United States Patent [19]

Petrie

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[54] COLLAPSIBLE TREE STAND

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[52] **U.S. Cl.** **248/48,** 248/188.7

[51] **Int. Cl.** **A47g 33/12**

[58] **Field of Search** 248/46, 47, 48, 150, 248/165, 188.7

[56] **References Cited**

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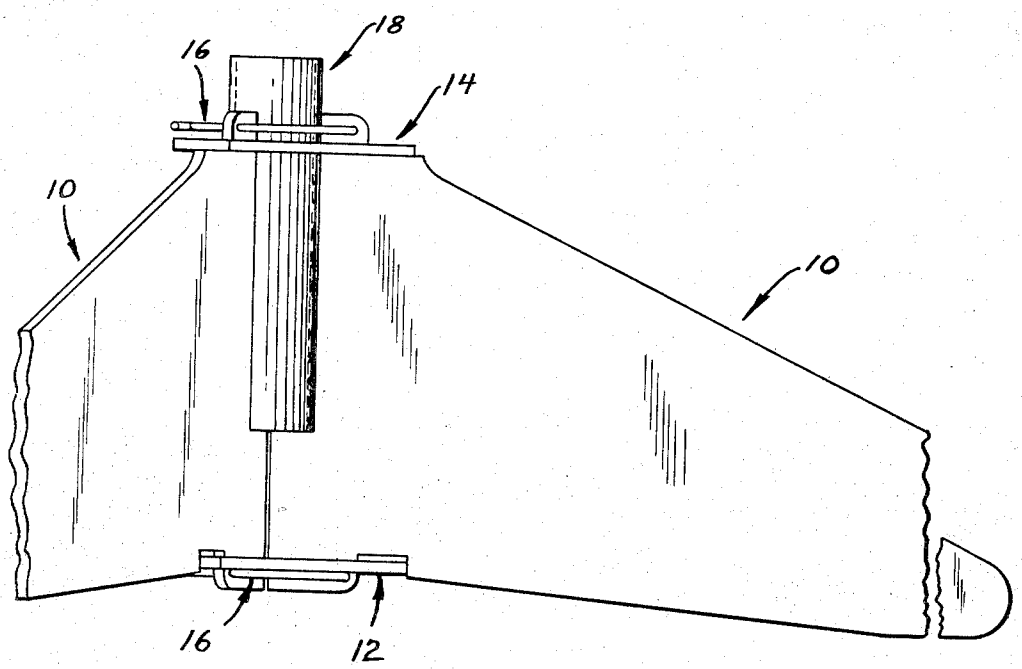
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Primary Examiner—William H. Schultz
Attorney—Axel A. Hofgren et al.

[57] **ABSTRACT**

A collapsible stand for supporting a pole or the like vertically off the ground including three, generally triangularly shaped legs each of which has a substantially vertical side with tongues projecting from both ends thereof. A pair of connectors including three equally spaced, radially extending slots are provided, one for receiving the uppermost tongues of the legs and one for the lowermost tongues of the legs. Retaining means are provided for the connectors and the uppermost connector includes an aperture to provide access to an upwardly opening notch in each of the legs for receipt of a pole therein.

7 Claims, 5 Drawing Figures



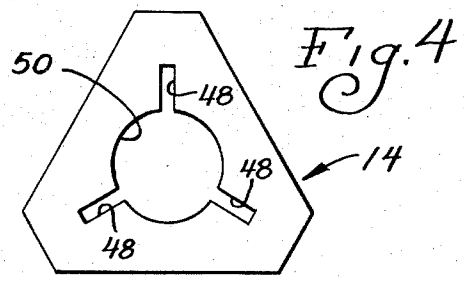


Fig. 4

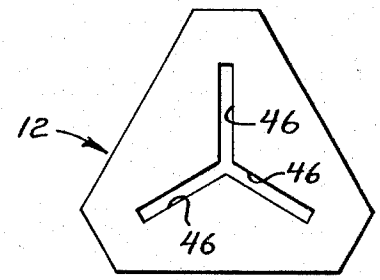


Fig. 3

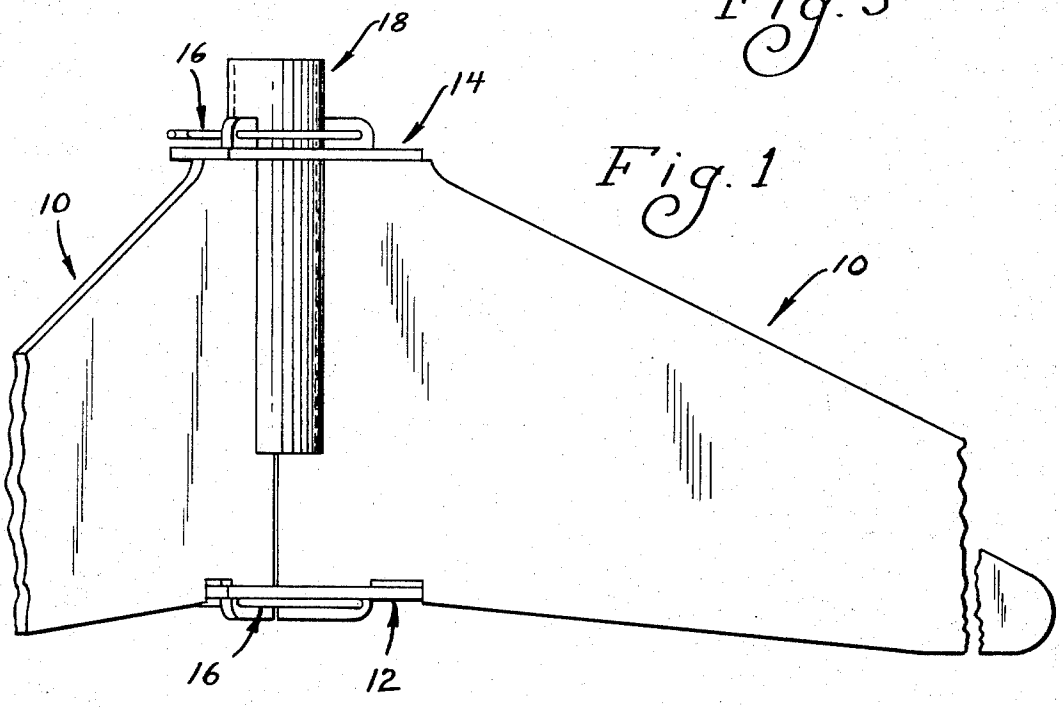


Fig. 1

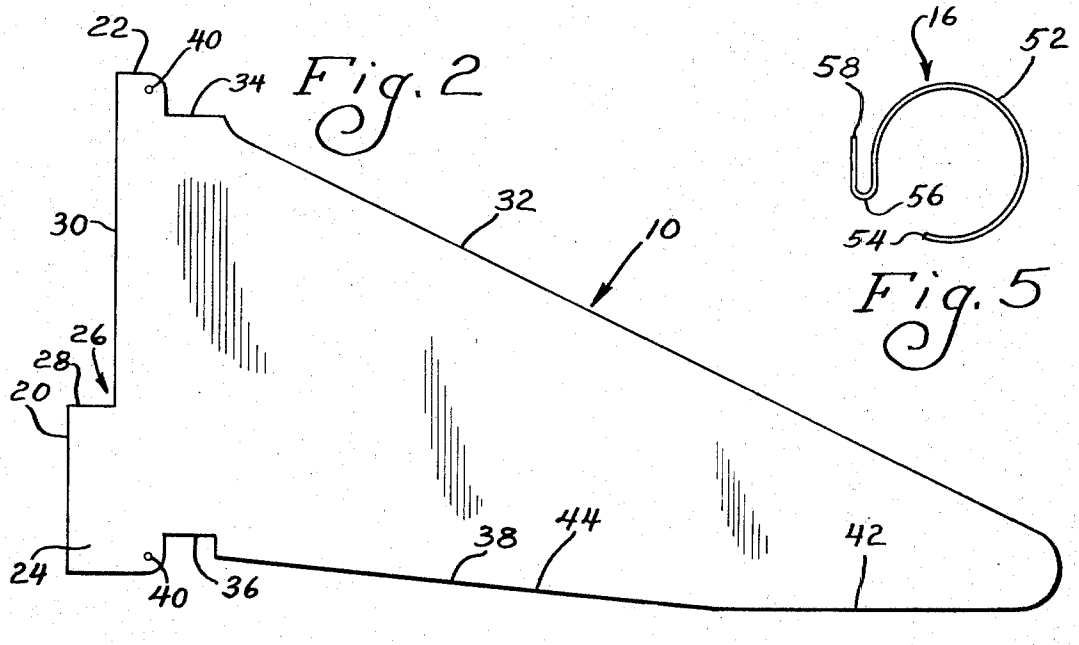


Fig. 2

Fig. 5

COLLAPSIBLE TREE STAND

BACKGROUND OF THE INVENTION

This invention relates to a stand for supporting a tree, pole, or the like off the ground wherein the lower end of the tree or pole is received in a pole receiving recess defined by a plurality of slots in a plurality of legs. The legs are removably connected to each other.

The best prior art known to applicant includes U.S. Pat. Nos. 2,502,667 to Pagett; 1,036,240 to Holden; 357,792 to Smith; 2,469,286 to Wuerl et al.; 1,617,765 to Leedy; and German patent 19,420 to Trautsch.

As exemplified by the foregoing patents, it has been known to support a pole-like object vertically off the ground by means of a pole receiving member including a plurality of legs. While such structures have generally performed their intended function efficiently, they generally are susceptible to a variety of drawbacks. For example, some constructions are not collapsible, thus rendering storage difficult. Moreover, when such stands are to be used for supporting objects such as Christmas trees, and would therefore be sold in volume, because they are not collapsible, they are extremely difficult and bulky to package. This factor is a significant drawback in their commercial acceptance.

Others, while collapsible, frequently are not self-sustaining and/or unstable and therefore difficult to use.

SUMMARY OF THE INVENTION

It is the principal object of this invention to provide a new and improved stand for supporting a tree, pole or the like vertically off the ground and which is completely collapsible, includes a minimum of parts and is extremely stable when assembled.

The exemplary embodiment of the invention achieves the foregoing object by means of a construction including a plurality of legs, each generally triangular in configuration. Each leg includes a generally vertically extending side terminating at respective ends in upwardly and downwardly extending tongues. The side is also provided with an upwardly opening notch, the lower extremity of which is adapted to support the end of a pole while the side extremity of which is adapted to firmly embrace the periphery of a pole.

The legs are assembled by means of first and second connectors. The first connector includes a plurality of radially extending slots equal in number to the number of legs employed. The slots are equally radially spaced and receive the downwardly projecting tongues on the legs. A second connector is also provided with radially extending slots that are equally radially spaced from each other and correspond in number to the number of legs employed. Slots in the second connector and adapted to receive the outwardly extending tongues of the legs. The second connector is also provided with a central opening allowing access to a pole receiving recess defined by the aforementioned notches in the vertical sides of each leg.

Retaining means are provided for retaining the connectors on the stand in assembled configuration. Preferably, each of the tongues includes an aperture intermediate its length which aperture is adapted to threadedly receive a resilient wire loop which sandwiches the corresponding connector against the adjacent edges of the legs.

According to one embodiment, a tubular adaptor may be employed to adapt the pole receiving recess to receive poles of differing diameters.

Other objects and advantages will become apparent from the following specification taken in conjunction with the accompanying drawings.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevation of a pole stand made according to the invention;

FIG. **2** is a side elevation of a leg employed in the stand;

FIG. **3** is a plan view of a first connector;

FIG. **4** is a plan view of a second connector; and

FIG. **5** is a plan view of a resilient retainer used in conjunction with the connectors.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIG. **1**, an exemplary embodiment of a stand made according to the invention is seen to be to be comprised of a plurality of legs, generally designated **10**, and normally three in number; a first connector element, generally designated **12**, for securing the undersides of the legs **10** together; a second connector element, generally designated **14**, for securing the upper ends of the legs **10** together; a pair of retaining means, each generally designated **16**, one for each of the connectors **12** and **14** to hold the same in place, and optionally, a pole size adaptor, generally designated **18**.

Referring now to FIG. **2**, the legs **10** will be described with the understanding that each is identical to the other. Specifically, each leg **10** is formed of a suitable sheet material as, for example, plywood or plastic. In the case of the latter material for additional strength, it may be desirable to provide stiffening ribs (not shown) for additional strength. Each leg **10** is in the general form of a right triangle, although such obviously is not the case in the strictest sense. Specifically, each leg includes a generally vertical side **20** terminating at its upper end in an upwardly extending tongue **22** and terminating at its lower end in a downwardly extending tongue **24**. Each vertical side **20** is also provided with an upwardly opening cut-out or notch, generally designated **26**, having a generally horizontal lowermost boundary **28** and a vertical boundary **30**. As will be seen, the horizontal boundary **28** serves as a seat for the end of a pole to be received in the stand while the vertical boundary **30** embraces the side of the pole for stability. If an adaptor such as that illustrated at **18** in FIG. **1** is employed, the vertical boundary **30** will, of course, not embrace the pole, but rather the adaptor **18**, as will be described in greater detail hereinafter.

Formed in the hypotenuse side **32** of each leg **10** adjacent the upwardly extending tongue **22**, is a horizontal surface **34** which seats the second connector **14**. A similar seat is defined by a downwardly notch **36** in the horizontal side **38** of each leg to receive the first connector **12**.

In addition, each of the tongues **22** and **24** is provided with an aperture **40** which cooperates with the retaining means **16** as will be seen.

It is preferable that the horizontal side **38** of each leg be formed with a horizontal segment **42** near its outer-

most extremity and a relieved portion **44** extending from the segment **42** inwardly to the vertical side **20**. By reason of this configuration, in use, only the horizontal segment **42** will actually be in contact with the supporting surface so that the weight of the pole, etc., being supported by the stand will be distributed to the outermost reaches of the stand to maximize stability.

Turning now to FIG. **3**, the first connector **12** is seen to be hexagonal in shape and, as can be observed from FIG. **1**, is formed of sheet material along the lines of the sheet material employed in the legs **10**. A plurality of slots **46** extend through the first connector **12**, are generally radially oriented, are equal in number to the number of legs **10** employed, and are equally radially spaced with respect to each other. As can be perceived from FIG. **1**, the slots **46** receive corresponding ones of the tongues **24** on the legs **10**.

FIG. **4** illustrates the second connector **14** in greater detail and, it too, is seen to be generally hexagonal in shape and also formed of sheet material. The second connector **14** includes a plurality of slots **48** again, equal in number to the number of legs employed, radially extending, and radially equally spaced with respect to each other. The slots **48**, as can be perceived from FIG. **1**, are adapted to receive the tongues **22** on corresponding ones of the legs.

The second connector **14** is also provided with a central aperture **50**, which, when assembled with the legs **10**, will be aligned with the vertical boundaries **30** of the notches **26** in the three legs **10** so as to define an opening through which a pole may be placed to be received in a pole receiving recess defined by the notches **26** of the legs **10**.

FIG. **5** illustrates the retaining means **16**. In particular, the retaining means **16** comprise a loop of resilient wire **52** having one end **54** slightly spaced from a redirected portion **56** of the opposite end **58**. The redirected portion **56** provides a grasping portion for the retaining means to allow the free end **54** to be threaded through the apertures **40** after the connectors **12** and **14** are in place in such a way as to sandwich the associated connector against the legs **10**.

Returning now to FIG. **1**, the adaptor **18** is simply a tubular member having an outer diameter approximating the dimensions of the pole receiving recess defined by the notches **26** and an inner diameter corresponding to the diameter of the pole to be supported in the stand. When the adaptor **18** is employed, it is inserted through the aperture **50** in the second connector **14** to be seated in the pole receiving recess and the pole to be supported may then simply be disposed within the tube.

It will be appreciated from the foregoing description that a stand made according to the invention requires a minimum number of parts and is easily assembled or disassembled for storage or the like. Moreover, since all parts, with the exception of the optional adaptor **18**, are so-called "flat" parts, the stand may be easily packaged with a minimum of bulk.

It will be recognized from the various structural features mentioned above that the stand provides unusual stability in that it does not rely on compression against the pole received therein and in that the connector parts are positively held in place by the retaining means **16**.

Moreover, the upper retaining means **16** serve, when the stand does not contain a pole, to maintain proper spacing of the upper ends of the legs to allow the easy insertion of a pole without simultaneous manipulation of parts of the stand.

I claim:

1. A collapsible stand for poles, trees, or the like comprising: at least three leg elements, each leg element being generally triangular in shape and having a generally vertically extending side, a first, downwardly extending tongue extending from the lower end of said side, a second, upwardly extending tongue extending from the upper end of said side, and an upwardly open cutout in said side; a first connector member including a plurality of radially extending slots extending therethrough, said slots being equally spaced from each other and equal in number to the number of said legs, each of said slots receiving a corresponding one of said first tongues; a second connector member including a plurality of radially extending slots, the slots in said second connecting member being equal in number to the number of legs, being equally radially spaced from each other and receiving corresponding ones of said second tongues of said legs, said second connector member further including a central opening aligned with the upwardly opening cutouts of said legs and adapted to permit a pole to extend therethrough to seat in said cutouts; and retaining means for holding said tongues in corresponding ones of said slots.

2. A stand according to claim **1** wherein each of said tongues includes an aperture intermediate its length and said retaining means includes an element threaded through said apertures to sandwich the corresponding one of said connector elements against said legs.

3. A stand according to claim **2** wherein said threaded element comprises a resilient wire loop.

4. A stand according to claim **1** wherein each of said legs includes a generally horizontally extending side defined by a radially outwardly horizontal segment and a radially inwardly relieved portion whereby weight of the stand and a pole or the like applied to a support surface will be applied substantially only at the outermost extent of said stand to increase the stability thereof.

5. The stand of claim **1** wherein there are two said retaining means, one for said first connector member and one for said second connector member, the retaining means for said second connector member serving to maintain said second tongues in a predetermined position within the slots of said second connector member so as allow free entry of a pole into a pole receiving recess defined by said cutouts.

6. A stand according to claim **1** wherein each of said legs includes a horizontal surface adjacent said second tongue thereon for seating said second connector member.

7. A stand according to claim **1** wherein each of said legs includes a downwardly opening notch adjacent said first tongue for receiving said first connector member.

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