Feb. 21, 1933. J. L. KNUDSON 1,898,669

ADJUSTABLE HOLDER

Filed Sept. 12, 1931 2 Sheets-Sheet 1

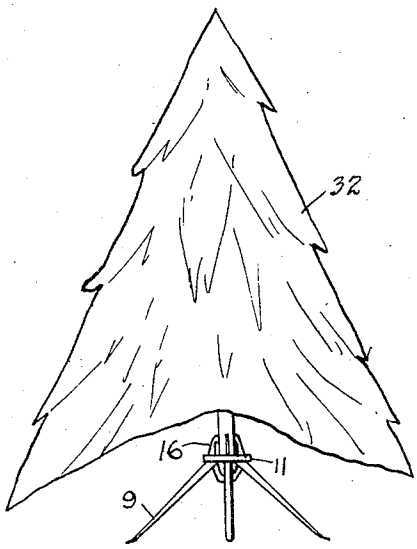


FIG. 1

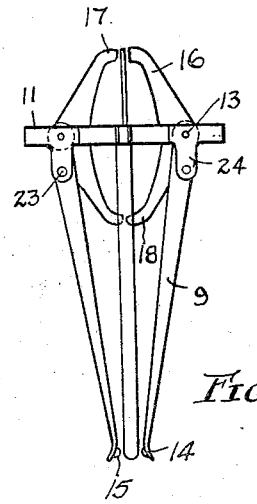


FIG. 2

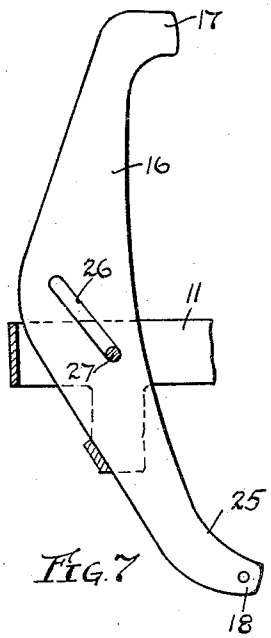


FIG. 7

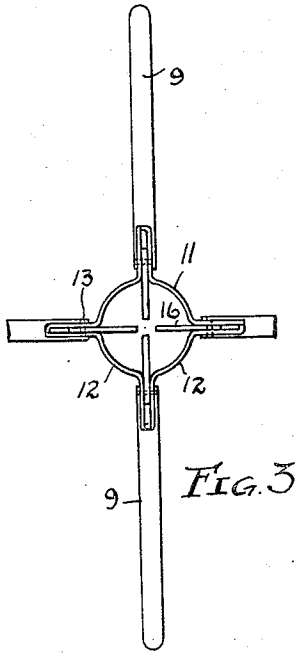


FIG. 3

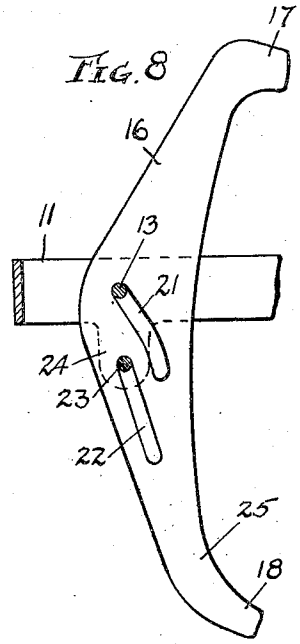


FIG. 8

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ADJUSTABLE HOLDER

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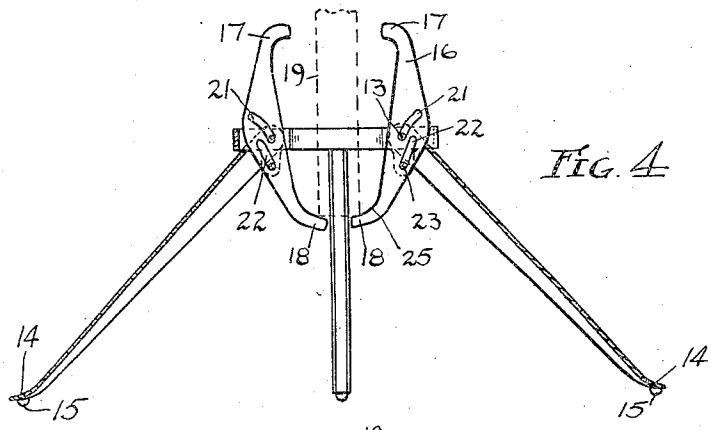


FIG. 4

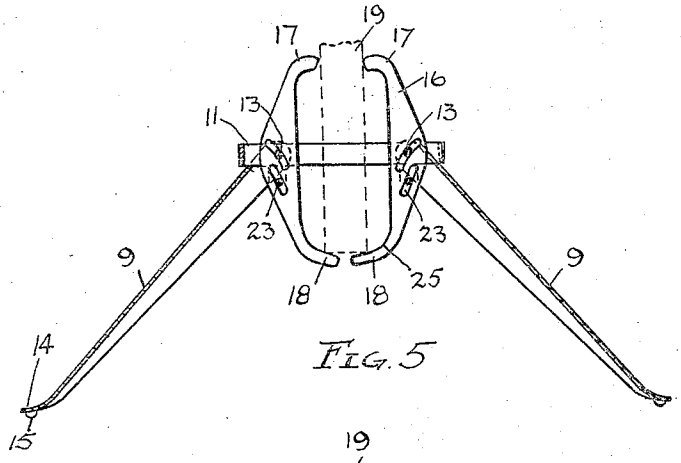


FIG. 5

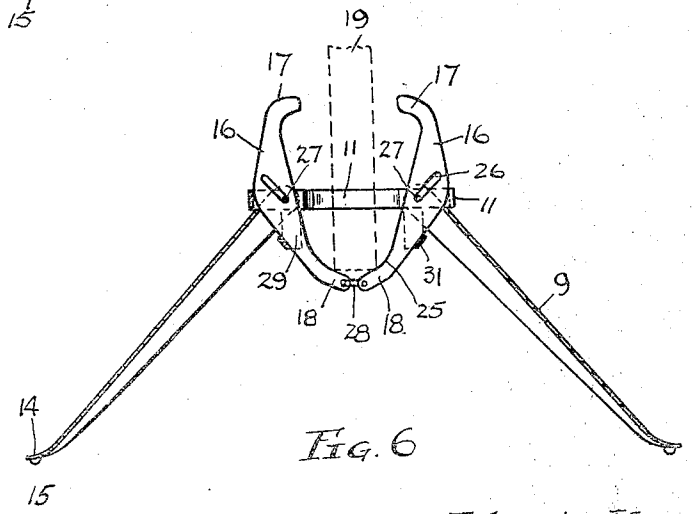


FIG. 6

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Patented Feb. 21, 1933

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UNITED STATES PATENT OFFICE

JOHN L. KNUDSON, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO FRANK A. JOHNSON, OF CLEVELAND, OHIO

ADJUSTABLE HOLDER

Application filed September 12, 1931. Serial No. 562,445.

This invention relates to adjustable holders of the type used to support Christmas trees but which may also be used for mounting other articles of similar characteristics. More particularly, this invention relates to a tree-holder which provides a firm support and which securely grips the tree.

Holders intended to support Christmas trees or the like have been supplied in numerous forms, none of which have proved to be entirely satisfactory. One of the drawbacks characterizing holders now on the market is the inadequate support provided for the somewhat top-heavy tree, leaving the latter in a somewhat unstable and rickety position.

Another unsatisfactory feature of tree-holders as now provided is found in the gripping means which either does not securely hold the base of the tree or requires slow and difficult manipulation and tightening of parts in order to fasten the tree in place. With the end in view of overcoming these and other objections to present tree-holders, I have invented a structure, which provides an adequate and stable support and which firmly grips the tree instantly and with a minimum of manipulation.

It is accordingly, an object of the invention to provide a holder with an adequate base which maintains a tree or similar article steadily and safely in position.

Another object of the invention is to provide a holder which grips a tree of similar article placed therein firmly and rigidly with a minimum manipulation of parts.

A further object of the invention is to provide a holder of the foregoing characteristics which is adjustable for various sizes of articles.

Still another object of the invention is to provide a holder whose gripping action is automatic in nature.

To the accomplishment of the foregoing and related ends, said invention, then consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:

Fig. 1 illustrates the holder with a tree mounted therein; Fig. 2 is a side elevation showing the holder folded up for storage or shipment; Fig. 3 is a top plan view, partly fragmentary, of the holder in extended position; Fig. 4 is a side elevation of one modification of the holder in the open position; Fig. 5 is a view corresponding to Fig. 4 of the holder in the gripping position; Fig. 6 is a side elevation of another modification of the holder in the open position; Fig. 7 is an enlarged detail of one of the jaws found in the modification corresponding to the modification shown in Fig. 6; and Fig. 8 is an enlarged detail corresponding to a modification illustrated in Figs. 4 and 5.

Referring to Figs. 1 and 2 of the drawings, the holder consists of supports or legs 9 which are illustrated as being four in number and this is the number which it is preferred to employ, although it will be obvious that the number of supports may be varied without departing from the scope of the invention. These supports are attached to a ring 11 made up of arcuate pieces 12 joined by pins 13, which also carry the legs 9. These legs may be swung in and out on the pins 13 accordingly as it is desired to expand the holder for use or fold it up for storage. The legs or supports 9 are expanded slightly at their lower extremities 14 to provide an attaching surface for rubber feet 15, although, of course, it will be realized that these feet may be dispensed with, if desired, and may be composed of other material besides rubber. It may be mentioned here that the legs are preferably formed of folded metal in order to provide a strong but light structure.

Also attached to the ring-shaped member 12 by means of pins 13, with or without other attaching means, are jaws 16 shown as four in number but which may be increased or decreased in number within the scope of

the present invention. As may be seen in Figs. 4, 5 and 6 of the drawings, these jaws have inwardly turned upper extremities 17 and lower extremities 18, the upper extremities being adapted to grip an object 19, such as a tree, placed in the holder, and the lower extremities being adapted to support such object vertically.

In the modification shown in Figs. 4 and 5, it will be seen that a pair of slots 21 and 22 is provided in each jaw, one of these slots engaging with the pin 13 and the other of said slots engaging with another pin 23, which is mounted in an extension 24 of the ring member 12. In the modification shown, there will be four pairs of such slots and four pairs of pins to co-operate therewith.

In operation, the jaws 16 are drawn upwardly by hand causing the slots 21 and 22 also to travel upwardly until they are stopped by the pins 13 and 23 and the Christmas tree or similar article 19 is then placed between the jaws until it rests on the lower extremities 18, whereupon continued pressure from the weight of the article itself, assisted or not by pressure of the hands, forces the jaws downwardly until they assume the position shown in Fig. 5. The limit of downward travel will be determined by the diameter of the article inserted, which is firmly gripped by the upper extremity 17 of the jaws. When this point is reached, the slots 21 and 22 will ordinarily not have travelled to their lowermost position as determined by the pins 13 and 23, so that the weight of the tree tends to force the extremities of the jaws 17 into the tree, thus gripping it firmly by virtue of its own weight resting on the lower extremities 18.

It will be noted that the slots 21 and 22 lie in nonparallel relation, thus causing the jaws to reach the gripping point in a shorter distance of travel than would be the case if these slots were parallel. Of course, it is also possible to make the slots parallel within the purview of the invention, although this is not as advantageous from a practical point of view.

The legs 9 are maintained in spaced-apart relation while the holder is in use, the lower edges of the ring member 11 acting as stops by engagement with surfaces of the legs. The inner lower surfaces 25 of the jaws 16 are formed with a curve so that trees or similar objects of varying diameters will bear down on the jaws to cause a gripping action corresponding to the width of bite of the upper extremities 17.

Another modification of my invention is illustrated in Figs. 6 and 7 of the drawings in which the jaws 16 are formed similar to those shown in Figs. 4, 5 and 8, but in which only one slot 26 is provided, this slot engaging with the pins 27. The lower extremities 18 of the jaws are nonrigidly joined by means of a ring 28, which prevents these extremities from dropping away from one another. The jaws are also supported by extensions 29 of the ring member 11, having flanges 31 engaging with the outer edges of the jaws.

In the last mentioned modification, the operation is similar to that of the modification previously discussed but is more simple and equally effective. The jaws are opened by sliding the slots 26, which are preferably straight, but which may also be of other conformation, upwardly to the limit of travel as determined by the pins 27. The jaws are now opened to their widest extent for the reception of the tree or other article 19, which is pressed down against the lower extremities 18 and rests on the surfaces 25 at a point determined by the diameter of the article. Pressure on these surfaces causes the jaws to close and the upper extremities 17 to grip the sides of the tree 19 while the slots 26 travel downwardly to a point determined by contact of the extremities 17 with the sides of the article.

As illustrated in Fig. 1, a Christmas tree 32, or similar object, is firmly supported on the legs 9 of which it is found that four provide the best results, a three-point support being too unsteady for safety but, of course, more than four points of support may also be provided. The jaws 16 grip the base of the tree firmly and there is no possibility of the tree falling out of its support or rocking therein, while the legs 9 provide the proper balance to prevent the tree from tipping over, together with the stand.

What is claimed is:

1. An adjustable holder comprising supports pivoted on connecting means, a plurality of jaws mounted on said connecting means, pins on said connecting means and slots in said jaws adapted to slide on said pins.

2. An adjustable holder comprising supports pivoted on connecting means, a plurality of jaws mounted on said connecting means, pins on said connecting means and a pair of slots in each of said jaws, said slots being adapted to slide on said pins.

3. An adjustable holder comprising pivoted legs adapted to be spread in spaced apart relation, means connecting said legs, a plurality of jaws mounted on said connecting means, pins on said connecting means, a pair of slots in each jaw, said slots lying in nonparallel relation and said jaws being movable in paths determined by the engagement of one of said pins in each of said slots.

4. An adjustable holder comprising spaced supports, means connecting said supports, jaws mounted on said connecting means, and pairs of non-parallel slots in each of said jaws engaging pins on said connecting means.

5. An adjustable holder comprising spaced supports, means connecting said supports, jaws mounted on said connecting means, an angularly disposed slot in each of said jaws engaging a pin on said connecting means, and a ring connecting the lower extremities of said jaws.

6. An adjustable holder comprising a standard, jaws mounted on said standard, a slot in each of said jaws sloping downwardly inwardly with respect to the vertical axis of said holder and pins on said standard engaging said slots.

7. An adjustable holder comprising collapsible legs adapted to be spread apart, arcuate member joining said legs, jaws mounted between adjoining arcuate members, slots in said jaws, and pins joining said arcuate members and passing through said slots.

Signed by me this 5th day of September, 1931.

JOHN L. KNUDSON.