The wall or skirt is provided along each longer side thereof with a recess 45 which is dimensioned as to be able to receive and resiliently locate the end walls 41 of the bracket 39. It will be appreciated that the relative dimensions of the bracket and tray in conjunction with the physical characteristics of the material of the tray i.e., plastics material (for example thermo-foamed or injection moulded plastics material or glass fibre reinforced plastics material) enable the desired firm resilient fit of the walls 41 in the recesses in the tray wall. It is also possible to provide for the tray to be mounted in an inverted position. This is achieved by providing an additional pair of recesses which are shown in dashed lines in Fig. 4 at 46.

It is convenient briefly to consider the various positions which can be provided for the tray in relation to the various adjustment

possibilities afforded by the above described assembly shown in the Drawings.

Adjustment (a). Rotation of the bracket 39 about the bolt 39. This affords an angular range of settings over 360° relative to the surface 36 of the second clamp unit 28.

Adjustment (b) Rotation of the second clamp unit 28 about the rod part 27. This rotation is over a possible 360°.

Adjustment (c) The particular positioning of the second clamp unit lengthwise of the part 27. The extent of adjustment is determined by the length of the part 27.

Adjustment (d) In cases where the support member parts are of different lengths the parts can be interchanged thereby providing a different range of the Adjustment (c).

Adjustment (e) The selection of the extent to to which the part 25 is engaged in the selected bore 18, 19 or 20. It should be noted that Adjustment (d) also varies the range of positional movement for Adjustment (e).

Adjustment (f) The part 25 can be rotated to any selected position through an angular range of 360°.

Adjustment (g) The support member part 25 or 27 can be entered into any one of the bores 18, 19 and 20 from either end of the bores. This gives six possible variations in the mounting of the support member 25.

Adjustment (h) The selection of the orientation relative to the vertical of the clamp unit 2 when attaching this clamp unit to a support.

It will be understood from the forgoing description that Adjustments (a), (b), (c), and (d) are controlled by operating head 31: that Adjustments (e), (f) and (g) are controlled by operation of the operating head 24 and that the Adjustment (h) is under the control of the operating head 11.

It can be readily shown that an extremely large number of positional settings of the tray are possible as a result of the above mentioned adjustments available.

#### CLAIMS

1. A selectively adjustable assembly for supporting an article, element, object or the like in a desired positional setting with respect to a reference location or position: the assembly comprising a support member providing two elongate parts arranged at an angle to each other: a first clamp unit including a first clamp by means of which the assembly can be attached to a support for the purposes of use, and a second clamp by means of which one of the support member parts can be attached to the first clamp unit at any selected position along the length of the associated support member part and at any orientation relative to this associated part; and a second clamp unit including a first clamping means by which the second clamp unit can be mounted to the other part of the support

member at any selected position along the length of said other part and at any orientation to said other part; said second clamp unit also providing a support surface for said article, element, object or the like.

2. A selectively adjustable assembly as claimed in claim 1, wherein the second clamp of the first clamp unit includes means whereby the support member can be positioned at selectively different orientations with respect to the remainder of the clamp unit.

3. A selectively adjustable assembly as claimed in claim 2, wherein the first clamp unit includes a block having intersecting through bores, whose axes lie in a common plane or planes parallel to each other and which are capable of slidably receiving the parts of the support member; and means for locking the parts in place after insertion of a said part in a bore.

4. A selectively adjustable assembly as claimed in claim 1 or 2, and including a connector member rotatably mounted on said second clamping unit to provide for rotation of an article, element, object or the like relative to the support surface.

5. A selectively adjustable assembly as claimed in claim 1 or 2, wherein the first clamp of the second clamp unit includes means for enabling resilient engagement with a tray or the like having a working surface greater than that of the support surface of the second clamping unit.

6. A selectively adjustable assembly constructed and arranged to operate substantially as hereinbefore described with reference to the Accompanying Drawings.