Jan. 31, 1967 T. A. NYBERG 3,301,512

TREE HOLDER

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FIG. 1.

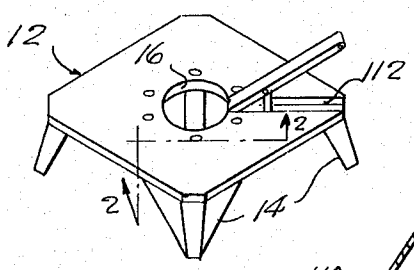
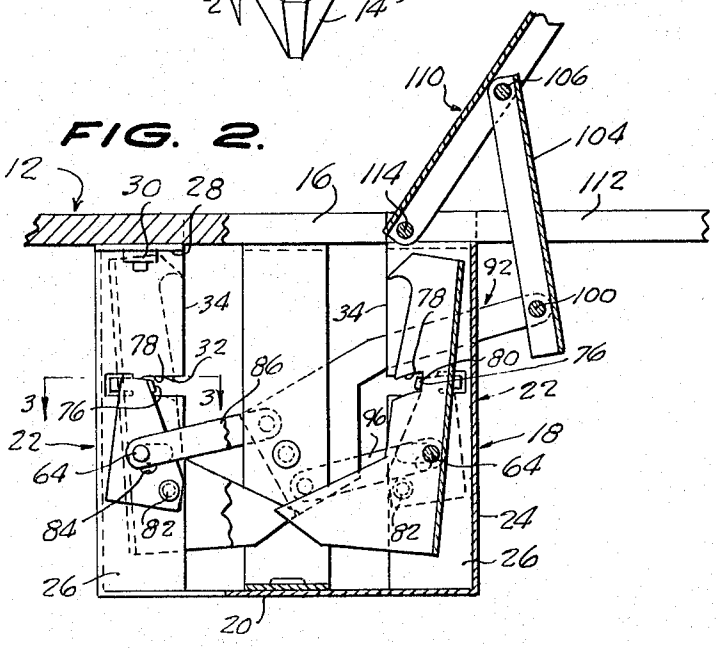


FIG. 2.



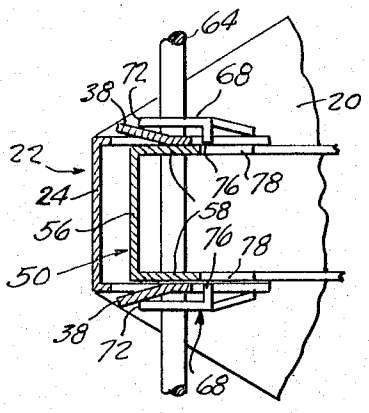


FIG. 3.

FIG. 8.

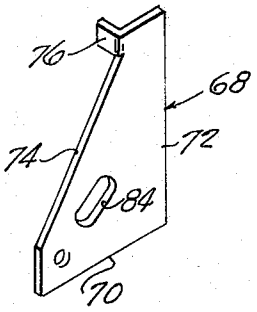
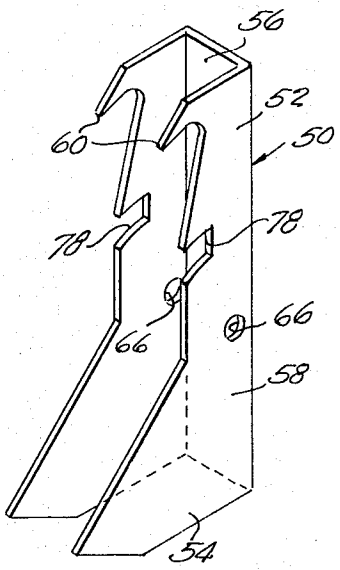


FIG. 9.



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FIG. 4.

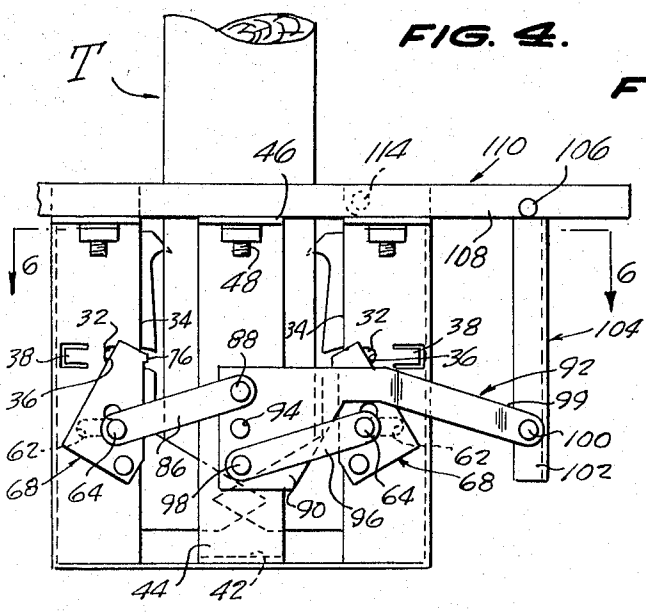
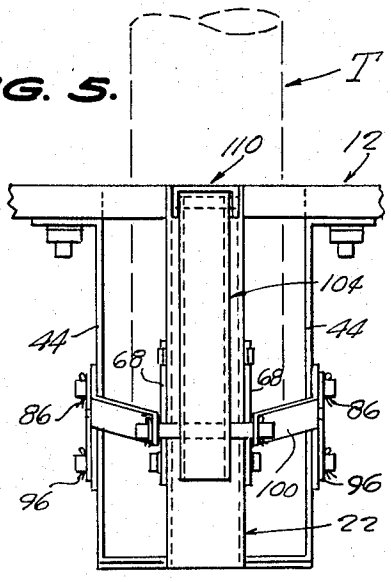


FIG. 5.



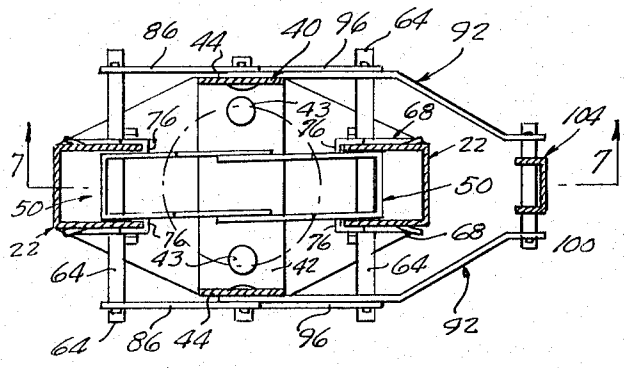


FIG. 6.

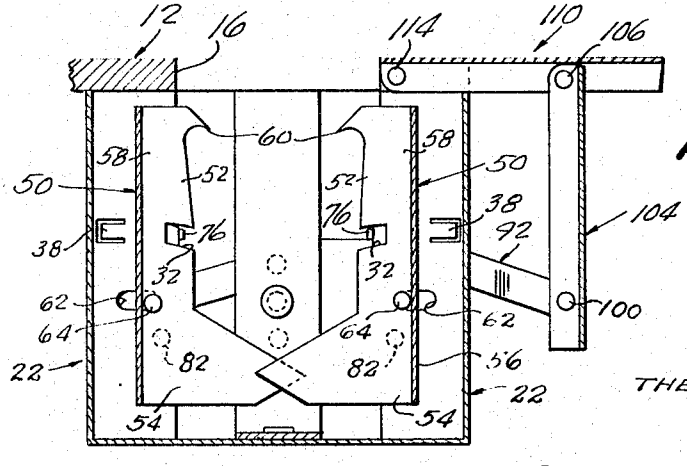


FIG. 7.

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3,301,512

TREE HOLDER

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Filed Apr. 16, 1965, Ser. No. 448,772
9 Claims. (Cl. 248—44)

This invention relates to a holder for Christmas trees, and like bodies.

The primary object of the invention is the provision of a reliable and easily operated device of the kind indicated, wherein the insertion therein of a tree, or the like, produces partial closing of clamping and centering components, and foot actuation of a lever, to an over-center, self-locking position, produces full gripping relation of said components with the tree; and wherein retraction of the lever effects withdrawal and release of said components from the tree.

In the drawings:

FIGURE 1 is a perspective view of a device of the invention, showing its lever in retracted position;

FIGURE 2 is an enlarged fragmentary vertical section taken on the line 2—2 of FIGURE 1;

FIGURE 3 is a fragmentary horizontal section taken on the line 3—3 of FIGURE 2;

FIGURE 4 is a fragmentary side elevation of said device, showing the clamping components in clamping relation to a tree, the locking lever being in locking position;

FIGURE 5 is a left-hand end elevation of FIGURE 4;

FIGURE 6 is a horizontal section taken on the line 6—6 of FIGURE 4;

FIGURE 7 is a vertical section taken on the line 7—7 of FIGURE 6;

FIGURE 8 is a perspective view of a retracting dog; and

FIGURE 9 is a perspective view of a clamping lever.

Referring in detail to the drawings, the illustrated device comprises a flat preferably rectangular horizontal table **12** having feet **14**, extending downwardly from its corners to engage a supporting surface, such as a floor. The table **12** is formed with a central circular opening **16** larger in diameter than the tree T or other similar body intended to be held.

Secured centrally to the underside of the table **12** is a frame **18** comprising a flat horizontal base plate which is disposed on a diagonal line extending between two opposed corners of the table **12**. From the ends of the base plate **20** rise similar and opposed, perpendicular channel uprights **22**, the openings of which face each other.

The uprights **22** have webs **24** and panelled sidewalls **26**, the latter having, on their upper ends, lateral ears **28** which are secured, as by means of bolts **30** to the table **12**. The sidewalls **26** are formed, intermediate their ends, with horizontal slots **32** which open to their inner edges **34**. Between the outer ends **36** of the slots **32** and the webs **24** the sidewalls **26** are punched out to provide laterally and outwardly-angled cams **38**.

The frame **18** further comprises a U-shaped member **40**, having a cross-member **42** secured, as by means of rivets **43**, crosswise on the upper surface of the base plate **20** midway between the channel uprights **22**, and extending to opposite sides thereof. The member **40** further comprises perpendicular legs **44** on the ends of the cross-member **40**, which have lateral flanges **46** on their upper ends, which are secured, as by means of bolts **48**, to the underside of the table **12**.

Channel-shaped, vertically-elongated clamping levers **50** are disposed within the channel uprights **22**, and comprise straight vertical upper gripping portions **52**, and inwardly and downwardly-angled lower cam portions **54**.

The levers **50** have webs **56**, and sidewalls **58**, which are common to the upper and lower portions of the levers **50**. At the upper ends of the sidewalls **58**, and extending inwardly from the upper ends thereof, are triangular, downwardly and inwardly-angled tree-indenting teeth **60**.

At locations intermediate the lower ends of the sidewalls **26** of the channel uprights **22**, and the slots **32**, the sidewalls **26** are formed with closed horizontal slots **62**, through which transverse horizontal rods **64** extend.

The sidewalls **58** of the clamping levers **50** are formed in line with the closed slots **62**, with openings **66** through which the rods **64** extend, whereby the levers **50** are pivotally supported for movements toward and away from each other.

Lever-retracting dog **68**, shown in detail in FIGURE 8, are disposed at opposite sides of the channel uprights **22**. The dogs **68** comprise flat upright right-triangular plates having base edges **70**, altitude edges **72**, and hypotenuse edges **74**. Laterally, inwardly-extending lugs **76**, at the upper ends of the hypotenuse edges **74**, extend into the open slots **32** in the sidewalls **26** of the uprights **22**, and also into horizontal open slots **78** formed in the sidewalls **58** of the levers **50**. The lugs **76**, at times, engage the ends **80** of the slots **78**.

The dogs **68** are pivoted, as indicated at **82**, at the corners thereof, between their base edges **70** and their hypotenuse edges **74**, to the end walls **26** of the uprights **22** at locations near the inner edges **34** of the sidewalls **26**. The dogs **68** are formed with inwardly and downwardly-angled closed slots **84** through which the rods **64** extend. The cam lugs **38** on the upright sidewalls **26** are adapted to be engaged by the altitude edges **72** of the dogs **68**, as the dogs are moved outwardly, whereby the dogs are flexed laterally outwardly, so that the lugs thereof are removed from engagement with the closed ends of the slots **78** of the levers **50**, as shown in FIGURE 3.

One of the rods **64** is pivoted, at its outer end, to the outer ends of first horizontal links **86**, which, at their inner ends, are pivoted, as indicated at **88**, to the upper parts of vertically-elongated plate portions **90** on the inner ends of generally horizontal operating levers **92**.

The plate portions **90** are pivoted, intermediate their upper and lower ends, as indicated at **94**, on the outer sides of the frame legs **44**. Second generally horizontal links **96** are pivoted, at their inner ends, as indicated at **98**, to the plate portions **90**, at locations in line with and below the pivotal points **88** and **94**. The outer ends of the second levers **96** are pivoted on the other one of the rods **64**.

The operating levers **92** have outer end portions **99** which are outwardly and downwardly-angled, relative to the plate portions **90**, and the outer end portions **98** are pivoted on related ends of a single transverse rod **100**. The single rod **100** extends through the sidewalls **102** of a perpendicular link **104** at the lower end thereof. The channel link **104** is pivoted at **106** at its upper end, between the pendant sidewalls **108** of a downwardly-opening, generally horizontal locking lever **110**. The locking lever **110** operates in a radial slot **112** formed in the table **12** and opening through a related corner thereof. At its inner end, the locking lever **110** is pivoted on a transverse rod **114**, which is anchored at its ends to the sides of the slot **112** at a location near the inner edges **34** of the sidewalls **26** of the related channel upright **22**.

What is claimed is:

1. A tree holder comprising a support, opposed clamping levers having tree gripping portions at their upper ends, the levers being devoid of tree gripping portions at their lower ends, articulated on the support to move their gripping portions toward each other into tree-clamping relationship from upwardly and outwardly-retracted positions, operating lever means pivoted on the support

to move from an elevated position to a depressed position for moving the clamping levers to clamping positions, linkage means operatively connecting the operating lever means to the clamping levers, and a locking lever pivoted on the support and operatively connected to the operating lever means.

2. A tree holder according to claim 1, wherein said support comprises a table spaced above said levers and formed with a tree-passing opening centered between the clamping levers.

3. A tree holder according to claim 1, wherein said linkage means comprises dogs articulated to the support, said dogs having lateral lugs engaged with the facing edges of the clamping levers.

4. A tree holder according to claim 1, wherein said linkage means comprises dogs articulated to the support, said dogs having lateral lugs engaged with the facing edges of the clamping levers, first links pivoted at one end to one of the dogs and at their other ends to the operating lever means, at points above the pivotal axes of the operating lever means, second links pivoted at one end to the operating lever means at points below the pivotal axes of the operating lever means, and second links pivoted at their other ends to the other of the dogs.

5. A tree holder according to claim 1, wherein said linkage means comprises dogs articulated to the support, said dogs having lateral lugs engaged with the facing edges of the clamping levers, first links pivoted at one end to one of the dogs and at their other ends to the operating lever means, at points above the pivotal axes of the operating lever means, second links pivoted at one end to the operating lever means at points below the pivotal axes of the operating lever means, and second links pivoted at their other ends to the other of the dogs, said locking lever being pivoted at one end on the support above a clamping lever, and a pendant link pivoted at its upper end to the locking lever and at its lower end to the operating lever means.

6. A tree holder according to claim 1, wherein said clamping levers are vertically elongated and have upper portions having inwardly-extending tree-indenting teeth constituting said tree gripping portions, and lower cam portions extending inwardly from said upper portions.

7. A tree holder according to claim 1, wherein said clamping levers are vertically elongated and have upper portions having inwardly-extending tree-indenting teeth constituting said tree gripping portions, and lower cam portions extending inwardly from said upper portions, said support comprising facing vertical channel uprights in which the clamping levers are engaged.

8. A tree holder according to claim 1, wherein said linkage means comprises dogs articulated to the support, said dogs having lateral lugs engaged with the facing edges of the clamping levers, said support comprising vertically-elongated facing channel uprights, said uprights having sidewalls on which said dogs are externally positioned, said sidewalls having inner edges formed with horizontal slots through which said lugs work.

9. A tree holder according to claim 1, wherein said linkage means comprises dogs articulated to the support, said dogs having lateral lugs engaged with the facing edges of the clamping levers, said support comprising vertically-elongated facing channel uprights, said uprights having sidewalls on which said dogs are externally positioned, said sidewalls having inner edges formed with horizontal slots through which said lugs work, said clamping levers being channel-shaped and having sidewalls formed with horizontal slots having closed ends and aligned with the slots in the sidewalls of the uprights, the lugs of the dogs being adapted to engage the said closed ends through the upright slots for retracting the clamping levers.

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