Jan. 30, 1962 J. B. FRAZELLE 3,018,898

PORTABLE BRACKET POLE

Filed March 14, 1960

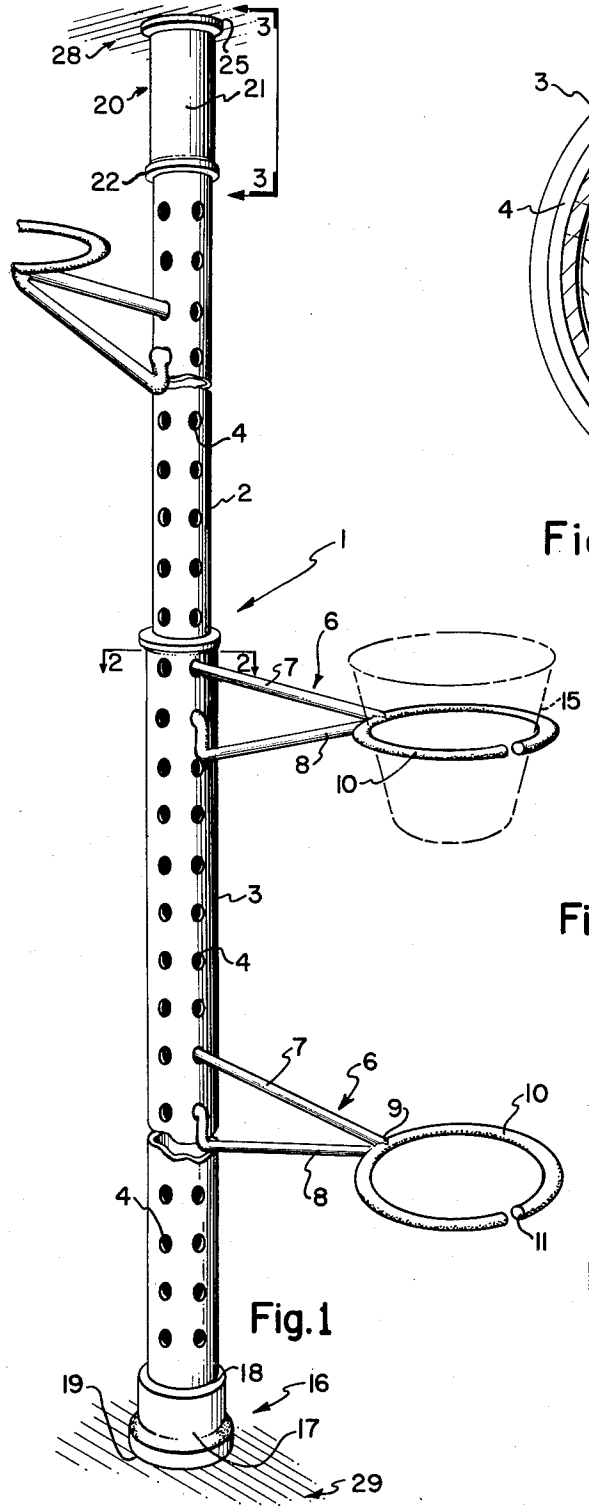


Fig. 1

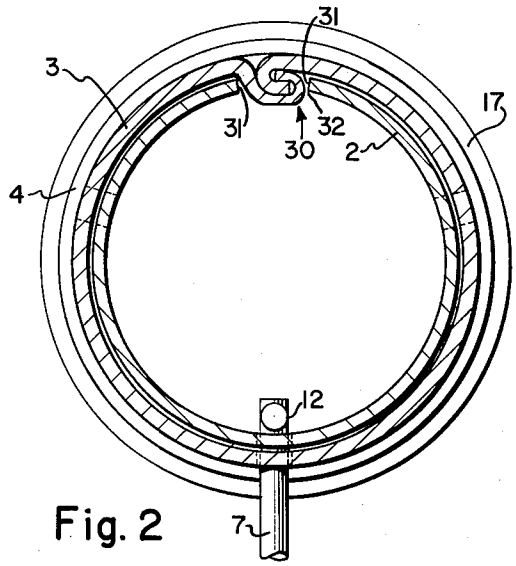


Fig. 2

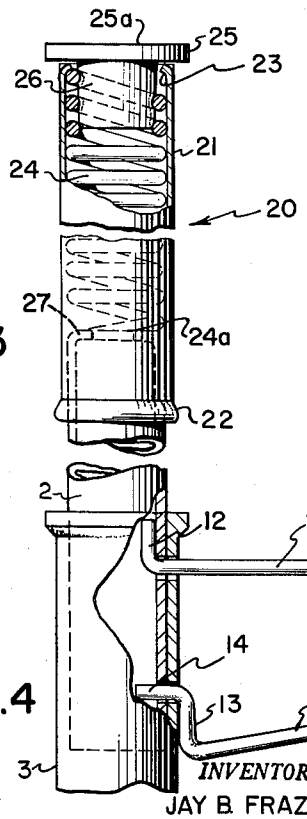


Fig. 3

Fig. 4

INVENTOR.
JAY B. FRAZELLE
BY Rodger G. Allaman
Attorney

United States Patent Office

3,018,898

Patented Jan. 30, 1962

3,018,898

PORTABLE BRACKET POLE

Jay B. Frazelle, 1543 Belleville Way, Sunnyvale, Calif., assignor of one-third each to John G. Molek, Santa Clara, and Ralph F. Long, Sunnyvale, Calif.

Filed Mar. 14, 1960, Ser. No. 14,781

5 Claims. (Cl. 211—86)

This invention relates generally to the field of supports and is more particularly directed to a portable bracket pole structure.

The prior art discloses many types of shelf supports and fixtures which are provided with various types of removable or interchangeable hanger fixtures. Perhaps the best known and most commonly employed system of this type is the "peg board" concept which provides a series of uniformly spaced apertures into which bracket members are adapted to be disposed. There are no previously developed devices, however, which combine the utility of this type system with portability which will adapt to the wider application foreseen for the present invention.

It is therefore an object of this invention to provide a portable, easily installed bracket structure which lends itself to ready installation within a wide variety of physical surroundings. It is a further object of this invention to provide such a structure which may be rigidly and reliably positioned to support a plurality of interchangeable bracket units.

A still further object of the invention is to provide a portable, adjustable bracket structure composed of a number of telescopic members which are secured in a desired relationship by the interposition of a specially formed bracket support.

An additional object is to provide an elongated, extendable support structure having spring-biased adjustment means at at least one extremity thereof to facilitate its rapid installation in a given space without the use of nails, screws or other attachment means.

Yet another object of the invention is to provide a device of the character described wherein a pleasing appearance is created at relatively small cost to provide a structure which will support brackets at a plurality of annular positions thereabout.

With these and other objects in mind, the invention will now be described in connection with the accompanying drawings wherein like numerals denote like parts throughout the figures and in which:

FIGURE 1 is a perspective view of the support bracket of the present invention,

FIGURE 2 is a cross-sectional view taken on line 2—2 of FIGURE 1,

FIGURE 3 is a detailed view shown partly in section of an end portion of FIGURE 1, looking in the direction of arrows 3—3 of FIGURE 1, and

FIGURE 4 is a view shown partly in section showing details of the interaction of the two major elongated members of the invention.

Reference is taken to FIGURE 1, wherein the support bracket structure of the invention is shown generally, and which will be seen to consist of upper and lower tubular members 2 and 3. Manifestly, members 2 and 3 are of differing diametrical dimensions so that member 2 can be telescopically inserted in coaxial relationship into member 3, the two members being longitudinally adjustable in relation one to the other.

Tubular telescopic members 2 and 3 are provided with a plurality of apertures 4 which are preferably uniformly spaced longitudinally of the members and are equiangularly disposed around their periphery. I have found that the objects of the invention are well served by providing from three to five such apertures in each tubular member at a given position about its periphery.

Also provided are a number of bracket members 6 which are seen to have generally triangularly shaped base portions with legs 7 and 8. Secured to legs 7 and 8 generally at their point of conjuncture 9 and at a right angle thereto is a holder ring 10 preferably circular in shape and which is provided with a "break" 11 at a point in its circumference which is remote from the point of conjuncture 9. Obviously, holder ring 10 could be formed in any desired shape depending upon the requirements of a given application. Legs 7 and 8 are provided with specially formed terminant portions which facilitate their interconnection with tubular members 2 and 3 and which provide a rigid base for items which they are called upon to support. Thus, in FIGURE 4, end 12 of leg 7 will be seen to be upturned substantially at right angles to leg 7 and generally normally in relation to the plane containing holder ring 10. Similarly, the end of leg 8 is generally upturned as at 13 at an (inner) acute angle from leg 8 and in generally parallel relation to end 12 of leg 7, upturned portion 13 being terminated in an insertable stud 14 which lies generally in a plane parallel to the plane containing ring holder 10.

Also from a consideration of FIGURES 1 and 4, the manner in which tubular members 2 and 3 are interconnected, utilizing the aforedescribed end features of bracket members 6 will be apparent. With members 2 and 3 coaxially telescoped together to a desired location, a number of apertures 4 are coincided so that an aperture 4 in member 3 registers with an aperture 4 in member 2 into which an upturned end 12 of a bracket member 6 is then inserted. As the insertion continues, bracket member 6 is rotated downwardly until insert stud 14 may be introduced into another (lower) pair of registering apertures 4 in members 2 and 3. From FIGURE 4 it will be seen that the inner surface of upturned end 12 will be forced against the inner surface of the wall of member 2 while the outer surface of upturned portion 13 will be placed against the outer surface of member 3 to provide a firm weight-bearing support.

It should be noted that more than one support bracket 6 may be inserted into the registering apertures 4 in members 2 and 3 respectively in the area of overlap as has just been described and as is shown in FIGURE 4. Additionally, it will probably be desirable to position a number of bracket members 6 in longitudinally disposed relation about telescoped members 2 and 3 in a variety of physical arrangements, once members 2 and 3 have been previously securely interrelated in the manner next above described. Two such support members 6 are shown in position above and below this bracket member.

Obviously bracket member 6 may be used to provide support for a receptacle as at 15 or the like. The provision of a "break" also enables receptacles of varying peripheral dimension to be inserted thereinto.

At the lower end 16 of member 3 is provided an end cap 17 formed preferably of a resilient or elastomeric material such as rubber or the like which is non-marring to wood, tile and other surfaces with which it may come in contact.

Cap 17 is provided with a recess 18 into which the bottom portion of member 3 is adapted to be inserted. Bottom surface 19 is preferably flat so as to furnish friction over the widest possible area.

At the upper end of inner telescopic member 2 is a spring-biased takeup section generally indicated at 20 and shown in detail in FIGURE 3. This unit 20 consists of an adjustment section 21 having an internal diameter substantially identical with that of member 3 and which is adapted to be substantially coaxially, telescopically,

positioned onto the upper end portion of member 2. The lower end terminates preferably in a "flare" or embossment 22 while the upper end is provided with a number of inwardly-angled flanges 23. Obviously, for the purpose to be described, flanges 23 may inwardly extend completely around the periphery of this end of adjustment section 21.

Shown within adjustment section 21 is a spring 24, the outer diameter of which, under compression, is just slightly less than the inner diameter of adjustment section 21 and which is adapted to be retained therein. The lower end portion 24*a* of spring 24 rests upon the upper end of telescopic member 2, which end may also be provided with inturned flanges as indicated at 27. Thus, spring 24 is retained within the area defined by tube 21, at the lower end 24*a* by the top portion of tubular member 2, and at the upper end by inturned flange 23. Inserted within the open upper end defined by flange 23 of telescopic adjustment section 21 is a resilient cap member 25 of a material similar to that described in connection with cap 16 and which is provided with a flat surface 25*a* which is similar to surface 19 of cap 16. A central body portion 26 of cap 25 extends into adjustment section 21 and is adapted to resiliently engage the inner surface of spring 24. Thus, this inner engagement with spring 24 serves to maintain cap 25 in proper position while at the same time cap 25 assures that spring 24 is maintained within telescopic adjustment section 21 should this unit be removed, inadvertently or otherwise, from the top of member 2.

Operation

In utilizing the device, telescopic tubular members 2 and 3 of any desired length and containing uniformly spaced inter-registerable apertures 4 are coaxially engaged and adjusted so as to form a structure which is of a length slightly less than the distance between a "ceiling" and "floor" 28 and 29. At least one bracket member 6 is inserted into mating apertures 4 to thus securely retain the members at the desired length. End cap 16 being in position, adjustment member assembly 20 is telescopically engaged with the top of member 2 and the same is displaced downwardly against the bias of spring 24 while the unit is vertically aligned. Upon release, the tension of spring 24 will force adjustment section 21 toward the "ceiling" and the assembly formed by the interrelation of members 2 and 3 toward the "floor" in a firmly secured manner.

Additional brackets 6 are added as desired to form an artistic display.

One of the features of the present invention is the facility with which it may be manufactured utilizing well known commercially available techniques. Thus, tubular members 2 and 3 of given length may be precut and the apertures 4 stamped therein, after which the members are rolled or bent to the desired cross sectional configuration. A preferred embodiment of the invention as disclosed in FIGURE 2 shows a circular cross sectional embodiment of the device in which the longitudinal edges of tubular member 3 may be rolled together in a conventional "rolled in" seam as generally indicated at 30.

This type of seam provides a bulge or embossment longitudinally extending the entire length of member 3. Advantage is taken of this embossment to provide a constant positive alignment of apertures 4 in members 2 and 3 in that member 2, also of circular cross section and of predetermined width, is rolled so that its longitudinal edges 31 are spaced apart a distance which is approximately equal to the width of the embossment 30, to provide a longitudinal slot 32. As mentioned, this method of assembly assures that apertures 4 are always in radial alignment and in addition assures a stronger, non-rotative inner engagement by the two principal support members of the device.

Other cross section configurations may be desirable based on the teachings described herein. Similarly it may be desired to provide both the bottom of member 3 and the top of member 2 with adjustment sections as generally described in connection with FIGURE 3. Also, to provide structures of greater length and rigidity it may be desirable to provide a series of alternately inter-engaged tubular members such as 2 and 3 which are secured together at various points throughout their length by the insertion of a plurality of support brackets 6.

Obviously, while the invention has been described in connection with a "floor" and "ceiling" it should be understood that it is readily adapted to be positioned between the upper and lower sills of windows, or between "room dividers" and ceilings, and the like. In this respect, one of the principal uses intended for the invention is to provide an easily installable, inexpensive and fashionable support which may be installed within a window casement to support flower containers. Growers of the varieties of African violets will appreciate that such flora thrive and indeed require, an amount of warmth, moisture and light, the combination of which is in most houses found within the area of a window above a kitchen sink (where moisture-laden vapors from the use of hot water are constantly available). Obviously, a large number of such valuable plants may be attractively supported by only a single bracket constructed in accordance with the teachings of the present invention.

The invention has found equal utility in connection with many household requirements such as the indoor drying of clothes, and in commercial use as a basic bracket support for window dressings and the like. Obviously a plurality of such support brackets may be utilized in combination to provide scaffold support for a shelf member, transversely supported across two bracket members 6.

While a preferred embodiment of the invention has been described it should be understood that the scope of the invention is not to be limited thereto as many changes and modifications will be readily apparent to those skilled in the art and the invention therefore is to be given the broadest interpretation within the terms of the appended claims.

I claim:

1. A portable bracket device comprising at least one inner and one outer tubular member in telescopic relation, a plurality of longitudinally uniformly spaced, radially inter-registerable apertures in each of said tubular members, at least one bracket member secured to said tubular members, said bracket member having an article receiving support at one end thereof and a pair of legs attached to said support, a terminant stud on the end of each of said legs engaged in two pairs of inter-registering apertures in the area of overlap of said telescoping members, and an adjustment section in telescoped relation over an open end of one of said tubular members, an inwardly turned flange on one end of said adjustment section, and a compression spring within said adjustment section abutted at one end by said flange and at the other by the end of said tubular member, a resilient end cap covering the end of said adjustment section, a central body portion extending from said end cap into said adjustment section and into resilient engagement with the end coils of said spring, whereby said spring and said end cap each cooperate to restrain the other within said adjustment section.

2. A portable bracket device comprising at least one inner and one outer tubular member in telescopic relation, a plurality of longitudinally uniformly spaced, radially inter-registerable apertures in each of said tubular members, at least one bracket member secured to said tubular members, said bracket member having an article receiving support at one end thereof and a pair of legs attached to said support, a terminant stud on the end of each of said legs engaged in two pairs of inter-registering apertures in the area of overlap of said telescoping members, and an adjustment section in telescoped relation

over an open end of one of said tubular members, an inwardly turned flange on one end of said adjustment section, and a compression spring within said adjustment section abutted at one end by said flange end at the other by the end of said tubular member, a resilient end cap covering the end of said adjustment section, a central body portion extending from said end cap into said adjustment section and into resilient engagement with the end coils of said spring, whereby said spring and said end cap each cooperate to retain the other within said adjustment section, the open end of said tubular member being inwardly flanged, the longitudinal edges of said outer tubular member being joined in a rolled-in seam which constitutes a longitudinal embossment on the inner periphery of said outer member, the longitudinal edges of said inner tubular member being spaced apart to receive said embossment whereby said outer and said inner members are keyed against radial relative movement as they are assembled.

3. A portable bracket device comprising an inner and an outer tubular member in telescoped relation, a plurality of longitudinally uniformly spaced radially interregisterable apertures in said tubular members, a bracket having a circular article receiving support at one end thereof and a pair of legs attached thereto, a break in said circular support located at a point remote from the area of attachment of said legs, terminant studs on the ends of each of said legs engaged in two pairs of registering apertures in the area of overlap of said telescoped members, a flat-headed resilient end cap fitted over the lower end of said outer tubular member, and a tubular adjustment section telescoped over the end of said tubular member, an inwardly turned flange at the upper end of said adjustment member, a compression spring having an outer diameter only slightly less than the inner diameter of said inner tubular member positioned within said adjustment section abutted at one end by said flange and at the other by the upper end of said inner tubular member, a resilient, flat-headed cap member covering the open end of said adjustment section, a central body portion attached to the underside of said cap member extending into said spring and resiliently engaging the end coil turns thereof, the longitudinal edges of said outer tubular members joined in a rolled-in seam which provides an elongated embossment on the inner periphery of said outer member, a space between the longitudinal edges of said inner member receiving said embossment, and a plurality of additional bracket members engaged in selected pairs of said apertures throughout the length of said telescoped tubular members.

4. A portable bracket device comprising at least one inner and one outer telescoping tubular member, bracket means attached to said tubular members and extending

outwardly therefrom for adjustably securing said members against longitudinal relative motion, a spring biased adjustment section means secured to the free end of at least one of said tubular members for rapidly adjusting the overall length of the composite structure, said adjustment section means comprising an open-ended tubular adjustment section which is telescoped over the free end of one of said tubular members, an inwardly turned flange on one end of said adjustment section, and a compression spring within said adjustment section abutted at one end by said flange and at the other by said free end of said tubular member, a resilient end cap covering the end of said adjustment section, a central body portion extending from said end cap into said adjustment section and into resilient engagement with the end coils of said compression spring, whereby said spring and said end cap each cooperate to retain the other within said adjustment section.

5. A portable bracket device comprising at least one inner and one outer telescoping tubular member, bracket means attached to said tubular members and extending outwardly therefrom for adjustably securing said members against longitudinal relative motion, a spring biased adjustment section means secured to the free end of at least one of said tubular members for rapidly adjusting the overall length of the composite structure, said adjustment section means comprising an open-ended tubular adjustment section which is telescoped over the free end of one of said tubular members, an inwardly turned flange on one end of said adjustment section, and a compression spring within said adjustment section abutted at one end by said flange and at the other by said free end of said tubular member, the longitudinal edges of said outer tubular member being joined in a rolled-in seam which constitutes a longitudinal embossment on the inner periphery of said outer member, the longitudinal edges of said inner tubular member being spaced apart to constitute a slot receiving said embossment, whereby said outer and said inner members are keyed against radial relative movement.

References Cited in the file of this patent

UNITED STATES PATENTS

1,548,053	Mead	Aug. 4, 1925
1,875,977	Beckwith	Sept. 6, 1932
2,265,794	Aske	Dec. 9, 1941
2,903,227	Key	Sept. 8, 1959

FOREIGN PATENTS

429,863	France	July 28, 1911
83,485	Norway	Apr. 12, 1954