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2,749,147

COLLAPSIBLE STANDS

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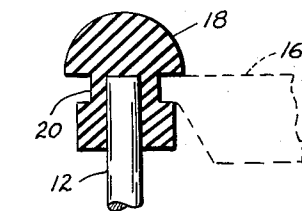
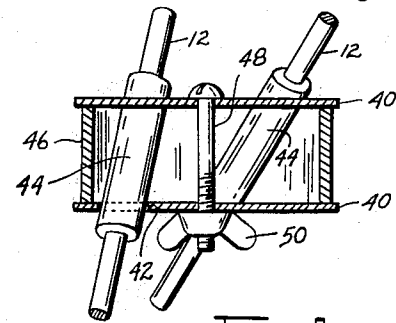
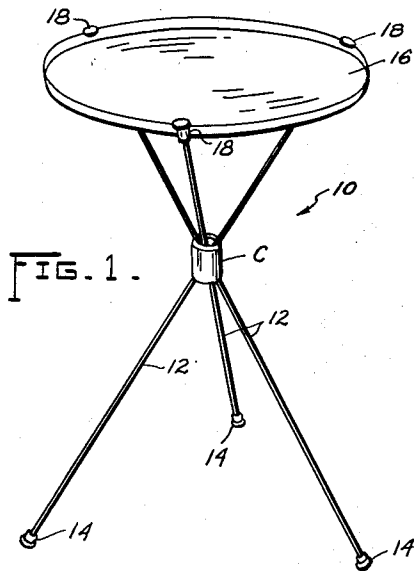


FIG. 3.

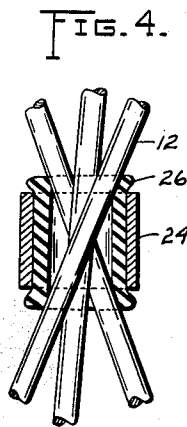


FIG. 4.

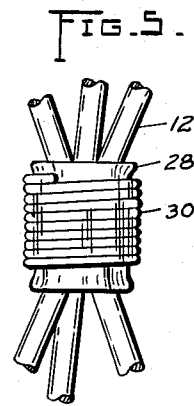


FIG. 5.

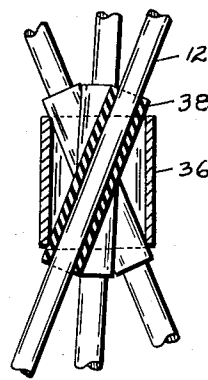
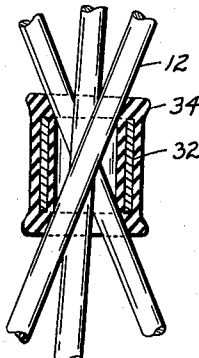


FIG. 6.

FIG. 7.

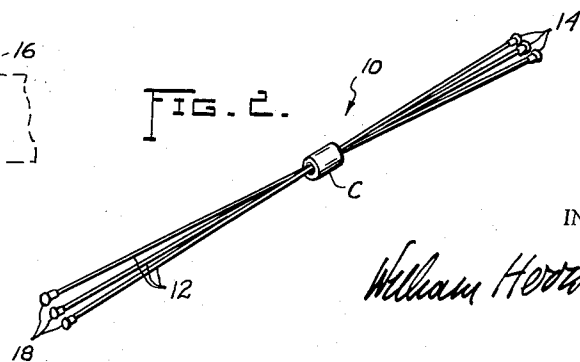


FIG. 2.

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3 Claims. (Cl. 248—164)

This invention relates to improvements in collapsible stands, particularly stands such as may be conveniently employed in conjunction with flat or dished tops to form tables, or the like, and the principal object of the invention is to provide a stand of this type which may be quickly and easily erected or collapsed and which may be expeditiously adjusted so as to accommodate tops of different sizes.

More specifically, the invention contemplates the provision of a stand embodying a plurality of crossed legs and novel means for adjustably and collapsibly connecting the legs together at their point of crossing, the arrangement being such that the legs are constantly urged toward the vertical axis of the stand and their upper end portions are thus sustained in frictional gripping engagement with the stand top.

An important feature of the invention therefore resides in the novel leg connecting means which facilitate the frictional engagement of the legs with the top of the stand, regardless of the size of the top, while another feature lies in the provision of means on upper end portions of the legs for properly seating the top, so that the entire unit is substantially rigid and stable when in its erected position.

Some of the advantages of the invention reside in its very simple but durable construction, in its convenient portability and collapsibility, in its pleasing appearance and in its adaptability to economical manufacture.

With the above more important object, features and advantages in view, and others such as may become apparent hereinafter, the invention resides in the construction shown in the drawings wherein:

Figure 1 is a perspective view of the collapsible stand in its erected position,

Figure 2 is a perspective view of the stand in its collapsed position,

Figure 3 is a sectional detail illustrating the stand top engaging and seating means at the upper end of one of the legs,

Figure 4 is a sectional detail showing one form of the leg connecting means,

Figure 5 is an elevational view showing a second form of the leg connecting means,

Figure 6 is a sectional detail showing a third form of the leg connecting means,

Figure 7 is a sectional detail showing a fourth form of the leg connecting means, and

Figure 8 is a sectional detail showing a fifth form of the leg connecting means.

Corresponding reference numerals designate corresponding parts in the specification and in the drawings.

Referring now to the accompanying drawing in detail, the invention comprises a collapsible stand which is designated generally by the reference character 10 and embodies in its construction a plurality of crossed legs 12 which are provided at their lower ends with suitable feet 14, preferably of resilient material.

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The legs 12 are adjustably connected together at their point of crossing by the coupling means C, several embodiments of which are disclosed, as will be hereinafter specifically described. With reference to Figure 1, it will suffice to say for now that the coupling means C are such as to urge the upper and lower ends, respectively, of the legs 12 together, whereby a suitable top member 16 may be frictionally engaged by and supported between the upper ends of the legs.

To assist the legs in performing this function, the upper ends thereof may be equipped with rubber-like elements or heads 18, preferably having annular grooves 20 therein to afford seats, so to speak, for the marginal edges of the top member 16, as is best shown in Figure 3.

It may be added at this point that although the accompanying drawings disclose the stand as being composed of only three legs and the top member 16 as being substantially circular in form, it should be understood that any plurality of legs may be employed and that the top member may be of any suitable geometrical configuration. Moreover, the top member may be either flat or dished, or simply in the form of a plain ring or annulus, by which other auxiliary top members (not illustrated) may be supported.

Referring now to the accompanying Figure 4 which illustrates one embodiment of the connecting means C, the same consists of a relatively rigid tubular sleeve 24 containing a substantially tubular bushing 26 of resilient material, the latter being somewhat longer than the sleeve so that it projects therefrom at both ends, as shown. The legs 12 extend through the bushing and are frictionally engaged thereby.

In another embodiment of the connecting or coupling means C shown in Figure 5, the substantially tubular resilient bushing 28 is contained in a tubular sleeve which consists of a closely wound helical coil 30 which, although being more rigid than the bushing 28, is more flexible and resilient than the aforementioned sleeve 24 and, by virtue of its flexibility and resiliency, coacts at least to some degree with the bushing 28.

In a further modified embodiment of the coupling means shown in Figure 6, a relatively rigid tubular sleeve 32 is fully embedded in a substantially tubular resilient bushing 34, the interior of which frictionally engages the legs 12, as illustrated.

A still further modified embodiment of the coupling means shown in Figure 7 embodies a relatively rigid tubular sleeve 36, while the resilient bushings associated with the sleeve assume the form of a plurality of separate tubular jackets 38 of resilient material, which are frictionally slidable on the respective legs 12 while being disposed in and engaged by the sleeve 36.

Finally, the embodiment of the coupling means shown in Figure 8 comprises a pair of vertically spaced, relatively rotatable plates 40 which are provided with apertures, one of which is shown at 42, to receive resilient tubular jackets 44 frictionally slidable on the respective legs 12. An annular spacer 46 is disposed between the plates 40 and a clamping screw 48, equipped with a wing nut 50, extends vertically through the plates so as to clamp the same against the spacer 46.

When the stand is placed in use, the upper ends of the legs 12 are spread apart and the top member 16 is engaged with the grooves seats 20 in the heads 18. Regardless of which embodiment of the coupling means C is employed, the slender legs 12 possess a certain amount of resiliency which sustains the heads 18 in frictional gripping engagement with the top member while portions of the legs at their point of crossing are bound together by the coupling means. In the coupling means shown in Figures 4, 5 and 6, this action is further emphasized by

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the bushings 26, 28 and 34, respectively, which at all times urge the legs together. The jackets 38 in the coupling means of Figure 7 function in a similar manner, so that when the top member 16 is removed, the stand automatically assumes a slender, collapsed form as shown in Figure 2.

In the coupling means of Figure 8 the two plates 40 are rotatable relative to each other so that the legs 12 may be adjusted to proper angular positions for gripping the top member, whereupon the clamping screw 48 is tightened. The jackets 44 coact with the inherent resiliency of the legs in causing the upper ends of the legs to grip the top member and it should be understood, of course, that upon removing the top member and loosening the screw 48, a stand with coupling means of Figure 8 may also be collapsed to a slender form, substantially as shown in Figure 2.

By sliding the coupling means C upwardly or downwardly on the legs 12, the stand may be readily adjusted to accommodate top members 16 of various sizes. For best results from the standpoint of proper stability and rigidity, the coupling means C should be spaced downwardly from the upper ends of the legs by a distance which is substantially equal to the diameter or width of the top member to which the legs are to be applied.

While various embodiments of the invention are disclosed herein, it will be obvious to those skilled in the art that the invention is susceptible to further changes and modifications without departing from the spirit thereof; therefore, it is desired that only such limitations be placed upon the scope of the invention as are set forth in the appended claims.

Having thus described the invention, what I claim as new is:

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1. In a collapsible stand and the like, the combination of a plurality of crossed legs formed from rod-shaped material, a substantially tubular resilient bushing frictionally encircling said legs at their point of crossing and urging the same together, and a substantially tubular reinforcing sleeve frictionally mounted on the outer surface of said bushing, end portions of said bushing projecting beyond the ends of said sleeve, whereby the end portions of the bushing are subject to limited lateral deflection by said legs.

2. The structure as defined in claim 1, wherein said sleeve comprises a rigid tube.

3. The structure as defined in claim 1, wherein said sleeve comprises a closely wound helical coil.

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