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Carnevali

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(54) **UNIVERSALLY POSITIONABLE MOUNTING DEVICE**

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(*) Notice: This patent is subject to a terminal disclaimer.

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(22) Filed: **Dec. 7, 2000**

Related U.S. Patent Documents

Reissue of:

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U.S. Applications:

(63) Continuation of application No. 08/689,408, filed on Aug. 7, 1996, now abandoned, and a continuation of application No. 08/574,415, filed on Dec. 15, 1995, now abandoned, and a continuation of application No. 08/375,568, filed on Jan. 13, 1995, now abandoned, and a continuation of application No. 08/167,500, filed on Dec. 14, 1993, now abandoned.

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(52) **U.S. Cl.** **248/181.1; 248/276.1; 248/288.31; 248/484**

(58) **Field of Classification Search** **248/481, 248/288.51, 181.1, 288.31, 482, 483, 484; 403/56, 90, 114, 132, 143, 144**

See application file for complete search history.

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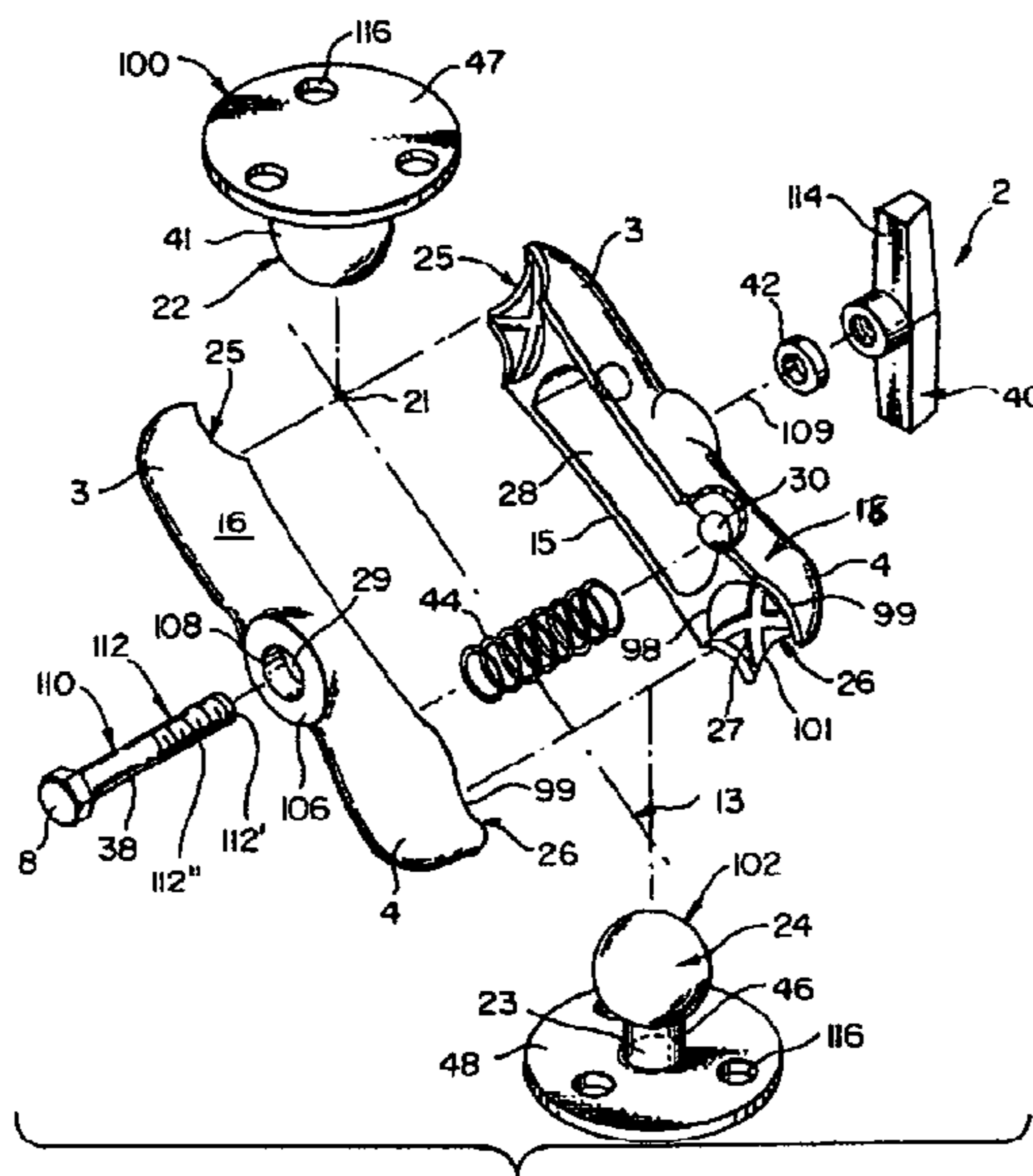
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(57) **ABSTRACT**

Couplers with ball-shaped heads are mounted on a pair of objects, and a split arm assembly is interposed along a line of juncture between the pair of couplers and clamped together about the heads thereof. However, before that time, a spring is interposed between the pair of elongated arm sections in the assembly to produce a differential in the reaction of the respective pairs of end portions in the arm sections to the clamping forces so that the assembly is formed into a bifurcated arm assembly at one of the heads. That one head is also compressible so that after the split arm assembly has been rotated in relation to the one head, or vice versa, to set the angle of the line of juncture with respect to one or both of the objects, further clamping of the assembly operates to interlock the assembly with the heads of the pair of couplers to rigidify the connection made by the assembly between the pair of heads.

61 Claims, 5 Drawing Sheets



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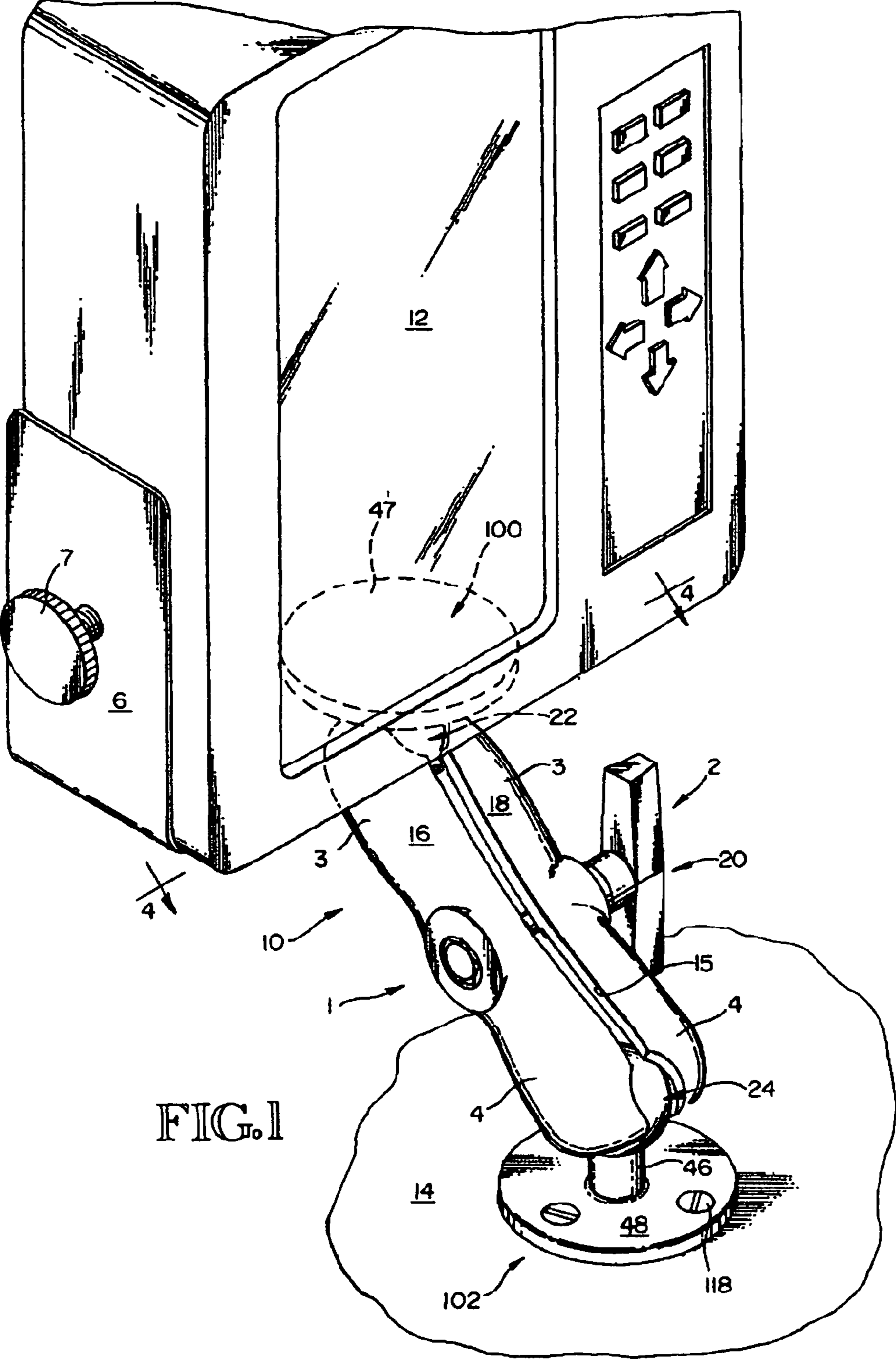
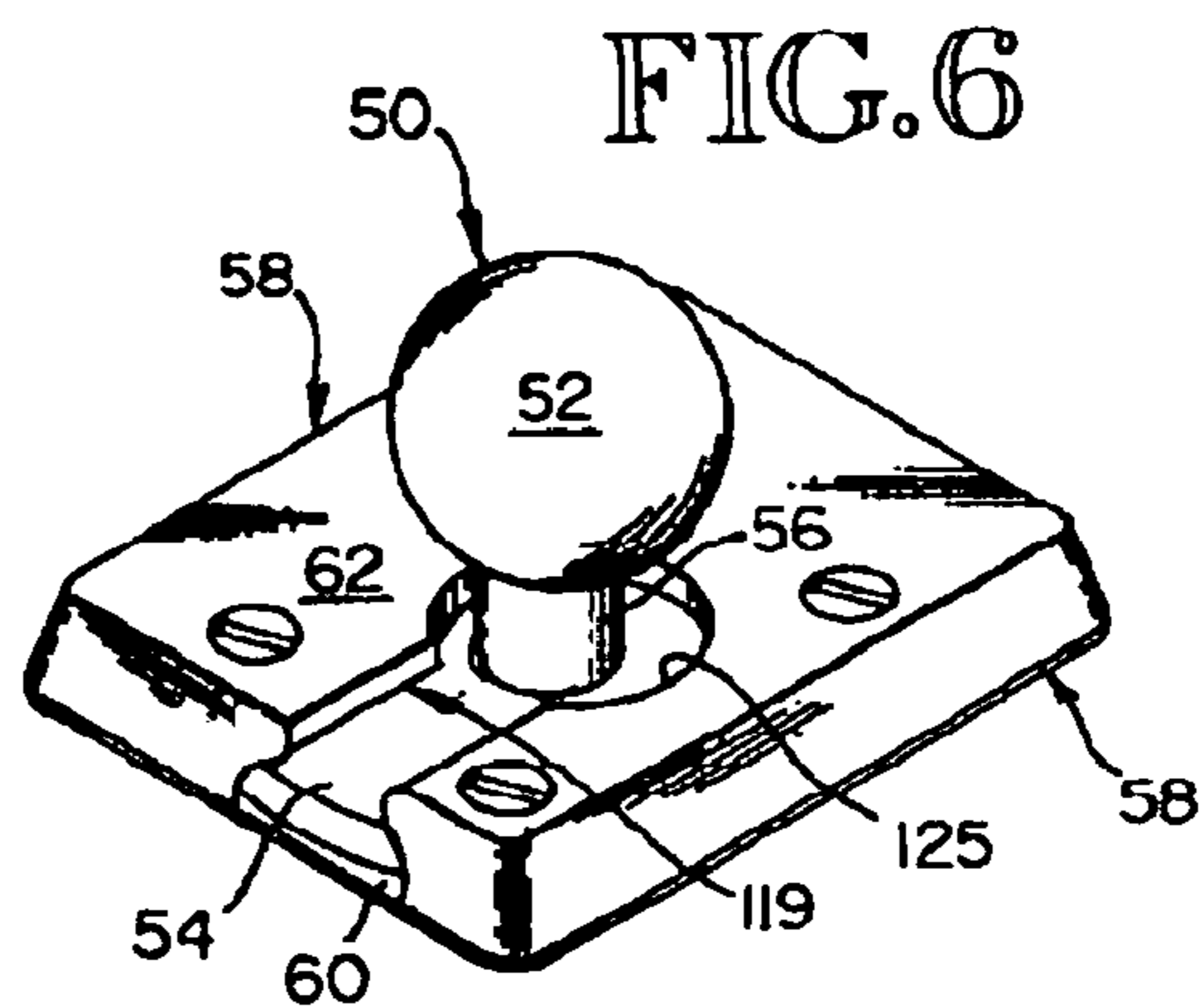
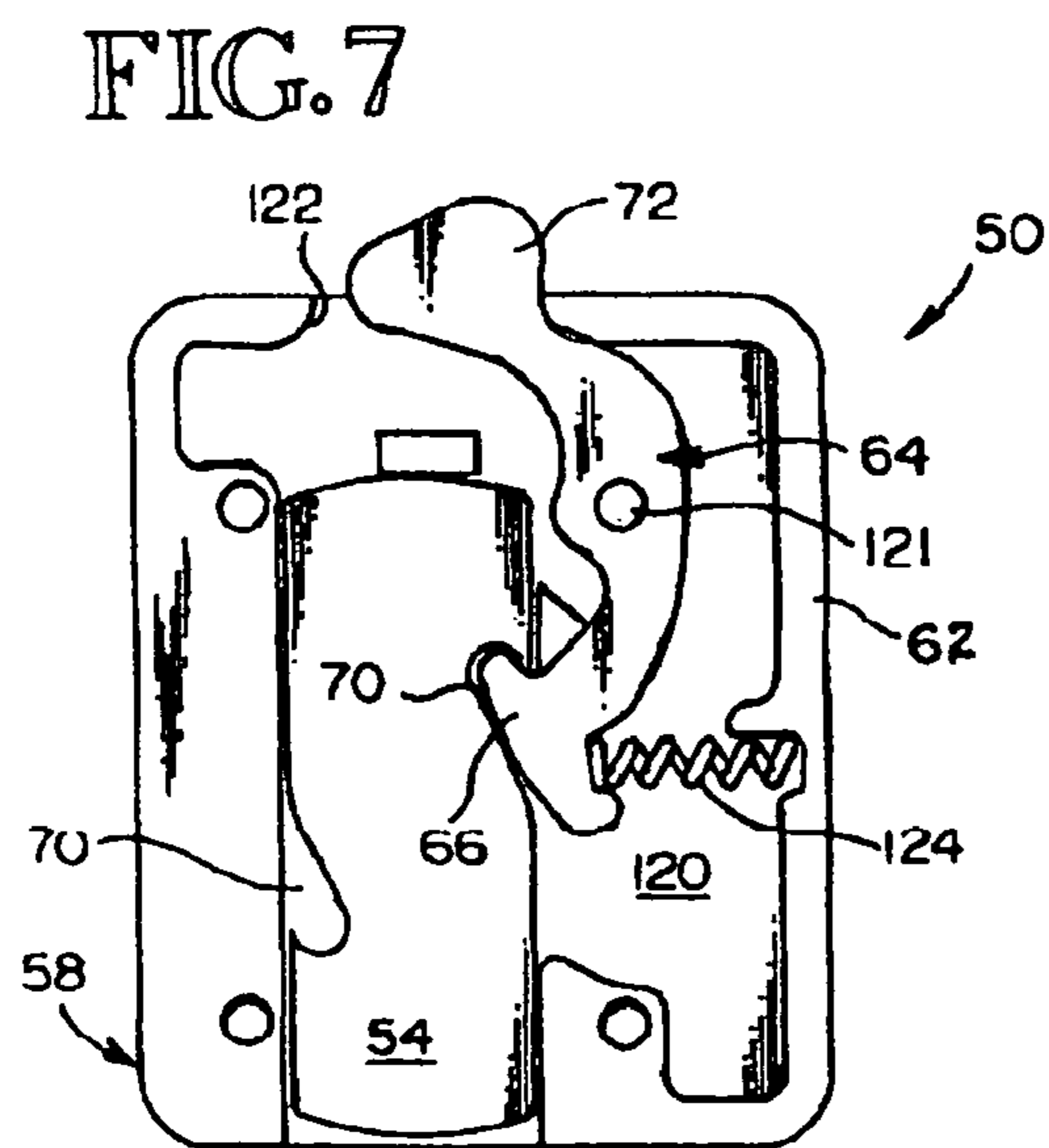
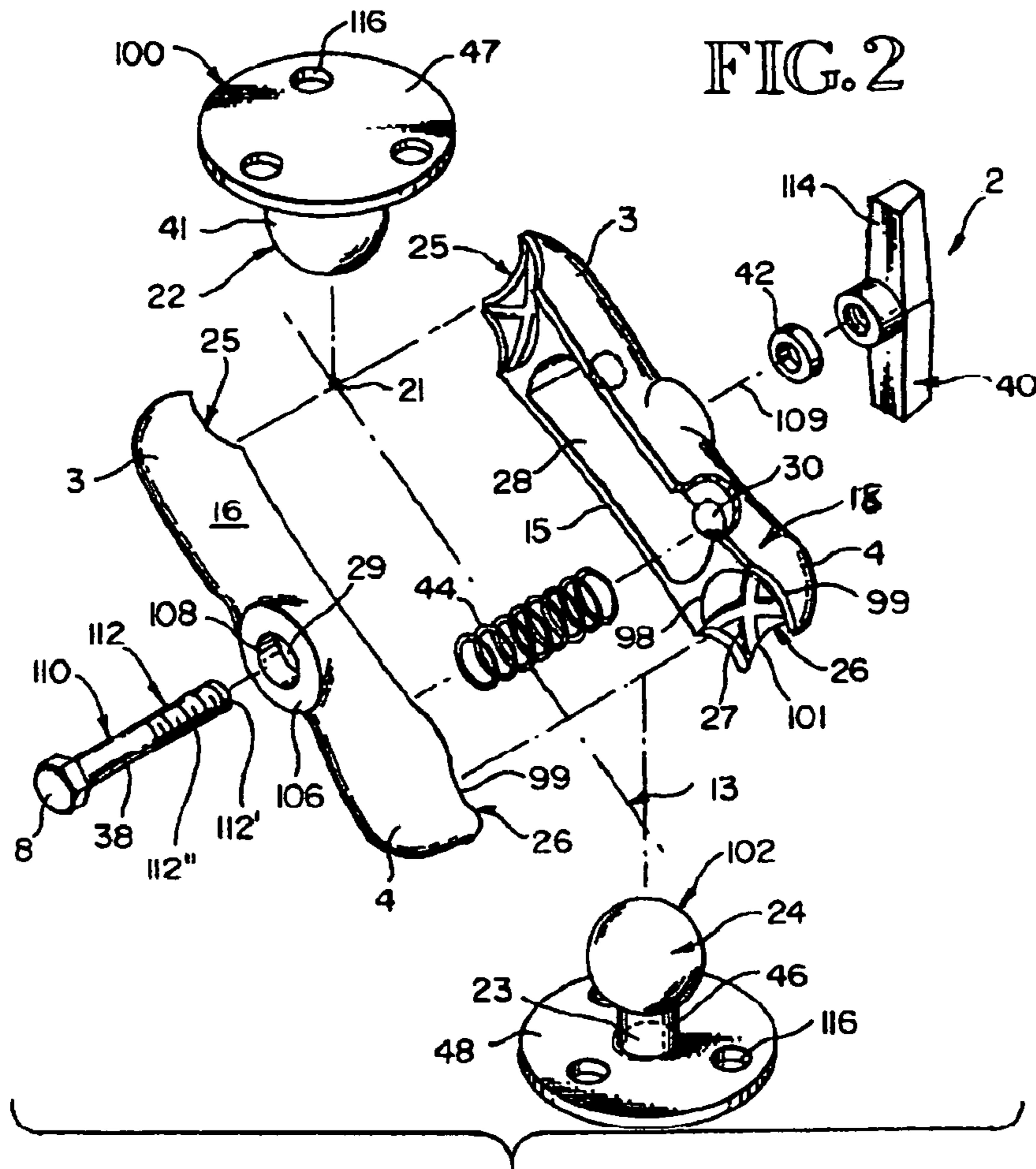


FIG. 1



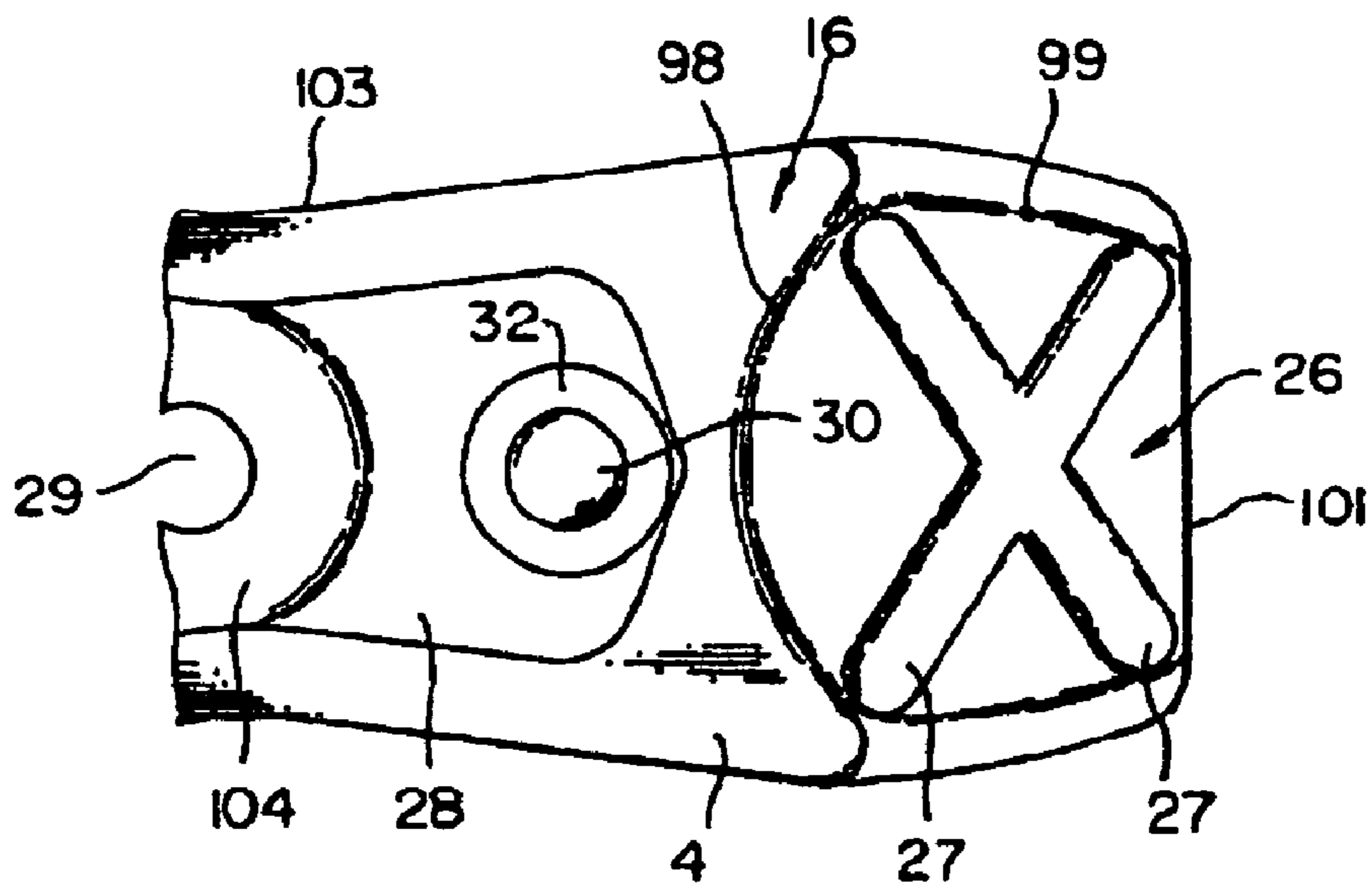


FIG. 3

FIG. 4

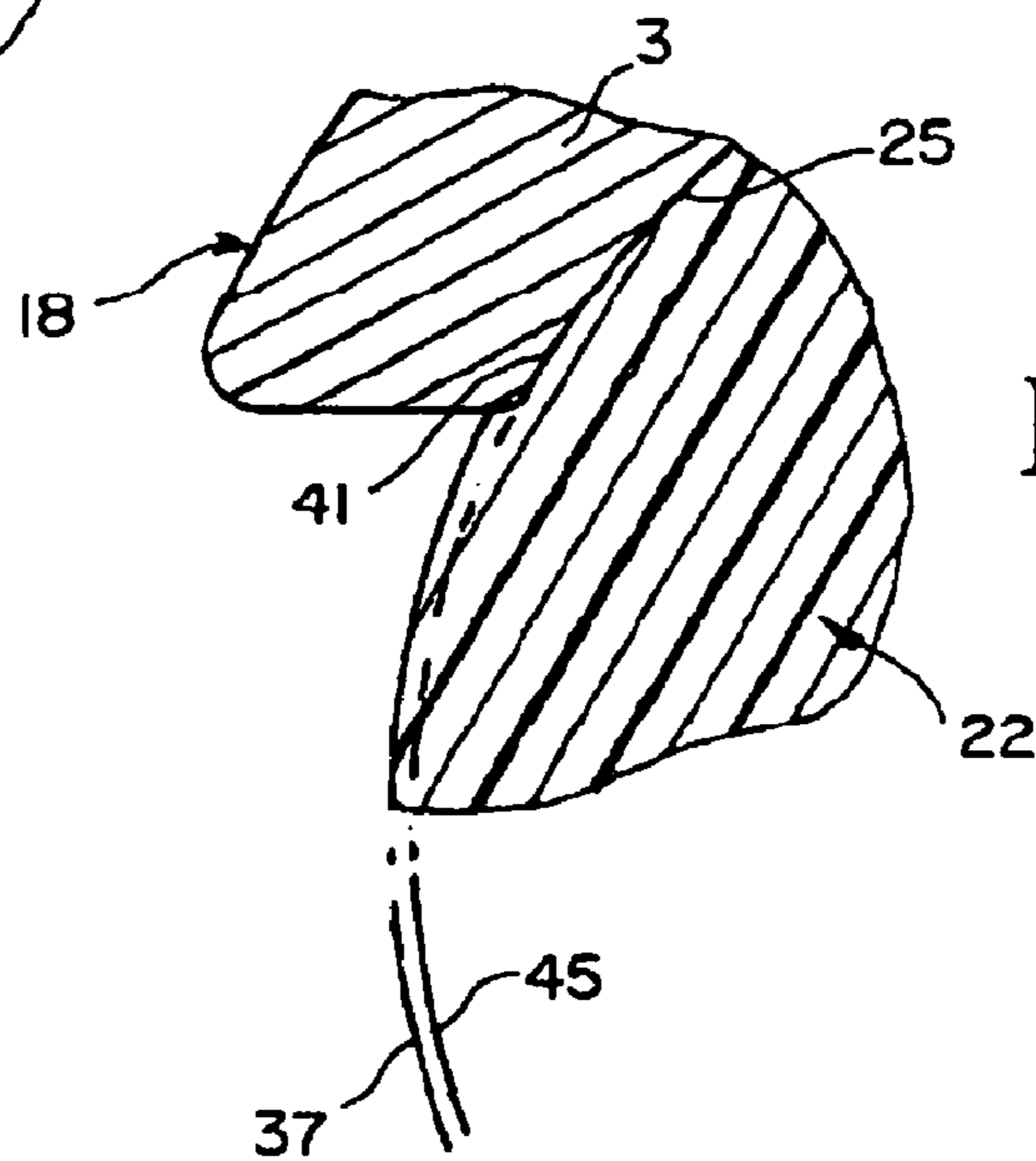
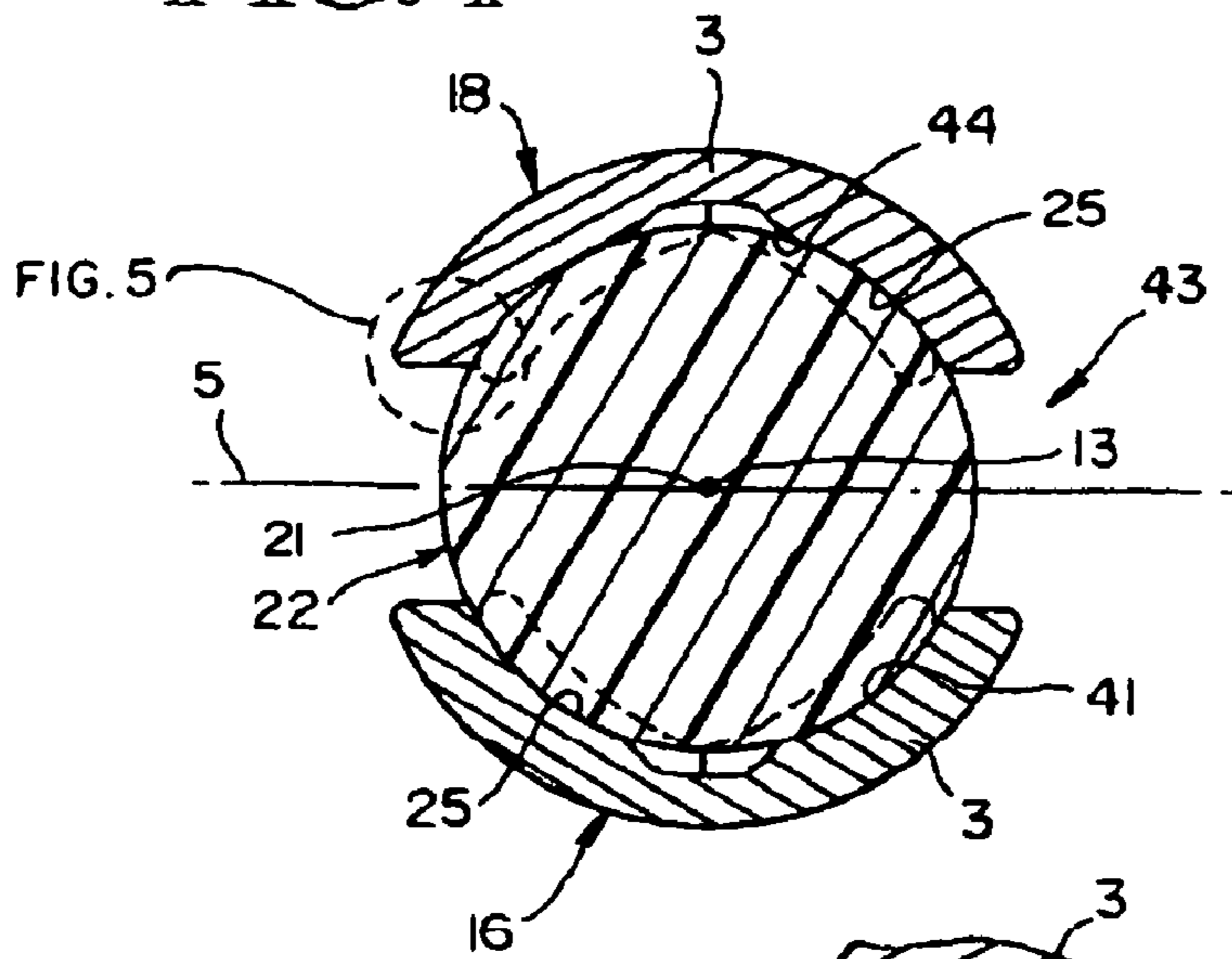
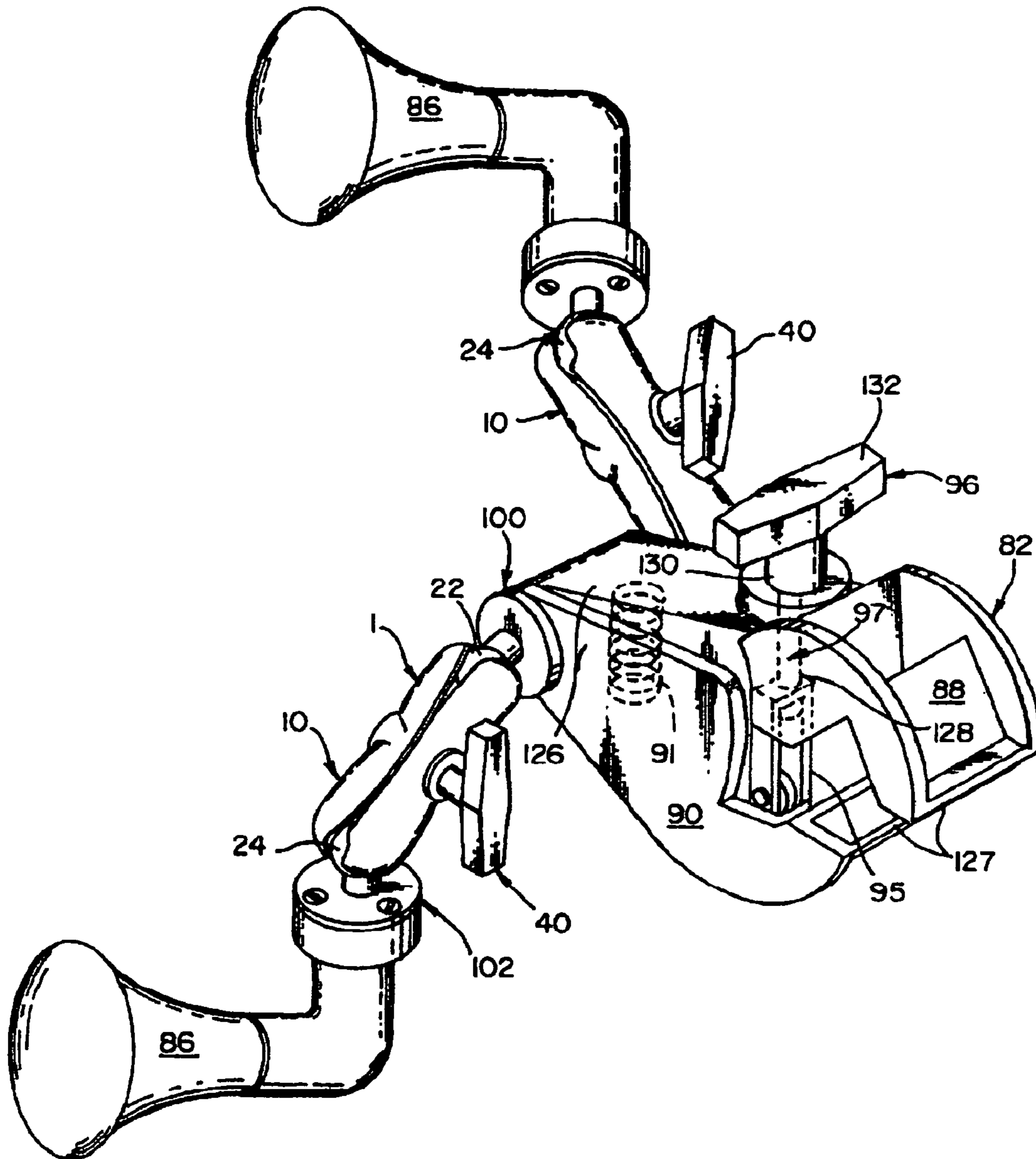


FIG. 5

FIG. 8



UNIVERSALLY POSITIONABLE MOUNTING DEVICE

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

RELATED APPLICATIONS

Notice: More than one reissue application has been filed for the reissue of U.S. Pat. No. 5,845,885. The reissue applications are application Ser. No. 09/733,691 (the present application); Design patent application Ser. No. 29/370,076 (which is a continuation of Ser. No. 09/733,691), now abandoned; Ser. No. 10/300,951 (which is a continuation of Ser. No. 09/733,691), now U.S. Pat. No. Re. 42,060; and Ser. No. 10/991,325 (which is a divisional of Ser. No. 09/733,691), now U.S. Pat. No. Re. 42,581.

This Application is a Continuation of application Ser. No. 08/689,408, now abandoned, filed Aug. 7, 1996 and entitled UNIVERSALLY POSITIONABLE MOUNTING ARM. application Ser. No. 08/689,408 was in turn a Continuation of application Ser. No. 08/574,415, now abandoned filed Dec. 15, 1995, and having the same title. Application Ser. No. 08/574,415 was in turn a Continuation of application Ser. No. 08/375,568, now abandoned, filed Jan. 13, 1995 and having the same title. And application Ser. No. 08/375,568 was in turn a Continuation of application Ser. No. 08/167/500, now abandoned, filed Dec. 14, 1993 and having the same title.

TECHNICAL FIELD

My invention relates to a mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at a selected angular orientation of the line of juncture with respect to one of the objects. It relates in particular to a device of this nature which is universally positionable between the pair of objects, to support the relatively movable object on the relatively stationary object at variable angular orientations of the line of juncture with respect to either or both of the objects.

THE INVENTION IN GENERAL

In one combination thereof, my mounting device comprises means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture; and a split-arm assembly comprising a pair of elongated relatively rigid arm sections which are operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have pairs of corresponding first and second end portions thereof that are operatively opposed to one another across a plane coincident with the line of juncture. The first coupling member has a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a first circle of revolution having its center at the first locus of the first coupling member, and also having pressure deformable material therein so that the body of the first coupling member can be squeezed between the surfaces thereof to less than the diameter of the first circle of revolution. Means form a pair of operatively opposing first sockets

in the pair of first end portions of the respective arm sections, and the device further comprises means for applying initial clamping forces to the pair of arm sections to squeeze the pair of arm sections together relatively crosswise the plane of the line of juncture, and means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces so that when squeezed together, the pair of arm sections assumes a relatively transversely contracted disposition thereof about the first coupling member and the base in which the pair of first sockets in the pair of first end portions of the pair of arm sections is operatively engaged about the outer peripheral surfaces of the first coupling member in substantial coincidence with the first circle of revolution, but the pair of second end portions of the pair of arm sections is spaced apart from one another about the base to the extent that although the pair of arm sections forms a connection between the first coupling member and the base, the connection allows the pair of arm sections to be squeezed further together about the base. When the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base, the pair of first sockets is adapted to form a first ball and socket joint with the outer peripheral surfaces of the first coupling member so that the first coupling member and the pair of arm sections can be pivoted in relation to one another at the first joint to position the line of juncture at a selected angular orientation with respect to the aforementioned one object. Moreover, when the pair of arm sections is in the relatively transversely contracted disposition thereof about the first coupling member and the base, the device further comprises means for applying additional clamping forces to the pair of arm sections to squeeze the pair of arm sections further together relatively crosswise the plane of the line of juncture, and means for producing a differential in the reaction of the respective pairs of first and second end portions of the pair of arm sections to the additional clamping forces so that when squeezed further together in the relatively transversely contracted disposition thereof, the pair of arm sections pivot in relation to one another about the first coupling member to reduce the space between the second end portions of the respective arm sections about the base while the pair of first sockets engages the outer peripheral surfaces of the body of the first coupling member to squeeze the body therebetween and interlock the pair of arm sections with the first coupling member to rigidify the connection between the first coupling member and the base at the selected angular orientation of the line of juncture with respect to the one object. That is to say, when the pair of arm sections is in the relatively transversely contracted disposition thereof, the device forms a ball and socket joint with the first coupling member whereby the line of juncture can be positioned at any angular orientation one chooses, and then when additional clamping forces are applied, that same first coupling member which was a part of the ball and socket joint, is given a new and additional function of aiding in the rigidifying of the connection formed by the pair of arm sections between the first coupling member and the base. Furthermore, in certain presently preferred embodiments of the invention wherein the pressure deformable material is resilient, the means for applying additional clamping forces to the pair of arm sections are releasable relatively crosswise the plane of the line of juncture to restore the first joint so that the pair of arm sections and the first coupling member can be pivoted in relation to one another to position the line of juncture at a different angular orientation with respect to the one object. That is to say, the same coupling member which was a part of the ball and socket joint, and then contributed to the rigidification of the

connection between the coupling member and the base, can be restored to its initial function of participating once more in the ball and socket joint. And meanwhile, throughout it all, the assembly will remain fully intact; that is, there will be a sustainable connection throughout between the first coupling member and the base.

In many of the presently preferred embodiments of the foregoing combination, the base has attachment means thereon for forming the connection between the first coupling member and the base, and the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed together by the initial clamping forces to assume the relatively transversely contracted disposition thereof, the second end portions of the pair of arm sections are reciprocated in relation to one another about the base to first positions thereof in which the pair of second end portions is mutually opposed to one another across the plane and the attachment means form a connection between the first coupling member and the base, but the pair of second end portions is sufficiently spaced apart from one another in the connection that the connection allows the pair of arm sections to be squeezed further together about the base. In some of these embodiments, the attachment means are operatively interposed between the pair of second end portions in the connection, but adapted so that the respective second end portions of the arm sections are spaced apart from the attachment means when the second end portions assume the first positions thereof in the relative reciprocation thereof, and the device further comprises means operatively interposed between the attachment means and the respective second end portions to loosely interconnect the attachment means with the pair of second end portions and vice versa when the second end portions assume the first positions thereof in the relative reciprocation thereof. In one group of embodiments, the attachment means include a second coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a second circle of revolution having its center at a point between the first positions of the second end portions of the arm sections in the relative reciprocation thereof, and the device further comprises means forming a pair of operatively opposing second sockets in the pair of second end portions of the respective arm sections, which engage about the outer peripheral surfaces of the second coupling member in a third circle of revolution concentric with the second circle of revolution but having a greater diameter than the second circle of revolution so that when the second end portions of the arm sections assume the first positions thereof in the relative reciprocation thereof, the body of the second coupling member and the respective second end portions of the arm sections are loosely interconnected with one another but spaced apart from one another by the differential between the diameters of the second and third circles of revolution. In certain of the group, the body of the second coupling member has pressure deformable material therein so that the body of the second coupling member can be squeezed between the surfaces thereof to less than the diameter of the second circle of revolution, and the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed further together by the additional clamping forces, the second end portions of the pair of arm sections are reciprocated in relation to one another about the base to second positions thereof mutually opposed to one another across the plane of the line of juncture and in which the pair of second sockets forms a second ball and socket joint with the outer peripheral surfaces of the second coupling member, so

that the second coupling member and the pair of arm sections can be pivoted in relation to one another at the second joint to also position the line of juncture at a selected angular orientation with respect to the other object if desired, and then to third positions thereof mutually opposed to one another across the plane of the line of juncture in which the pair of second sockets engages the outer peripheral surfaces of the body of the second coupling member to squeeze the body therebetween and interlock the pair of arm sections with the second coupling member to rigidify the connection between the respective first and second coupling members at the selected angular orientation of the line of juncture with respect to each of the objects. Furthermore, in some embodiments, the pressure deformable material in the bodies of the respective first and second coupling members is resilient and the means for applying additional clamping forces to the pair of arm sections are releasable relatively crosswise the plane of the line of juncture to restore the first and second joints so that the pair of arm sections can be pivoted in relation to the respective first and second coupling members and vice versa, to position the line of juncture at different angular orientations with respect to the one and/or the other objects. In one special group, the differential producing means include yieldable biasing means, and the space between the first and second loci of the first coupling member and the base, respectively, is of such length that when the second coupling member is detached from the split-arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the pair of first sockets from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.

In one particularly advantageous version of my device, the means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces include means operable to generate a lopsided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof. And in a related version, the base has attachment means thereon for forming the connection between the first coupling member and the base, and the attachment means and the first coupling member have means operatively interposed therebetween to generate a lopsided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof. In certain embodiments of this latter version, the attachment means include a second coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a second circle of revolution having its center at a point interposed between the second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof. Moreover, in these embodiments of the latter version, the first and second circles of revolution have substantially equal diameters, and the means for generating a lopsided effect in the application of the initial clamping forces to the respective first and second end portions of the arm sections include yieldable biasing means disposed to oppose the application of the initial clamping forces to the second end portions of the respective arm sections. In some embodiments of this latter version, the yieldable biasing means are interposed across the plane of the

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line of juncture between the first and second coupling members. And in certain of them, the initial clamping forces are applied to the pair of arm sections along a line interposed across the plane of the line of juncture between the yieldable biasing means and the first coupling member. In many of them, moreover, the yieldable biasing means take the form of a coiled spring which is caged between the pair of arm sections along a line interposed across the plane of the line of juncture substantially parallel to the line of application of the initial clamping forces.

In this latter version, the arm sections may be operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed together by the initial clamping forces, the second end portions of the pair of arm sections are reciprocated against the bias of the yieldable biasing means to positions mutually opposed to one another across the plane and in which the second coupling member forms a connection between the first coupling member and the base, but the pair of second end portions is sufficiently spaced apart from one another in the connection that the connection allows the pair of arm sections to be squeezed further together about the base. Furthermore, the space between the first and second loci of the first coupling member and the base, respectively, may be of such length that when the second coupling member is detached from the split-arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the first end portions of the arm sections from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.

For the purposes of many embodiments, the pressure deformable material renders the body of the first coupling member radially compressible at the outer peripheral surfaces thereof. And for many embodiments, the first sockets have surfaces at the inner peripheries thereof which are adapted to form the first ball and socket joint with the outer peripheral surfaces of the first coupling member when the pair of arm sections assumes the relatively transversely contracted dispositions thereof about the first coupling member and the base.

For many of those embodiments wherein the pressure deformable material renders the body of the first coupling member radially compressible at the outer peripheral surfaces thereof, the inner peripheral surfaces of the first sockets are part spherical and are adapted firstly, to substantially coincide with the first circle of revolution when the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base, so that the first joint is formed between the respective inner and outer peripheral surfaces of the first sockets and the first coupling member, and then to compress the body of the first coupling member radially thereof at the outer peripheral surfaces thereof when the pair of arm sections is squeezed further together in the relatively transversely contracted disposition thereof to interlock the pair of arm sections with the first coupling member and rigidify the connection between the first coupling member and the base at the selected angular orientation of the line of juncture with respect to the one object.

Sometimes, the respective means for applying the initial clamping forces and the additional clamping forces to the pair of arm sections include a pin and hole fastening device for fastening the pair of arm sections together relatively crosswise the plane of the line of juncture, and a clamping mechanism on the fastening device for applying clamping forces to the pair of arm sections through the fastening device.

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The first coupling member may be formed of nitrile rubber material at the surface thereof.

If desired, the pair of arm sections may be adapted to extend rectilinearly between the spaced first and second loci of the first coupling member and the base.

The means forming the first coupling member and the base may be elements physically separate and distinct from the objects themselves but attachable thereto. And the split arm assembly may be physically separate and distinct from the means for forming each of the first coupling member and the base.

Also, the split arm assembly may be physically separate and distinct from the base.

In another combination thereof, the split arm assembly of the device comprises a pair of relatively rigid arm sections which have pairs of corresponding first and second end portions thereof which are operatively opposed to one another across a plane coincident with the line of juncture, so as to be disposed adjacent the first coupling member and the base, respectively. Clamping means are operable to squeeze the pair of arm sections together relatively crosswise the plane of the line of juncture, and the device further comprises means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the squeezing action of the clamping means, so that when squeezed together, the pair of arm sections forms a bifurcated arm assembly that in a first position thereof, has its apex at the first locus of the first coupling member and is loosely engaged about the base at the second end portions thereof. Means form a pair of operatively opposing first sockets in the first end portions of the respective arm sections, having substantially smooth part spherical surfaces at the inner peripheries thereof which substantially coincide with a circle of revolution which has its center at the first locus of the first coupling member when the bifurcated arm assembly is engaged in the first position thereof about the first coupling member. Meanwhile, the first coupling member has a substantially smooth part spherical surface thereon which forms the outer periphery thereof and substantially coincides with the circle of revolution, so that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly. However, the clamping means are operable in the first position of the bifurcated arm assembly to squeeze the pair of arm sections further together relatively crosswise the plane of the line of juncture and to a second position of the bifurcated arm assembly in which the inner peripheral surfaces of the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member is sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa, at a selected angular orientation of the line of juncture with respect to the one object. Moreover, means are operable to produce a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the further squeezing action of the clamping means so that when squeezed further together into the second position of the bifurcated arm assembly, the pair of arm sections pivots relatively toward one another about the first coupling member to seize the base and rigidly interconnect the bifurcated arm assembly with the base at the selected angular orientation of the line of juncture with respect to the one object. Furthermore, in this additional combination, the clamping means may be releasable, and when the clamping means are

jaw 90, and the lamps 86 are attached in turn to the devices 10 themselves, using additional couplers 102 on the split arm assemblies 1 thereof. In use, each lamp 86 can be oriented at any angular orientation desired, relative to the coupling device 82, and therefore, relative to the support, so as to display the assembly in any manner desired.

There are many other variations and modifications that can be made in and to the invention. There are also many other applications of it. For example, the device may be used as a fishing rod holder that is selectively positionable relative to the side of a vessel to which it is attached; or to provide a camera mount; or to provide a mount with which to hold a circuit board while it is being assembled, soldered or maintained.

Sometimes two or more mounting devices may be combined to form a system with which to mount elongated objects such as fishing rods or skis on a wall, ceiling or like structure.

A mounting device with a single ball and socket joint, may be employed in lieu of the described paired arrangement. In such a case, the head 22 or 24 of the same would form a first linkage forming member, and the split arm assembly 1 a second linkage forming member. Likewise, means other than a nut and bolt may be employed as the fastening means, and means other than that shown may be employed as the clamping means. For example, vice-like clamps may be employed.

The arm sections need not be identically shaped. One may be larger than the other, and the second may take the form of a finger which is hingedly secured to the first so as to bear against the head of a coupler that is interposed therebetween. Also, in still other versions of my invention, there may be three or more arm sections that bear against the head of a coupler; and the fastening device and clamping mechanism may comprise a collet or the like which urges the arm sections together against the head of a coupler so as to compress and lock the arm sections onto the coupler.

I claim:

1. A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at a selected angular orientation of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of relatively rigid arm sections which are adapted to be operatively juxtaposed to one another along the line of juncture between the spaced loci of the first coupling member and the base, and have pairs of corresponding first and second end portions thereof which are operatively opposed to one another across a plane coincident with the line of juncture, so as to be disposed adjacent the first coupling member and the base, respectively,

clamping means for squeezing the pair of arm sections together relatively crosswise the plane of the line of juncture,

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the squeezing action of the clamping means, so that when squeezed together, the pair of arm sections forms a bifurcated arm assembly that in a first position thereof, has its apex at the first locus of the first coupling member and is loosely engaged about the base at the second end portions thereof,

means forming a pair of operatively opposing first sockets in the first end portions of the respective arm sections having substantially smooth part spherical surfaces at the inner peripheries thereof which substantially coincide with a circle of revolution that has its center at the first locus of the first coupling member when the bifurcated arm assembly is engaged in the first position thereof about the first coupling member,

the first coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof and substantially coincides with the circle of revolution, so that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly,

the clamping means being operable in the first position of the bifurcated arm assembly to squeeze the pair of arm sections further together relatively crosswise the plane of the line of juncture and to a second position of the bifurcated arm assembly in which the inner peripheral surfaces of the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member being sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa at a selected angular orientation of the line of juncture with respect to the one object, and

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the further squeezing action of the clamping means, so that when squeezed further together into the second position of the bifurcated arm assembly, the pair of arm sections pivots relatively toward one another about the first coupling member to seize the base and rigidly interconnect the bifurcated arm assembly with the base at the selected angular orientation of the line of juncture with respect to the one object.

2. The mounting device according to claim 1 wherein the clamping means are releasable and when the clamping means are released, the pair of arm sections is reciprocable in relation to one another to a third position of the bifurcated arm assembly in which the pair of arm sections is sufficiently spaced apart about the first locus of the first coupling member that the first coupling member is detachable from the bifurcated arm assembly and vice versa.

3. The mounting device according to claim 2 wherein the base takes the form of a second coupling member having a substantially smooth part spherical outer peripheral surface thereon, the second coupling member is also compressible radially thereof at the outer peripheral surface thereof, and the mounting device further comprises means forming a pair of operatively opposing second sockets in the second end portions of the pair of arm sections which have substantially smooth part spherical surfaces at the inner peripheries thereof that are rotatably engageable with the second coupling member at the outer peripheral surface thereof in the respective positions of the bifurcated arm assembly lying between the third and first positions thereof inclusive, and which progressively seize the second coupling member by compressing and deforming the outer peripheral surface thereof to interlock the bifurcated arm assembly with the second coupling member when the pair of arm sections is squeezed together in the

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direction of the second position of the bifurcated arm assembly from the first position thereof.

4. The mounting device according to claim 1 wherein the base and arm sections are adapted for rotation of the bifurcated arm assembly about the base and vice versa at the second locus of the base.

5. A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at a selected angular orientation of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of elongated relatively rigid arm sections which are operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have pairs of corresponding first and second end portions thereof that are operatively opposed to one another across a plane coincident with the line of juncture,

the first coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a first circle of revolution having its center at the first locus of the first coupling member, and also having pressure deformable material therein so that the body of the first coupling member can be squeezed between the surfaces thereof to less than the diameter of the first circle of revolution,

means forming a pair of operatively opposing first sockets in the pair of first end portions of the respective arm sections,

means for applying initial clamping forces to the pair of arm sections to squeeze the pair of arm sections together relatively crosswise the plane of the line of juncture,

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces so that when squeezed together, the pair of arm sections assumes a relatively transversely contracted disposition thereof about the first coupling member and the base in which the pair of first sockets in the pair of first end portions is operatively engaged about the outer peripheral surfaces of the first coupling member in substantial coincidence with the first circle of revolution, but the pair of second end portions is spaced apart from one another about the base to the extent that although the pair of arm sections forms a connection between the first coupling member and the base, the connection allows the pair of arm sections to be squeezed further together about the base, the pair of first sockets being adapted to form a first ball and socket joint with the outer peripheral surfaces of the first coupling member when the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base, so that the first coupling member and the pair of arm sections can be pivoted in relation to one another at the first joint to position the line of juncture at a selected angular orientation with respect to the one object,

means for applying additional clamping forces to the pair of arm sections to squeeze the pair of arm sections further together

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relatively crosswise the plane of the line of juncture when the pair of arm sections is in the relatively transversely contracted disposition thereof about the first coupling member and the base, and

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the additional clamping forces so that when squeezed further together in the relatively transversely contracted disposition thereof, the pair of arm sections pivots in relation to one another about the first coupling member to reduce the space between the second end portions of the respective arm sections about the base while the pair of first sockets engages the outer peripheral surfaces of the body of the first coupling member to squeeze the body therebetween and interlock the pair of arm sections with the first coupling member to rigidify the connection between the first coupling member and the base at the selected angular orientation of the line of juncture with respect to the one object.

6. The mounting device according to claim 5 wherein the first coupling member is formed of nitrile rubber material at the surface thereof.

7. The mounting device according to claim 5 wherein the pair of arm sections is adapted to extend rectilinearly between the spaced first and second loci of the first coupling member and the base.

8. The mounting device according to claim 5 wherein the means for forming the first coupling member and the base are elements physically separate and distinct from the objects themselves but attachable thereto.

9. The mounting device according to claim 5 wherein the split arm assembly is physically separate and distinct from the means for forming each of the first coupling member and the base.

10. The mounting device according to claim 5 wherein the split arm assembly is physically separate and distinct from the base.

11. The mounting device according to claim 5 wherein the pressure deformable material is resilient and the means for applying additional clamping forces to the pair of arm sections are releasable relatively crosswise the plane of the line of juncture to restore the first joint so that the pair of arm sections and the first coupling member can be pivoted in relation to one another to position the line of juncture at a different angular orientation with respect to the one object.

12. The mounting device according to claim 5 wherein the base has attachment means thereon for forming the connection between the first coupling member and the base, and the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed together by the initial clamping forces to assume the relatively transversely contracted disposition thereof, the second end portions of the pair of arm sections are reciprocated in relation to one another about the base to first positions thereof in which the pair of second end portions is mutually opposed to one another across the plane and the attachment means form a connection between the first coupling member and the base, but the pair of second end portions is sufficiently spaced apart from one another in the connection that the connection allows the pair of arm sections to be squeezed further together about the base.

13. The mounting device according to claim 12 wherein the attachment means are operatively interposed between the pair of second end portions in the connection but adapted so that the respective second end portions of the arm sections are spaced apart from the attachment means when the second end portions assume the first positions thereof in the relative

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reciprocation thereof, and the device further comprises means operatively interposed between the attachment means and the respective second end portions to loosely interconnect the attachment means with the pair of second end portions and vice versa when the second end portions assume the first positions thereof in the relative reciprocation thereof.

14. The mounting device according to claim 13 wherein the attachment means include a second coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a second circle of revolution having its center at a point between the first positions of the second end portions of the arm sections in the relative reciprocation thereof, and the device further comprises means forming a pair of operatively opposing second sockets in the pair of second end portions of the respective arm sections, which engage about the outer peripheral surfaces of the second coupling member in a third circle of revolution concentric with the second circle of revolution but having a greater diameter than the second circle of revolution so that when the second end portions of the arm sections assume the first positions thereof in the relative reciprocation thereof, the body of the second coupling member and the respective second end portions of the arm sections are loosely interconnected with one another but spaced apart from one another by the differential between the diameters of the second and third circles of revolution.

15. The mounting device according to claim 14 wherein the body of the second coupling member has pressure deformable material therein so that the body of the second coupling member can be squeezed between the surfaces thereof to less than the diameter of the second circle of revolution, and the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed further together by the additional clamping forces, the second end portions of the pair of arm sections are reciprocated in relation to one another about the base to second positions thereof mutually opposed to one another across the plane of the line of juncture and in which the pair of second sockets forms a second ball and socket joint with the outer peripheral surfaces of the second coupling member, so that the second coupling member and the pair of arm sections can be pivoted in relation to one another at the second joint to also position the line of juncture at a selected angular orientation with respect to the other object if desired, and then to third positions thereof mutually opposed to one another across the plane of the line of juncture in which the pair of second sockets engages the outer peripheral surfaces of the body of the second coupling member to squeeze the body therebetween and interlock the pair of arm sections with the second coupling member to rigidify the connection between the respective first and second coupling members at the selected angular orientation of the line of juncture with respect to each of the objects.

16. The mounting device according to claim 15 wherein the pressure deformable material in the bodies of the respective first and second coupling members is resilient and the means for applying additional clamping forces to the pair of arm sections are releasable relatively crosswise the plane of the line of juncture to restore the first and second joints so that the pair of arm sections can be pivoted in relation to the respective first and second coupling members and vice versa, to position the line of juncture at different angular orientations with respect to the one and/or the other objects.

17. The mounting device according to claim 16 wherein the differential producing means include yieldable biasing means and the space between the first and second loci of the first

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coupling member and the base respectively is of such length that when the second coupling member is detached from the split arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the pair of first sockets from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.

18. The mounting device according to claim 5 wherein the means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces include means operable to generate a lop-sided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof.

19. The mounting device according to claim 5 wherein the base has attachment means thereon for forming the connection between the first coupling member and the base, and the attachment means and the first coupling member have means operatively interposed therebetween to generate a lop-sided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof.

20. The mounting device according to claim 19 wherein the attachment means include a second coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a second circle of revolution having its center at a point interposed between the second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof, the first and second circles of revolution have substantially equal diameters, and the means for generating a lop-sided effect in the application of the initial clamping forces to the respective first and second end portions of the arm sections include yieldable biasing means disposed to oppose the application of the initial clamping forces to the second end portions of the respective arm sections.

21. The mounting device according to claim 20 wherein the yieldable biasing means are interposed across the plane of the line of juncture between the first and second coupling members.

22. The mounting device according to claim 21 wherein the initial clamping forces are applied to the pair of arm sections along a line interposed across the plane of the line of juncture between the yieldable biasing means and the first coupling member.

23. The mounting device according to claim 22 wherein the yieldable biasing means take the form of a coiled spring which is caged between the pair of arm sections along a line interposed across the plane of the line of juncture substantially parallel to the line of application of the initial clamping forces.

24. The mounting device according to claim 20 wherein the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed together by the initial clamping forces, the second end portions of the pair of arm sections are reciprocated against the bias of the yieldable biasing means to positions mutually opposed to one another across the plane and in which the second coupling member forms a connection between the first coupling member and the base, but the pair of second end portions is sufficiently spaced apart from one

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another in the connection that the connection allows the pair of arm sections to be squeezed further together about the base.

25. The mounting device according to claim 20 wherein the space between the first and second loci of the first coupling member and the base respectively, is of such length that when the second coupling member is detached from the split arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the first end portions of the arm sections from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.

26. The mounting device according to claim 5 wherein the pressure deformable material renders the body of the first coupling member radially compressible at the outer peripheral surfaces thereof.

27. The mounting device according to claim 5 wherein the first sockets have surfaces at the inner peripheries thereof which are adapted to form the first ball and socket joint with the outer peripheral surfaces of the first coupling member when the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base.

28. The mounting device according to claim 27 wherein the pressure deformable material renders the body of the first coupling member radially compressible at the outer peripheral surfaces thereof, and the inner peripheral surfaces of the first sockets are part spherical and adapted to substantially coincide with the first circle of revolution when the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base so that the first joint is formed between the respective inner and outer peripheral surfaces of the first sockets and the first coupling member, and then to compress the body of the first coupling member radially thereof at the outer peripheral surfaces thereof when the pair of arm sections is squeezed further together in the relatively transversely contracted disposition thereof to interlock the pair of arm sections with the first coupling member and rigidify the connection between the first coupling member and the base at the selected angular orientation of the line of juncture with respect to the one object.

29. The mounting device according to claim 5 wherein the respective means for applying the initial clamping forces and the additional clamping forces to the pair of arm sections include a pin and hole fastening device for fastening the pair of arm sections together relatively crosswise the plane of the line of juncture, and a clamping mechanism on the fastening device for applying clamping forces to the pair of arm sections through the fastening device.

30. A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at varying angular orientations of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of relatively rigid arm sections which are adapted to be operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have faces thereon which are operatively opposed to one another across a plane coincident with the line of juncture,

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releasable clamping means for reciprocating the pair of arm sections in relation to one another relatively crosswise the plane of the line of juncture to form the split arm assembly into a bifurcated arm assembly which has its apex at the second locus of the base and is engaged about the first coupling member,

means forming a pair of operatively opposing first sockets in the faces of the respective arm sections having substantially smooth part spherical surfaces at the inner peripheries thereof which substantially coincide with a circle of revolution that has its center at the first locus of the first coupling member when the bifurcated arm assembly is engaged in a first position thereof about the first coupling member,

the first coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof and substantially coincides with the circle of revolution, so that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly,

the clamping means being operable in the first position of the bifurcated arm assembly to reciprocate the pair of arm sections in relation to one another to a second position of the bifurcated arm assembly in which the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member being sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the pair of first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa, but

the inner peripheral surfaces of the first sockets also being substantially smooth over sufficient arcuate extent circumferentially of the outer peripheral surface of the first coupling member and the first coupling member being sufficiently resilient at the surface thereof, that when the clamping means are released, the pair of first sockets and the first coupling member reform a relatively rotatable ball and socket joint at the first position of the bifurcated arm assembly, so that the bifurcated arm assembly can be rotated about the first coupling member to vary the angular orientation of the line of juncture with respect to the first coupling member,

and wherein when the clamping means are released, the pair of arm sections are reciprocable in relation to one another to a third position of the bifurcated arm assembly in which the faces of the pair of arm sections are sufficiently spaced apart about the first locus of the first coupling member that the first coupling member is detachable from the bifurcated arm assembly and vice versa,

and the base takes the form of a second coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof, the second coupling member is also compressible radially thereof at the outer peripheral surface thereof, and the mounting device further comprises means forming a pair of operatively opposing second sockets in the faces of the respective arm sections which have substantially smooth part spherical surfaces at the inner peripheries thereof that are rotatably engageable with the second coupling member at the outer peripheral surface thereof in the respective positions of the bifurcated arm assembly lying between the third and first positions thereof

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inclusive, and which progressively seize the second coupling member by compressing and deforming the surface thereof to interlock the bifurcated arm assembly with the second coupling member when the pair of arm sections are reciprocated in relation to one another in the direction of the second position of the bifurcated arm assembly from the first position thereof.

31. The mounting device according to claim 30 wherein the releasable clamping means include yieldable biasing means operable to space the pair of arm sections from one another at the faces thereof relatively crosswise the plane of the line of juncture, and a releasable clamping mechanism operable against the bias of the yieldable biasing means to reciprocate the pair of arm sections relatively toward one another at the faces of the arm sections, the yieldable biasing means and the clamping mechanism being engaged with the pair of arm sections in the space between the first and second loci of the first coupling member and the base, respectively, to form the split arm assembly into a bifurcated arm assembly which has its apex at the second locus of the base when the pair of arm sections is reciprocated relatively toward one another at the faces thereof.

32. The mounting device according to claim 31 wherein the faces of the respective arm sections have recesses therein between the first and second loci of the first coupling member and the base, and the yieldable biasing means take the form of a coiled spring which is caged between the respective arm sections at the recesses in the faces thereof.

33. The mounting device according to claim 32 wherein the space between the first and second loci of the first and second coupling members is of such length that when the first coupling member is detached from the bifurcated arm assembly and vice versa, the arm sections can be pinched together against the bias of the spring to separate the pair of second sockets from one another to the extent that the second coupling member can be detached from the pair of arm sections and vice versa.

34. The mounting device according to claim 32 wherein the arm sections have a pair of mutually opposing openings therein at the bottoms of the recesses, and the clamping mechanism takes the form of an elongated bolt which is passed through the pair of openings and has a flange on one end portion thereof and threading on the other end portion thereof, and a knob which is threadedly engaged with the threading on the other end portion of the bolt and cooperable with the flange on the bolt to clamp the pair of arm sections therebetween.

35. A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at varying angular orientations of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of relatively rigid arm sections which are adapted to be operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have faces thereon which are operatively opposed to one another across a plane coincident with the line of juncture,

releasable clamping means for reciprocating the pair of arm sections in relation to one another relatively crosswise the plane of the line of juncture to form the split arm

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assembly into a bifurcated arm assembly which has its apex at the second locus of the base and is engaged about the first coupling member,

means forming a pair of operatively opposing first sockets in the faces of the respective arm sections having substantially smooth part spherical surfaces at the inner peripheries thereof which substantially coincide with a circle of revolution that has its center at the first locus of the first coupling member when the bifurcated arm assembly is engaged in a first position thereof about the first coupling member,

the first coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof and substantially coincides with the circle of revolution, so that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly,

the clamping means being operable in the first position of the bifurcated arm assembly to reciprocate the pair of arm sections in relation to one another to a second position of the bifurcated arm assembly in which the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member being sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the pair of first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa, but

the inner peripheral surfaces of the first sockets also being substantially smooth over sufficient arcuate extent circumferentially of the outer peripheral surface of the first coupling member and the first coupling member being sufficiently resilient at the surface thereof, that when the clamping means are released, the pair of first sockets and the first coupling member reform a relatively rotatable ball and socket joint at the first position of the bifurcated arm assembly, so that the bifurcated arm assembly can be rotated about the first coupling member to vary the angular orientation of the line of juncture with respect to the first coupling member, and

the first coupling member having a reduced diameter neck at a side thereof opposed to the part spherical outer peripheral surface thereof, and the first sockets having rims formed thereabout in the faces of the respective arm sections, and indentations in the respective rims thereof at the plane of the line of juncture, which together are greater in width than the neck so that the bifurcated arm assembly can be rotated about the locus of the first coupling member to angular orientations in which the line of juncture extends at right angles to the neck of the first coupling member.

36. The mounting device according to claim 35 wherein the respective arm sections have ends adjacent the first sockets, and the first sockets also have indentations in the respective rims thereof at the adjacent ends of the arm sections, which together are greater in width than the neck so that the bifurcated arm assembly can be rotated about the first locus of the first coupling member to angular orientations in which the plane of the line of juncture extends at oblique angles to the first coupling member.

37. A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on

the relatively stationary object at varying angular orientations of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of relatively rigid arm sections which are adapted to be operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have faces thereon which are operatively opposed to one another across a plane coincident with the line of juncture,

releasable clamping means for reciprocating the pair of arm sections in relation to one another relatively cross-wise the plane of the line of juncture to form the split arm assembly into a bifurcated arm assembly which has its apex at the second locus of the base and is engaged about the first coupling member,

means forming a pair of operatively opposing first sockets in the faces of the respective arm sections having substantially smooth part spherical surfaces at the inner peripheries thereof which substantially coincide with a circle of revolution that has its center at the first locus of the first coupling member when the bifurcated arm assembly is engaged in a first position thereof about the first coupling member,

the first coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof and substantially coincides with the circle of revolution, so that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly,

the clamping means being operable in the first position of the bifurcated arm assembly to reciprocate the pair of arm sections in relation to one another to a second position of the bifurcated arm assembly in which the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member being sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the pair of first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa, but

the inner peripheral surfaces of the first sockets also being substantially smooth over sufficient arcuate extent circumferentially of the outer peripheral surface of the first coupling member and the first coupling member being sufficiently resilient at the surface thereof, that when the clamping means are released, the pair of first sockets and the first coupling member reform a relatively rotatable ball and socket joint at the first position of the bifurcated arm assembly, so that the bifurcated arm assembly can be rotated about the first coupling member to vary the angular orientation of the line of juncture with respect to the first coupling member, and

the first sockets having rims formed thereabout at the faces of the respective arm sections and cruciate grooves at the inner peripheries thereof subdividing the part spherical surfaces thereof into four relatively smaller part spherical surfaces apiece, each of which terminates at the groove in the respective first socket and the rim thereabout.

38. An interlocking ball and socket joint comprising:

a coupling member partially formed of a resilient deformable material having a substantially smooth part spherical outer peripheral surface and having a reduced diameter neck at a side thereof opposed to the part spherical outer peripheral surface thereof;

a bifurcated arm assembly comprising first and second arm sections formed with operatively opposed first sockets in respective first end portions thereof, the first sockets having opposing concave interior faces shaped to substantially conform to the substantially smooth part spherical outer peripheral surface of the coupling member, and having rims formed thereabout in the faces of the respective arm sections, and indentations in the respective rims thereof at a plane of a line of juncture between the arm sections, which together are greater in width than the neck so that the bifurcated arm assembly can be rotated about a locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck of the coupling member; and

an adjustable clamp configured and arranged to provide a plurality of different adjustment relationships to the opposing concave interior faces of the first sockets, one adjustment of the clamp conforming the opposing concave interior faces of the first sockets in a relatively rotational relationship with the coupling member, and

another adjustment of the clamp conforming the opposing concave interior faces of the first sockets in an interlocking relationship with the coupling member, wherein the opposing concave interior faces of the first sockets radially compress and deform at least a portion of the resilient deformable material of the coupling member.

39. The interlocking ball and socket joint of claim 38, further comprising:

a second coupling member partially formed of a resilient deformable material having a substantially smooth part spherical outer peripheral surface and having a projection extending outside the resilient deformable material; and

operatively opposed second sockets formed in respective second end portions of the first and second relatively rigid arm sections and having opposing concave interior faces shaped to substantially conform to the substantially smooth part spherical outer peripheral surface of the second coupling member; and

wherein:

the adjustable clamp is configured and arranged to provide a plurality of adjustment relationships to the opposing concave interior faces of the second sockets, one adjustment of the clamp conforming the opposing concave interior faces of the second sockets in a relatively rotational relationship with the second coupling member, and

another adjustment of the clamp conforming the opposing concave interior faces of the second sockets in an interlocking relationship with the second coupling member, wherein the opposing concave interior faces of the second sockets radially compress and deform at least a portion of the resilient deformable material of the second coupling member.

40. The interlocking ball and socket joint of claim 39, further comprising a spring disposed between the first and second relatively rigid arm sections, wherein the adjustable

clamp, in combination with the spring, is configured and arranged to apply differential clamping forces between the first and second sockets.

41. The interlocking ball and socket joint of claim 38 wherein the coupling member is substantially centered on a first locus; and

the first and second arm sections form a bifurcated arm assembly having an apex at a second locus spaced apart from the first locus and having the first sockets substantially centered on the first locus and engaged about the coupling member.

42. The interlocking ball and socket joint of claim 38 wherein the adjustable clamp further comprises mutually engageable internally and externally threaded members.

43. The interlocking ball and socket joint according to claim 42 wherein the externally threaded member further comprises a threaded rod, and the mutually engageable internally and externally threaded members are structured for relative rotational motion for moving the internally threaded member along a length of the externally threaded member.

44. The interlocking ball and socket joint according to claim 43 wherein the internally threaded member further comprises a knob.

45. An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially smooth spherical shape, the coupling member having a reduced diameter neck portion at a side thereof opposed to a part spherical outer peripheral surface thereof and extending outside of the radially compressible material;

a plurality of first sockets formed in a bifurcated arm assembly comprising rigid arm sections, the first sockets having substantially smooth concave radial surfaces and having rims formed thereabout in faces of the respective arm sections, and indentations in the respective rims thereof at a plane of a line of juncture between the arm sections, which together are greater in width than the neck portion so that the bifurcated arm assembly can be rotated about a locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck portion of the first coupling member; and

an adjustable clamp mechanically attached to the rigid arm sections and configured and arranged to position the first sockets in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the first sockets in an opposing relationship on either side of the coupling member and relatively rotatable thereto, and another adjustment of the clamp positioning the first sockets in an opposing relationship on either side of the coupling member and compressing the radially compressible material thereof, such that the first sockets substantially compress the coupling member and interlock the first sockets with the coupling member in a relative angular orientation.

46. The interlocking ball and socket joint of claim 45, further comprising:

a second coupling member having a radially compressible material formed in a substantially smooth spherical shape, the second coupling member further comprising a projection extending outside of the radially compressible material;

second sockets having substantially smooth concave surfaces; and wherein:

the one adjustment of the clamp positioning the second sockets in an opposing relationship on either side of the second coupling member and relatively rotatable thereto, and

the other adjustment of the clamp positioning the second sockets in an opposing relationship on either side of the second coupling member and compressing the radially compressible material thereof to interlock the second sockets with the second coupling member in a relative angular orientation.

47. An interlocking ball and socket joint comprising:

a coupling member partially formed of a resilient deformable material in a substantially smooth part globular shape and having a reduced diameter neck portion at a side thereof opposed to a part spherical outer peripheral surface thereof and extending outside the globular shape, the neck portion having a reduced diameter relative to the globular shape of the coupling member;

a bifurcated arm assembly formed of at least two arm sections, the arm assembly having sockets formed in opposing interior surfaces thereof, the sockets being shaped to substantially conform to the substantially smooth part globular shape of the coupling member, the sockets having rims formed thereabout in faces of the respective arm sections and indentations in the respective rims thereof at a plane of a line of juncture between the arm sections, which together are greater in width than the neck portion so that the bifurcated arm assembly can be rotated about a locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck portion of the coupling member;

an adjustable clamp configured and arranged to provide a plurality of different adjustment relationships to the opposing interior surfaces of the sockets,

one adjustment of the clamp conforming the opposing interior surfaces of the sockets in a relatively rotational relationship with the coupling member, and another adjustment of the clamp conforming the opposing interior surfaces of the sockets in an interlocking relationship with the coupling member.

48. An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially unbroken spherical shape and having a reduced diameter neck at a side thereof opposed to a part spherical outer peripheral surface thereof and extending outside of the spherical shape;

a bifurcated arm assembly formed of at least two arm sections having sockets formed in opposing interior surfaces thereof, the sockets each having substantially smooth concave surfaces, the sockets having rims formed thereabout in faces of the respective arm sections and indentations in the respective rims thereof at a plane of a line of juncture of the arm sections, which together are greater in width than the neck so that the bifurcated arm assembly can be rotated about the locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck of the coupling member; and

an adjustable clamp mechanically attached to the respective arm sections and configured and arranged to position the sockets in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the sockets in an opposing relationship on either side of the coupling member and relatively rotatable thereto, and

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another adjustment of the clamp positioning the sockets in an opposing relationship on either side of the coupling member and compressing the radially compressible material thereof to interlock the sockets with the coupling member in a relative angular orientation. 5

49. An interlocking ball and socket joint comprising:

a coupling member partially formed of a resilient deformable material in a substantially smooth part spherical shape centered on a first locus and having a reduced diameter neck portion at a side thereof opposed to a part spherical outer peripheral surface thereof and extending outside the spherical shape; 10

a bifurcated arm assembly comprising at least two arm sections and having first sockets formed of opposing concave interior surfaces centered on the first locus, the opposing concave interior surfaces being shaped to substantially conform to the substantially smooth part spherical shape of the coupling member and being engaged about the coupling member, the first sockets having rims formed thereabout in faces of the respective arm sections, and indentations in the respective rims thereof at a plane of a line of juncture between the arm sections, which together are greater in width than the neck portion so that the bifurcated arm assembly can be rotated about the first locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck portion of the coupling member; and 20

an adjustable clamp coupled to the bifurcated arm assembly, the adjustable clamp being configured and arranged to provide a plurality of different adjustment relationships to the first sockets, 25

one adjustment of the clamp conforming the first sockets in a relatively rotational relationship with the coupling member, and 30

another adjustment of the clamp conforming the first sockets in an interlocking relationship with the coupling member. 35

50. A mounting device, comprising:

a coupling member comprising a substantially spherical head and a reduced diameter neck at a side thereof opposed to a part spherical outer peripheral surface thereof and extending from the head, the spherical head comprising a substantially smooth outer surface of resilient deformable material; 40

a bifurcated arm assembly comprising a plurality of arm sections, at least two of the arm sections forming first sockets at end portions of the respective arm sections, the first sockets comprising rims formed thereabout in 45

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faces of the respective arm sections, and indentations in the respective rims thereof at a plane of a line of juncture of the arm sections, which together are greater in width than the neck of the coupling member so that the bifurcated arm assembly can be rotated about a locus of the coupling member to angular orientations in which the line of juncture extends at right angles to the neck of the coupling member; and

an adjustable clamp coupled to at least two of the plurality of arm sections, the adjustable clamp being configured and arranged to provide a plurality of positions, wherein, in a first position of the adjustable clamp, the first sockets and first coupling member are rotatably engaged, and in a second position of the adjustable clamp, the first sockets and first coupling member are interlocked, with the first sockets deforming the resilient deformable material of the head of the first coupling member.

51. The mounting device of claim 50, wherein the arm sections are not all identically shaped. 20

52. The mounting device of claim 50, wherein the first sockets are two opposing first sockets.

53. The mounting device of claim 50, wherein a first one of the arm sections is smaller than a second one of the arm sections and wherein the first one and the second one of the arm sections form the first sockets. 25

54. The mounting device of claim 53, wherein the first one of the arm sections is hingedly secured to the second one of the arm sections.

55. The mounting device of claim 50, wherein the mounting device comprises at least three arm sections. 30

56. The mounting device of claim 50, wherein the resilient deformable material of the coupling member is an elastomeric material.

57. The mounting device of claim 56, wherein the elastomeric material comprises nitrile rubber. 35

58. The mounting device of claim 50, wherein the head of the coupling member has a Shore A durometer of between 30-100.

59. The mounting device of claim 50, wherein the head of the coupling member has a Shore D hardness of between 40 and 70. 40

60. The mounting device of claim 50, wherein the coupling member further comprises a disc-shaped base coupled to the neck. 45

61. The mounting device of claim 60, wherein the disc-shaped base of the coupling member defines three openings in the base forming an equilateral triangle.

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