March 10, 1964 T. M. DI RENNA 3,124,331

MOUNTING MEANS FOR BLUEPRINTS

Filed Feb. 3, 1961 2 Sheets-Sheet 1

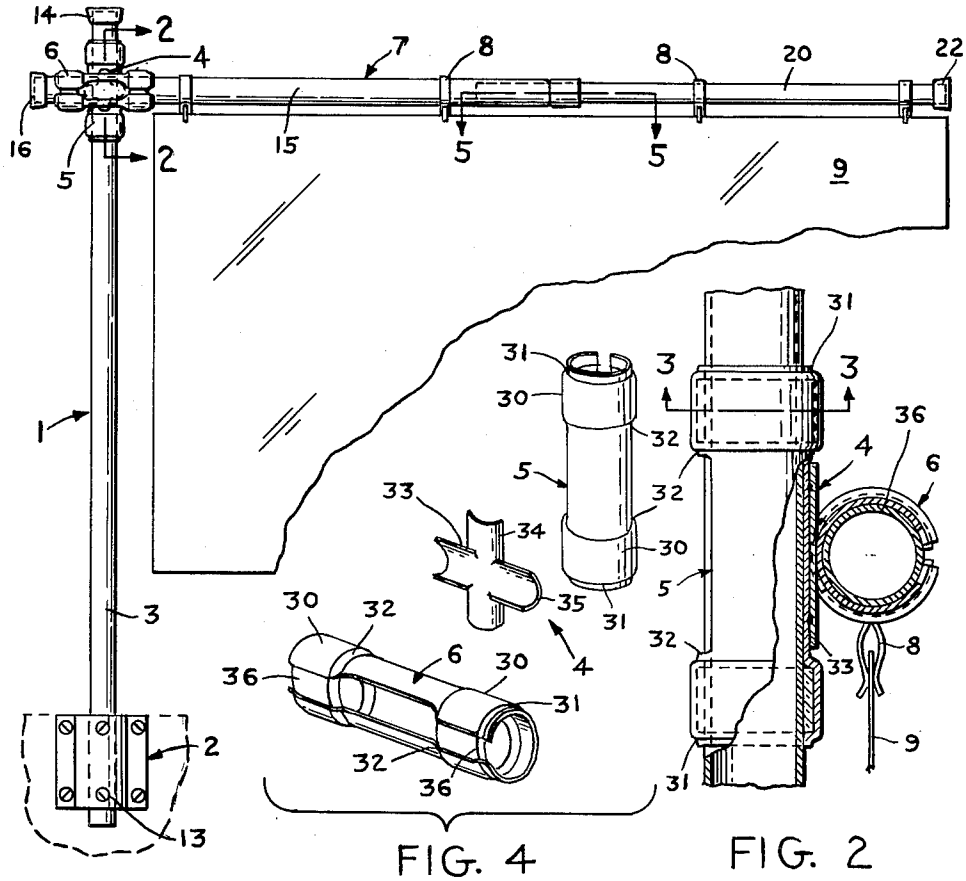


FIG. 1

FIG. 2

FIG. 4

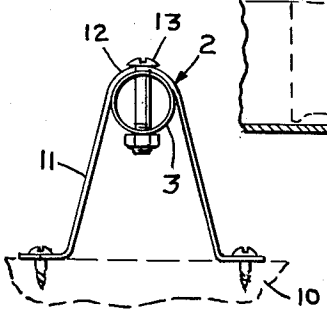


FIG. 6

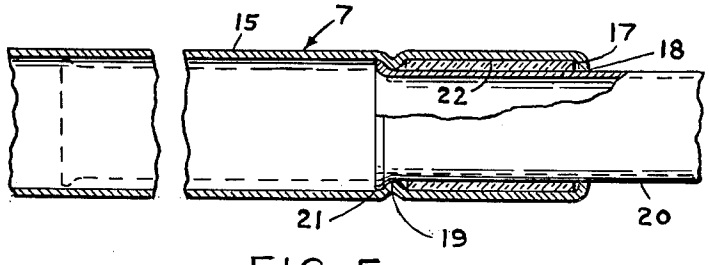


FIG. 5

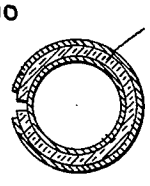


FIG. 3

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MOUNTING MEANS FOR BLUEPRINTS

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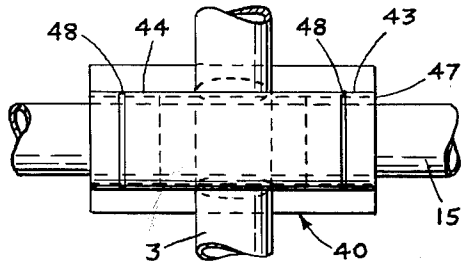


FIG. 7

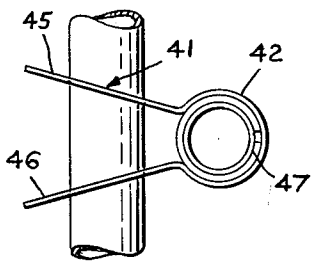


FIG. 8

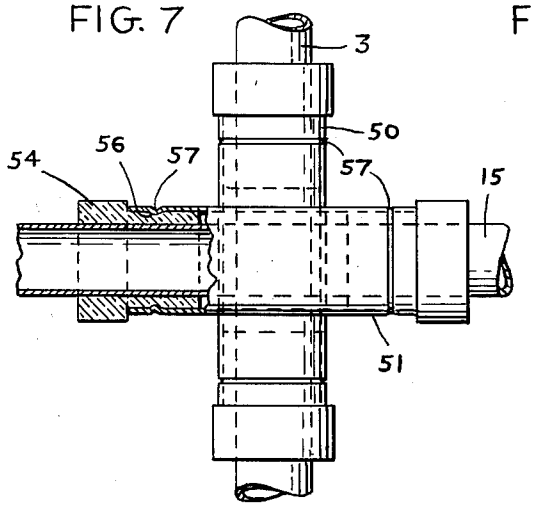


FIG. 9

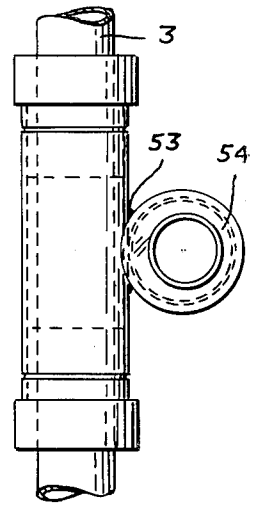


FIG. 10

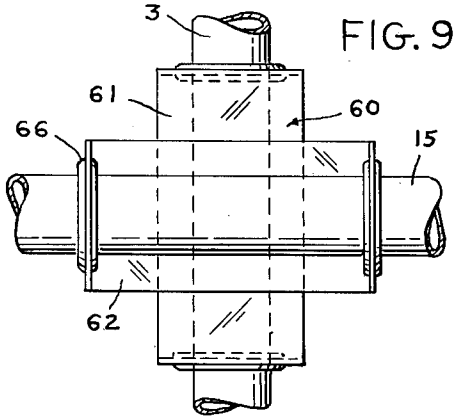


FIG. 11

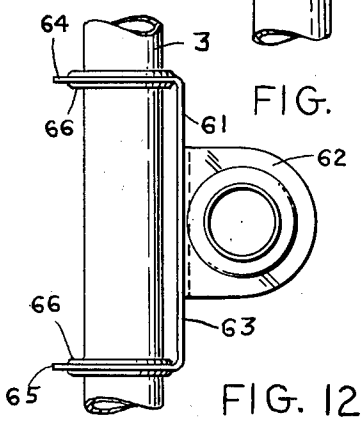


FIG. 12

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MOUNTING MEANS FOR BLUEPRINTS

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11 Claims. (Cl. 248—279)

The present invention relates to mounting means for blueprints or the like and more particularly to a multi-friction joint for the support permitting a wide variety of vertical and horizontal adjustments.

In the common type of mounting means for related functions, a joint is associated with a vertical post and includes means for receiving a cross member to permit adjustment in both the vertical and horizontal direction to thereby accommodate the unit to various heights and conditions.

For best results it is desirable to provide a mounting device that will rigidly support an object in any desired position with respect to the user. While related type units have been devised for this purpose they are undesirable from many standpoints such as relative instability between the sliding components thereof, occupy too much floor or storage space and high cost of manufacture.

The present invention comprehends a mounting means including a multi-friction joint which provides a simple and economical structure adapted to hold blueprints or the like of any desired size and yet can be compactly arranged when not in use so as not to require an excess amount of storage space.

Accordingly, it is an object of this invention to provide a simplified mounting means for blueprints including means for normally frictionally holding the standard and support members thereof in a predetermined position with respect to each other.

It is a further object of this invention to construct the unit of readily available standard materials to thereby provide a device having a low cost of manufacture.

It is another object of this invention to shape the parts of the mounting means so that it is strong and yet light in weight.

Other objects and advantages of the invention including the basic design and the nature of the improvements thereon will appear from the following description taken in conjunction with the following drawings, in which:

FIGURE 1 is a front elevation of the mounting means embodying the features of this invention.

FIGURE 2 is a vertical section taken on line 2—2 of FIGURE 1 showing the multi-friction joint.

FIGURE 3 is a horizontal section taken on line 3—3 of FIGURE 2.

FIGURE 4 is an exploded view of the multi-friction joint.

FIGURE 5 is a horizontal section of the support member taken on line 5—5 of FIGURE 1.

FIGURE 6 is a top view of one type base for the mounting means used for connection to a supporting structure.

FIGURE 7 is a side view showing a modified multi-friction joint.

FIGURE 8 is an end view of the multi-friction joint shown in FIGURE 7.

FIGURE 9 is a side view showing another modified multi-friction joint.

FIGURE 10 is an end view of the multi-friction joint shown in FIGURE 9.

FIGURE 11 is a side view of still another modified multi-friction joint.

FIGURE 12 is an end view of the multi-friction joint shown in FIGURE 11.

Referring now more particularly to the drawings, FIGURE 1 shows the configuration of the mounting means

generally designated 1 and comprising a base 2 from which rises an upright standard 3. A joint means 4 also referred to as a multi-friction joint and including first and second body elements 5 and 6 is disposed about the standard 3 and arranged thereon to receive a support member 7. Support member 7 is provided with clips 8 of any well known type and adapted to hold a blueprint or the like 9.

The base 2 adapted for connection to a support 10 such as a drafting board or the like is shown as comprising an A-shaped bracket 11 having an arc 12 formed thereon which conforms to the configuration of the standard 3. In the form shown, standard 3 comprises a tube and base 2 is connected thereto by threaded members 13.

It will be evident that a detachable type of base member comprising the usual C-clamp unit may be utilized instead of the base shown in FIGURE 6 without departing from the scope of the present invention.

The tubular standard 3 is slidably received by the first body element 5 of joint means 4. A stop means comprising a cap 14 is disposed at the upper end of standard 3 to limit movement of the joint means 4 thereon.

The second body member 6 arranged in transverse relation with the first body member receives the support member 7 which is also preferably of tubular construction and comprises a first rod or tube 15 having a cap 16 disposed on one end serving the same function as cap 14. At the other end rod 15 has formed thereon a first introverted flange 17 which defines an opening 18 of lesser dimension than the inner diameter of rod 15. At a spaced distance from the flange 17 there is formed a second introverted flange 19 or annular bead which has the same diameter as opening 18.

A second rod or tube 20 is contained and guided by the bead 19 and flange 17 and is further provided with a flare at 21 which acts with bead 19 to limit or stop the movement of rod 20 within rod 15. Because flare 21 is about the same dimension as the inner dimension of tube 15 it will be evident that there will be coaction with bead 19 and flange 17 to provide three-point guidance in rod 15 of rod 20.

In order to normally frictionally hold tube 20 in a desired relation in rod 15 a bushing of resilient plastic-like material 22 such as polyethylene is disposed between bead 19 and flange 18 and contained thereby. Bushing 22 may be of the split ring type if desired. Cap 22 is disposed on the end of tube 20 to function as was described above for caps 14 and 16.

Now referring more particularly to the joint means 4, as best represented in FIGURES 2 and 4, it is shown as comprising first and second body elements 5 and 6 of identical construction and comprising means defining coaxial spaced opposed retaining means generally designated 30. The means 30 are provided by forming a first introverted flange 31 on the opposite ends of the body elements 5 and 6. At a spaced distance from the ends of the body elements 5 and 6 there is formed a second introverted flange 32, each of which coacts with flange 31 to define the means 30. The center portion of the body elements 5 and 6 as is shown in the drawings is of lesser dimension than that of the retaining means 30. While the body elements are shown as split rings it is evident that a tubular construction could be provided in keeping with the spirit of the invention.

A T-shaped bracket 33 and having legs 34 and 35 shaped to conform with the shape of the center portion of body elements 5 and 6 is provided and functions to connect the body elements in transverse or perpendicular relation to each other.

Means for retaining the standard and support member taking the form of bushings 36 of similar material as bushing 22 are disposed in the means 30 and retained in posi-

tion by the oppositely disposed flanges 31 and 32 forming the coaxial opposed retaining means 30.

The assembly and operation of the mounting means described herein will be evident to one skilled in the art from the foregoing description and as a consequence it is not believed that operation and assembly thereof need be described in further detail.

FIGURES 7 and 8 show a modified form of joint means or multi-friction joint for the mounting device and except for the modified form of joint means generally designated 40 the construction shown in FIGURES 7 and 8 is otherwise identical to that shown in FIGURES 1 to 6 of the drawings and described hereinabove.

Hence only a fragmentary portion of the mounting means is illustrated. Thus FIGURES 7 and 8 show the multi-friction joint 40 as comprising plural body members 41 and 42. Body member 41 comprises plural tongues 45 and 46 which may be formed as a unitary part of and as extensions of body member 42. Body member 42 is of circular-like construction and shaped and sized to conform to support member 15. Tongues 45 and 46 form an acute angle having its apex at the horizontal centerline of the support 15.

By forming the tongues of a resilient material it will be evident that in extended position as shown in FIGURE 8 they serve to frictionally hold the joint 40 at any desired position on standard 3. Movement of the joint can be accomplished by pinching the tongues as will be clear from the drawings.

In order to firmly engage the support 15, body member 42 is provided with bushings 47 in the retaining means 43 and 44 which are formed at opposite ends of the body member.

Bushings 47 are disposed in the means 43 and 44 of body element 42 and held therein by a pin or like arrangement shown at 48. Pin or like arrangement 48 as shown in FIGURE 7 comprises a depression in retaining means 43 and 44 and by pressing firmly into bushings 47 maintains these bushings in operative position.

Another modified form of multi-friction joint is shown in FIGURES 9 and 10 and comprises tubular body elements 50 and 51 connected in transverse relation by spotwelding as at 53.

Eccentric bushings 54 provided with grooves 56, and of plastic material are held in coaxial opposed retaining means formed in the body elements 50 and 51 by means taking the form of a bead 57.

Rotation of the eccentric bushings about the standard and support provides a locking means to frictionally hold the support member at a desired position. It is obvious that locking action will occur by rotating the eccentric bushing 54 about the tube 15. This can easily be accomplished by manually rotating the eccentric bushing while holding the tube against rotation.

Still another modified form of multi-friction joint 60 is shown in FIGURES 11 and 12 and comprises body elements 61 and 62. Body members 61 and 62 are identical in configuration and comprise a bracket 63 bent at both ends to provide oppositely disposed retaining means 64 and 65. Means taking the form of grommets 66 are disposed in openings formed in the retaining means 64 and 65 and operate to normally frictionally hold the standard and/or support in desired position.

Although this invention has been described with reference to specific apparatus it will be appreciated that a wide variety of changes may be made within the ability of one skilled in the art without departing from the scope of this invention. For example, some certain features of the invention may be used independently of others, and equivalents may be substituted for the apparatus; all within the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A mounting means for blueprints or the like comprising a base for connection to a support, an upright standard connected to said base, a support member for blueprints or the like, a joint means about said standard and comprising first and second body elements, said first and second body elements connected in transverse relation with each other, a pair of spaced opposed retaining means in said first body element, a pair of spaced opposed retaining means in said second body element, means connected to the pair of spaced opposed retaining means on said first body element to coact therewith for receiving said standard and normally frictionally holding said joint means at a desired level on said standard, and means in the pair of spaced opposed retaining means of said second body element for receiving said support member and normally frictionally holding same at a predetermined position relative said upright standard.

2. The mounting means claimed in claim 1 wherein the last mentioned means comprises a pair of resilient plastic-like bushings connected about the interior portion of said pair of spaced opposed retaining means of said second body member.

3. The mounting means claimed in claim 2 wherein the first and second body members are connected to each other between the pair of spaced opposed retaining means and at right angles to each other.

4. The mounting means claimed in claim 2 wherein the means connected to the pair of spaced opposed retaining means of said first body element comprise a pair of grommets disposed about the inner periphery of said last mentioned spaced opposed retaining means.

5. The mounting means claimed in claim 2 wherein the means connected to the pair of spaced opposed retaining means of said first body element comprises a pair of eccentric bushings disposed to receive said support member and to frictionally hold said support member at a desired position upon rotation of said eccentrics in a desired direction.

6. The mounting means claimed in claim 2 wherein the support member comprises a first rod having a first introverted flange formed on the end thereof, a second introverted flange formed inwardly of the end, a second rod telescopically disposed within the first rod and having a flared end coacting with the second flange to preclude fallout of said second rod, and a resilient bushing disposed between said first and second flanges and about the second rod to frictionally normally hold said second rod at a desired position in said first rod.

7. A mounting means for blueprints or the like comprising a base for connection to a support, an upright standard connected to said base, a support member for blueprints or the like, a joint means about said standard and comprising first and second body elements, said first body element including a first pair of introverted end flanges formed on the ends thereof and a second pair of introverted inner flanges formed inwardly of the ends of said first body element, the end flanges and inner flanges coacting to define a pair of coaxial spaced opposed retaining means in said first body element at a spaced dimension from each other, said second body element including a first pair of introverted end flanges formed on the ends thereof and a second pair of introverted inner flanges formed inwardly of the ends of said first body element, the end flanges and inner flanges coacting to define a pair of coaxial spaced opposed retaining means in said first body element at a spaced dimension from each other, a T-shaped bracket contoured to the shape of the portion of said body members between said pair of spaced opposed retaining means interconnecting said first and second body members in transverse relation with each other, resilient plastic-like bushings disposed on the inner portion of the spaced opposed retaining means of said first body element for receiving said standard and normally frictionally holding said joint means at a desired level on said standard, and resilient plastic-like bushings disposed on the inner portion of the spaced opposed retaining means of said second body element for receiving said

support member and normally frictionally holding same at a predetermined position relative said upright standard.

8. The mounting means claimed in claim 7 wherein the support member comprises a first rod having a first introverted flange formed on the end thereof, a second introverted flange formed inwardly of the end, a second rod telescopically disposed within the first rod and having a flared end coacting with the second flange to preclude fallout of said second rod, and a resilient bushing disposed between said first and second flanges and about the second rod to frictionally normally hold said second rod at a desired position in said first rod.

9. A mounting means for blueprints or the like comprising a base for connection to a support, an upright standard connected to said base, a support member for blueprints or the like, a joint means about said standard and comprising first and second body elements of unitary construction and disposed in transverse relation to each other, said second body element including a pair of spaced opposed retaining means, said first body element comprising a pair of resilient tongues comprising extensions of said second body element and said tongues forming an acute angle with the horizontal centerline of said second body member as its apex, said tongues each including means defining a pair of spaced opposed retaining means for receiving said upright standard and normally frictionally holding said joint means at a desired level on said standard, resilient plastic-like bushings disposed on the inner portion of the spaced opposed retaining means of said second body element for receiving said support member and normally frictionally holding same at a predetermined position relative said upright standard, and locking means on the bushings to hold said bushings in operative position in said second body member.

10. A mounting means for blueprints or the like comprising a base for connection to a support, an upright standard connected to said base, a support member for blueprints or the like, a joint means about said standard and comprising first and second body elements, said first body element comprising a tube including means defining a pair of spaced opposed retaining means, said second body element comprising a tube including means defining a pair of spaced opposed retaining means, said first and second body elements connected at the center points thereof and in transverse relation with each other, resilient plastic-like bushings of eccentric configuration disposed in the pair of spaced opposed retaining means on said first body element for receiving said standard whereby said joint is frictionally held at a predetermined position on said standard upon rotation of said eccentric bushings, and resilient plastic-like bushings of eccentric configuration disposed in the pair of spaced opposed retaining means of said second body element for receiving said support member and frictionally holding said support member at a predetermined position relative said standard upon rotation of said eccentric bushings.

11. A mounting means for blueprints or the like comprising a base for connection to a support, an upright standard connected to said base, a support member for blueprints or the like, a joint means about said standard and comprising first and second body elements, said first body element comprising a plate member having bent ends forming a pair of coaxial spaced opposed retaining means and said first body member having a U-shaped configuration, said second body element comprising a plate member having bent ends forming a pair of coaxial spaced opposed retaining means and said second body member having a U-shaped configuration, said first and second body members connected at the portion of the bracket comprising the base of the U and in transverse relation with each other, resilient plastic-like bushings disposed on the inner portion of the coaxial spaced opposed retaining means of said first body element for receiving said standard and normally frictionally holding said vent means at a desired level on said standard, and resilient plastic-like bushings disposed on the inner portion of the coaxial spaced opposed retaining means of said second body element for receiving said support member and normally frictionally holding same at a predetermined position relative said upright standard.

References Cited in the file of this patent

UNITED STATES PATENTS

499,568	Nowotny	June 13, 1893
573,703	Robbins	Dec. 22, 1896
1,151,920	Barton	Aug. 31, 1915
1,557,923	Carroll	Oct. 20, 1925
1,777,185	Thompson	Sept. 30, 1930
2,217,188	Snyder	Oct. 8, 1940
2,256,248	Hansen	Sept. 16, 1941
2,298,140	Mace	Oct. 6, 1942
2,379,379	Schroder	June 26, 1945
2,473,351	Thompson et al.	June 14, 1949
2,537,927	Boltuch	Jan. 9, 1951
2,546,157	Hume	Mar. 27, 1951
2,851,316	Thomson	Sept. 9, 1958
2,955,793	Finley	Oct. 11, 1960
3,036,872	King et al.	May 29, 1962