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[54] **TREE SEAT**

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[52] **U.S. Cl.** **248/218,** 108/152, 248/240.3

[51] **Int. Cl.**.....**E04g 3/10**

[58] **Field of Search**.....248/240, 240.3, 240.4, 248/216, 218, 221; 182/188; 108/152; 297/352

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Primary Examiner—J. Franklin Foss
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[57] **ABSTRACT**

A self-supporting, easily portable tree seat is disclosed as including a seat member, a seat frame underlying the seat member and means for attaching the frame to the seat member such that the frame is rotatable relative thereto. Also attached to the seat member is a seat brace rotatably attached to the seat frame such that the brace is capable of assuming a position bearing against an object, such as a tree, to which the seat is attachable. A support rod underlies the seat member and includes an upstanding arm generally parallel to the brace and a threaded arm projecting through the base for threadable insertion to the tree. The support rod acts as a cantilever support for the seat, thus avoiding the necessity for chains and the like common in the prior art for supporting tree seats.

12 Claims, 8 Drawing Figures

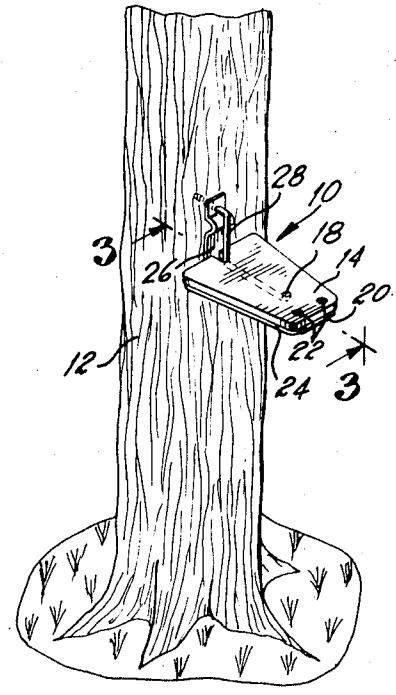


FIG. 1

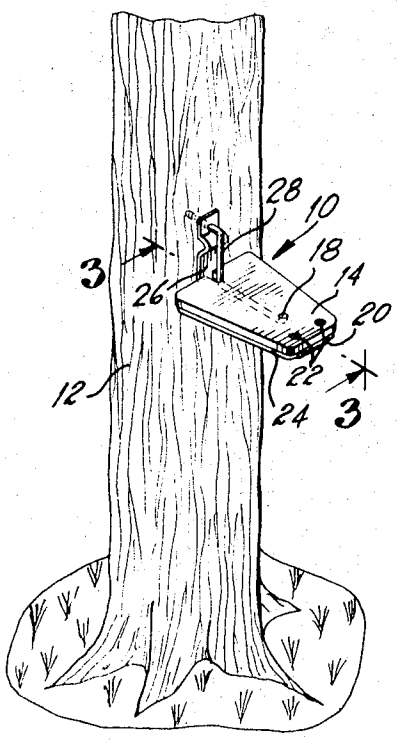


FIG. 2

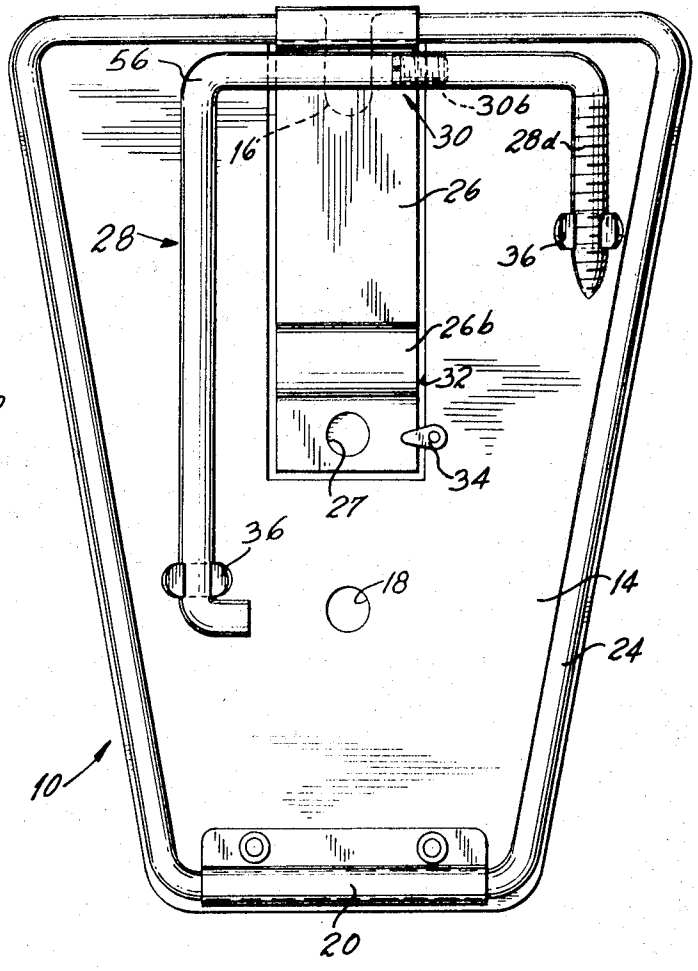
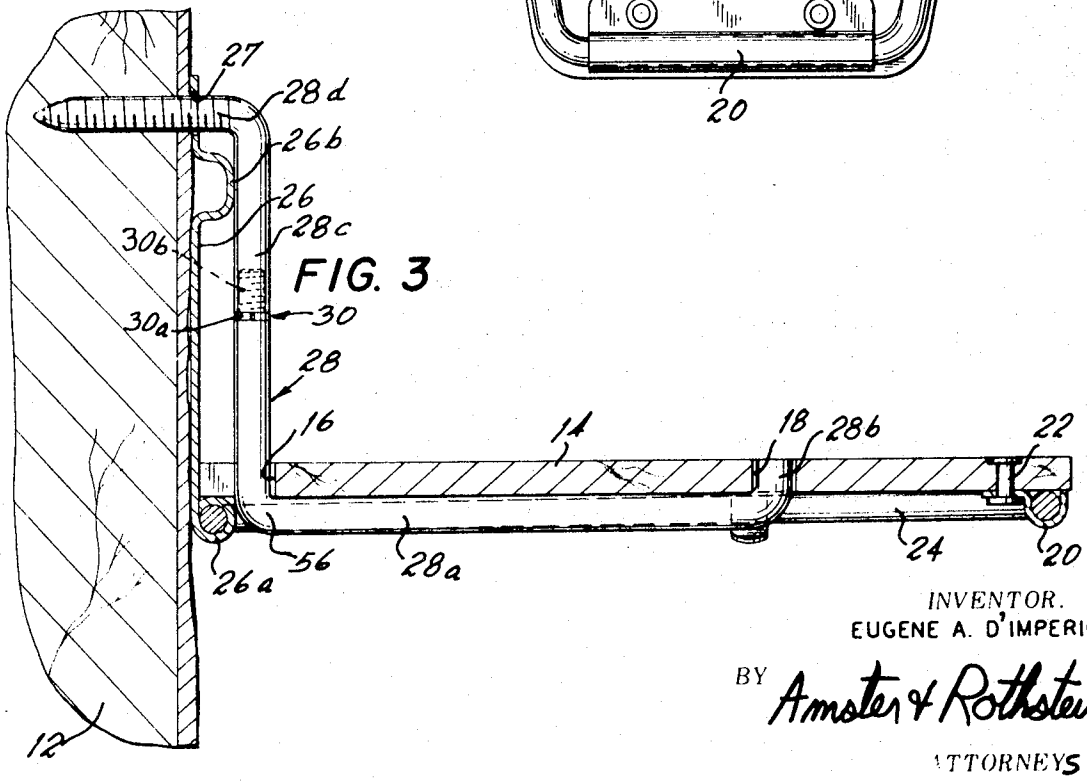


FIG. 3



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FIG. 4

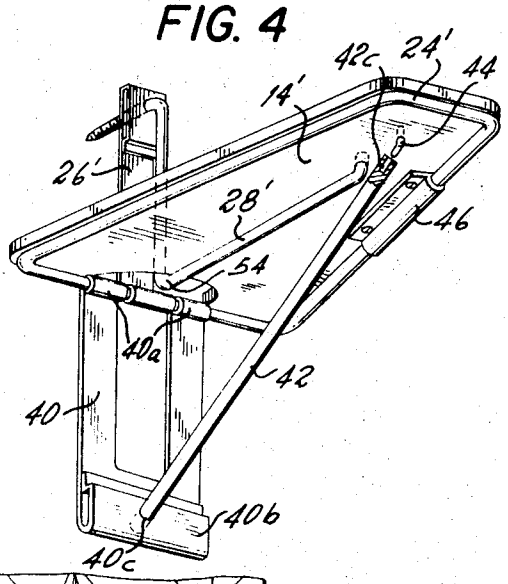


FIG. 5

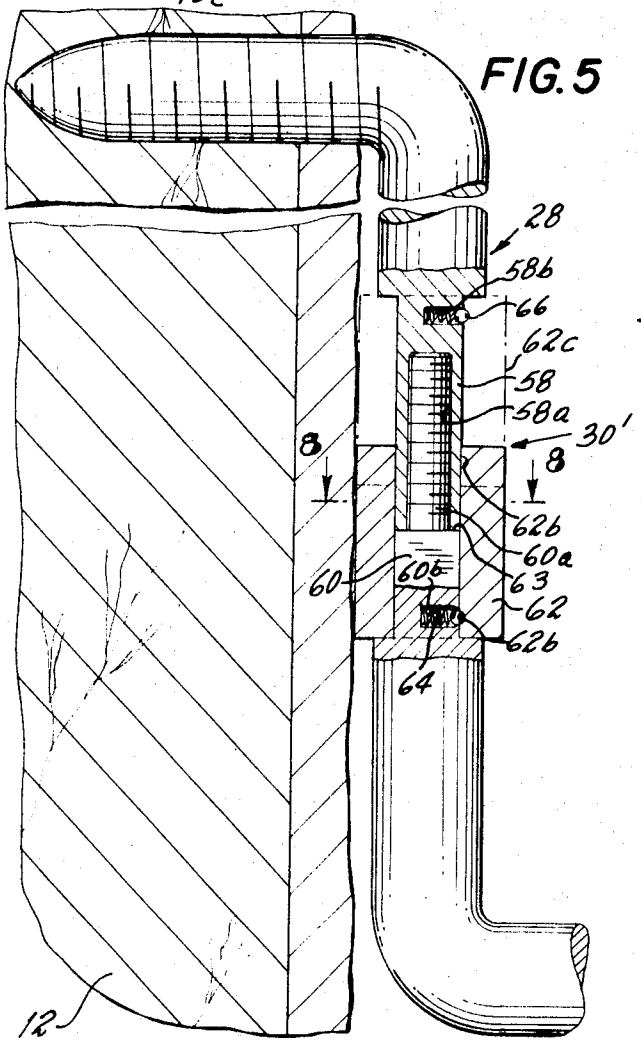


FIG. 6

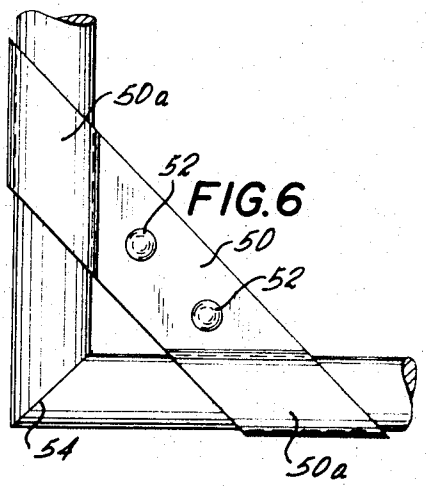


FIG. 7

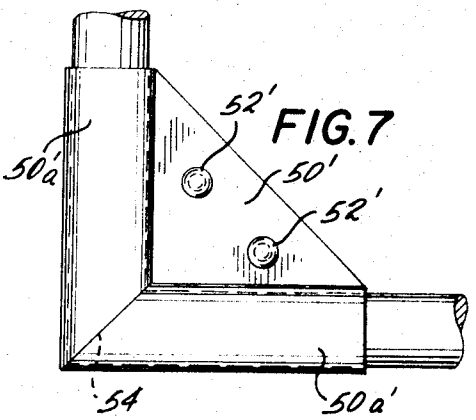
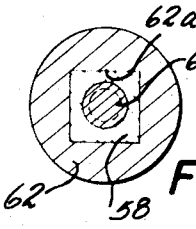


FIG. 8



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TREE SEAT

This invention relates primarily to tree seats and more particularly to such seats commonly used by hunters.

With the current emphasis upon leisure activities in today's economy, it becomes increasingly important to provide convenient appliances and implements with which leisure activities may be performed. One important leisure activity today is hunting which commonly requires a hunter to perch on a tree while awaiting his game. Furthermore, since frequently a hunter must wait long periods of time for his game, it is important that the hunter be comfortable. To sit on a tree limb can be extremely uncomfortable and occasionally a hunter only finds trees with limbs that are too high or unsuitable for his perch.

Presently available tree seats require cumbersome chains and/or metal straps for securing the tree seat to the tree. Also, available tree seats are inconvenient relative to changing height or relative to portability of the tree seat. Such available tree seats suffer from the further disadvantage of complexity in setting up the tree seat at the hunting site and from excessive cost of manufacture relative to the function performed.

Accordingly, a primary object of the present invention is to provide a portable, convenient and economical tree seat for use by hunters while awaiting game or while resting.

A further and more particular object is to provide a portable tree seat which is lightweight and of a construction lending itself easily to quick set-up and convenient detachability from a tree or other supporting object.

These and other objects are provided in a self-supporting tree seat construction for attachment to a supporting object. The tree seat includes a seat member defining a first seat opening and a seat frame for underlying the seat member and being rotatably attached thereto. A seat brace, defining a brace opening, is rotatably attached to the seat frame such that the brace assumes a position perpendicular to and upstanding from the seat member. A cantilever support rod is shaped to include a seat arm underlying the seat member, an upright arm projecting through the seat opening and perpendicular to and upstanding from the seat arm and a threaded arm for projecting through the brace opening into the tree. The construction of the tree seat is such that the seat frame and the brace each assume a plurality of positions lending to convenience in on-site assembly of the tree seat and further provide a convenient, single plane storage position for all components of the tree seat.

The above brief description as well as further objects, features and advantages of the present invention will be more fully appreciated with reference to the following detailed description of a preferred, but nonetheless illustrative embodiment when taken in conjunction with the following drawings, wherein:

FIG. 1 is a perspective view of a tree seat according to the present invention in mounted position on a tree;

FIG. 2 is a bottom view of the tree seat of FIG. 1 but with its components in storage or carrying positions;

FIG. 3 is a side, sectional view of the tree seat of FIG. 1 taken along the line 3—3 thereof;

FIG. 4 is a bottom perspective view of an alternative embodiment of the present invention, showing particularly the use of a diagonal support arm and a downstanding brace for providing additional support to a tree seat, and further showing the use of a side hinge for the seat frame and seat member;

FIG. 5 is a partial, sectional view of a support rod in mounted position including a coupling means at the midpoint of the upright arm thereof according to an alternative embodiment of the present invention.

FIG. 6 is a side view of one form of a corner brace useful with a tree seat according to the present invention to provide in an alternative embodiment further support therefor;

FIG. 7 is an alternative embodiment of the corner brace of FIG. 6; and

FIG. 8 is a plan, sectional view of the coupling means of FIG. 5.

Referring to the drawings and in particular to FIGS. 1 and 3 thereof, a tree seat, generally designated **10** according to the present invention is shown in mounted position on a tree **12**. The tree seat **10** is shown as including a seat member **14**, defining therethrough a first seat opening **16** and a second seat opening **18**. A hinge **20** is attached by rivets **22** or the like to seat member **14** for rotatably supporting a seat frame **24**, which generally underlies the periphery of seat member **14**. A seat brace **26** extends in an upstanding relationship from seat frame **24** and is rotatably attached thereto by means of a seat brace wrap-around portion **26a** which encircles the seat frame. Seat brace **26** defines a U-shaped projection **26*b*** whose function will be described further in this specification. Seat brace **26** further defines seat brace opening **27**.

The tree seat further includes a support rod, generally designated **28**, which is constructed with a seat arm **28a** for underlying and supporting seat member **14**, a seat projection arm **28b** for projecting through second seat opening **18**, upright arm **28c** projecting through first seat opening **16** and a threaded arm **28d** for threadable attachment to tree **12** through seat brace opening **27**. Coupling means,generally designated **30**, connects two main portions of support rod **28** approximately at the midpoint of upright arm **28*c*** for storage and carrying convenience as will be described hereinafter and for convenience of assembly as will also be described hereinafter. Coupling means **30** includes a lock washer **30a** encircling a threaded male stud **30b** projecting from one portion of support rod **28**. Coupling means **30** further includes a threaded female bore defined by the other part of support rod **28** for receiving stud **30*b***. Thus, the coupling means may be loosened so that support rod **28** may be turned to the support rod position shown in FIG. **2** for storage and carrying and may be tightened when the tree seat is ready for threadable insertion to tree **12**.

Support rod **28** is braced in a vertical position by means of U-shaped projection **26*b***, as shown particularly in FIG. **3**. Thus, support rod **28** provides a cantilever support for tree seat member **14** without the necessity for tree-encircling chains or the like.

Referring now to FIG. **2**, tree seat **10** is shown with its components in storage or carrying positions. Accordingly, seat brace **26** has been rotated to a position horizontal with and underlying seat member **14** such

that it fits within slot **32** defined by the underside of seat member **14**. Seat brace **26** is secured in this storage or carrying position by means of catch **34**, rotatably affixed to the underside of seat member **14**. Furthermore, support rod **28** is rotated at coupling means **30** and secured to the underside of seat member **14** by means of brackets **36** suitably attached to seat member **14**. A single plane storage and carrying position is thus provided to ensure convenience for the user of the tree seat.

In the preferred embodiment, shown in FIGS. **1–3** it should be understood that a variety of materials are usable for the various components. For instance, seat brace **26** may be formed from sheet steel or aluminum and seat member **14** may be formed from suitable exterior grade plywood. Furthermore, ¼ inch steel rod may be used for the seat frame and ⅜ inch or ½ inch steel rod is usable for the support rod.

An alternative embodiment of the present invention is shown in FIG. **4** as including seat member **14'**, seat frame **24'**, support rod **28'** and seat brace **26'**, assembled as described for corresponding components in FIG. **1**. The tree seat of FIG. **4**, on the other hand, further includes downstanding brace **40** rotatably attached to seat frame **24'** by means of wrap-around portions **40***a*. The lower part of downstanding brace **40** includes reinforcing member **40***b* defining therethrough support arm opening **40***c*. A diagonally oriented support arm **42** projects through opening **40**c at one of its ends and attaches to the underside of seat member **14'** by any suitable meanswell known in the art. For instance, the upper end of support arm **42**, as shown in FIG. **4**, defines bore **42***c* for insertion of a suitably angled stud **44** depending from the underside of seat member **14'**.

The embodiment of FIG. **4** further includes side hinge **46** for rotatable attachment of seat frame **24'** and seat member **14'**. Hinge **46** is located along one side of the tree seat rather than at an end of the tree seat as with hinge **20** in the embodiment of FIGS. **1–3**.

Further support-enhancing constructions may be used in either the embodiments of FIG. **4** or FIG. **1**, with examples of such support-enhancing structures being shown in FIGS. **6** and **7**. FIG. **6** illustrates a lightweight form of support which includes a pair of support braces **50** (only one being shown, but the other being a reverse duplicate thereof), such support braces being connected by rivets **52**, or the like. Wrap-around portions **50***a* at either end of support brace **50** are used to mount support brace **50** onto knee **54** of support rod **28'** in the embodiment of FIG. **4** or knee **56** of support rod **28** of FIGS. **2** and **3**.

A further example of support-enhancing components is shown in FIG. **7** as including a full support brace **50'** completely covering the corner defined by knee **54** of support rod **28'** (or knee **56** of support rod **28**). Furthermore, the wrap-around portions **50***a'* thereof extend to fully cover the knee **54**.

In FIG. **5**, an alternative embodiment of coupling means **30'** is shown for connecting the portions of support rod **28**. Coupling means **30'** includes lower stud **60** having threaded stud projection **60***a*. Coupling means **30'** further includes female stud **58** defining threaded stud opening **58***a* for receiving stud projection **60***a*. Female stud **58** and stud **60** each define shoulders at point **63** in FIG. **5** for abutment at final assembly. Female stud **58** defines bearing opening **58***b* in which a spring-and-ball bearing member is inserted by appropriate fixed attachment. Similarly, stud **60** defines bearing opening **60***b* into which is fixedly attached spring-and-ball bearing member **64**. Studs **58** and **60** both define square outer surfaces as shown particularly in FIG. **8**. Sliding slip lock **62** defining square center opening **62***a* is provided to encircle such outer surfaces. The length of sliding slip lock **62** is such as to be less than the total extent of the combination of studs **58, 60** when they are assembled. Also, sliding slip lock **62** defines curved bearing slots **62***b* near its upper and lower limits for mating with bearing members **64, 66** as follows: The purpose of sliding slip lock **62** is to hold the cantilever support rod portions in tight engagement, even when threaded arm **28***d* is being screwed into a tree. Coupling means **30'** is assembled by inserting sliding slip lock **62** to its uppermost position as shown by ghost lines **62***c* in FIG. **5**. Thus, the two portions of support rod **28** may then be coupled with maximum tightness with squared outer surfaces of studs **58, 60** in alignment. In this uppermost position, the upper bearing slot **62***b* of sliding slip lock **62** is in holding engagement with bearing member **66**. After the two portions of rod **28** are securely joined, support rod **28** is now locked by moving sliding slip lock **62** downwardly and support rod **28** is ready to be cranked into the tree trunk.

In order to provide a more complete understanding of the present invention, a typical series of assembly operations will now be described with reference to the preferred embodiment of FIGS. **1–3**: Beginning with the storage or carrying position of FIG. **2**, support rod **28** is removed from brackets **36** and the seat frame rotated away from seat member **14**. Coupling means **30** is tightened to maximum tightness so that support rod **28** assumes a "Z" shape (FIG. **3**). Support rod **28** is inserted to seat brace opening **27** and then screwed into tree **12**. Frame **24** is moved to underlie seat member **14** so that seat brace **26** is rotated to a position upstanding from and generally perpendicular to seat member **14**. The support rod is placed through openings **16, 18** of the seat and the assembly is thus completed.

A tree seat is thereby provided for use with a tree of any girth. The tree seat is economical and yet strong and provides a lightweight applicance for the use and enjoyment of hunters and others.

What is claimed is:

1. A self-supporting tree seat for attachment to a support object comprising a seat member defining a first seat opening, a seat frame for underlying said seat member, means attaching said seat frame to said seat member, a seat brace defining a seat brace opening and rotatably attached to said seat frame such that said seat brace assumes at least one position perpendicular to and upstanding from said seat member and a support rod having a seat arm for underlying said seat member, an upright arm generally perpendicular to and upstanding from said seat arm and a threaded arm for securing said seat member to said support object, said upright arm projecting upwardly through said first seat opening and said threaded arm projecting generally horizontally through said seat brace opening.

2. The invention according to claim 1 wherein said tree seat further comprises a downstanding brace defining a support hole and rotatably attached to said frame such that said downstanding brace assumes at least one position perpendicular to and downstanding from said seat member and a support arm removably connected to said seat member and projectable through said support hole.

3. The invention according to claim 1 wherein said support rod comprises a coupling means at approximately the midpoint of said upright arm enabling rotation of a part of said rod.

4. The invention according to claim 3 wherein said coupling means comprises a threaded stud, a female stud opening matable with said stud and a lock washer encircling said stud.

5. The invention according to claim 3 wherein said coupling means comprises a threaded male stud, an opening-defining stud defining a female stud opening matable with said male stud, said studs including first and second projecting, adjustable bearings, respectively, a sliding slip lock for assuming first and second positions and defining a square center opening for encircling said opening-defining stud and said slip lock defining first and second bearing holes for consecutively receiving said first and second adjustable bearings in said first and second positions, respectively.

6. The invention according to claim 5 wherein said adjustable bearings each include a ball bearing attached to a spring.

7. The invention according to claim 1 wherein said seat member further defines a second seat opening and said rod includes a seat projection arm for projection through said second seat opening.

8. The invention according to claim 1 wherein said seat member includes mounting means for mounting said rod during non-use of said seat.

9. The invention according to claim 1 wherein said seat brace defines a U-shaped projection for insuring a vertical orientation for said upright arm.

10. A self-supporting tree seat for attachment to a support object comprising: a seat member, a support rod removably secured to said seat member for supporting said seat member, means for maintaining said support rod in a storage position when said support rod is not supporting said seat member, a seat brace attached to said support rod such that said seat brace assumes at least one position perpendicular to and upstanding from said seat member, said support rod having a seat arm for underlying said seat member, an upright arm generally perpendicular to and upstanding from said seat arm and a threaded arm for securing said tree seat to said support object, said upright arm projecting upwardly and being generally perpendicular to said seat member and said threaded arm projecting generally horizontally from said upright arm to said support object.

11. The invention according to claim 10 wherein said seat member defines at least one seat opening and said support rod includes a seat projection arm adapted to be removably inserted into said at least one seat opening.

12. The invention according to claim 11 wherein said seat member defines a seat notch and said upright arm is adapted to be removably inserted into said seat notch.

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