Dec. 30, 1969 K. W. PRESCOTT 3,486,514

CANOPY SUPPORT

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FIG. 1

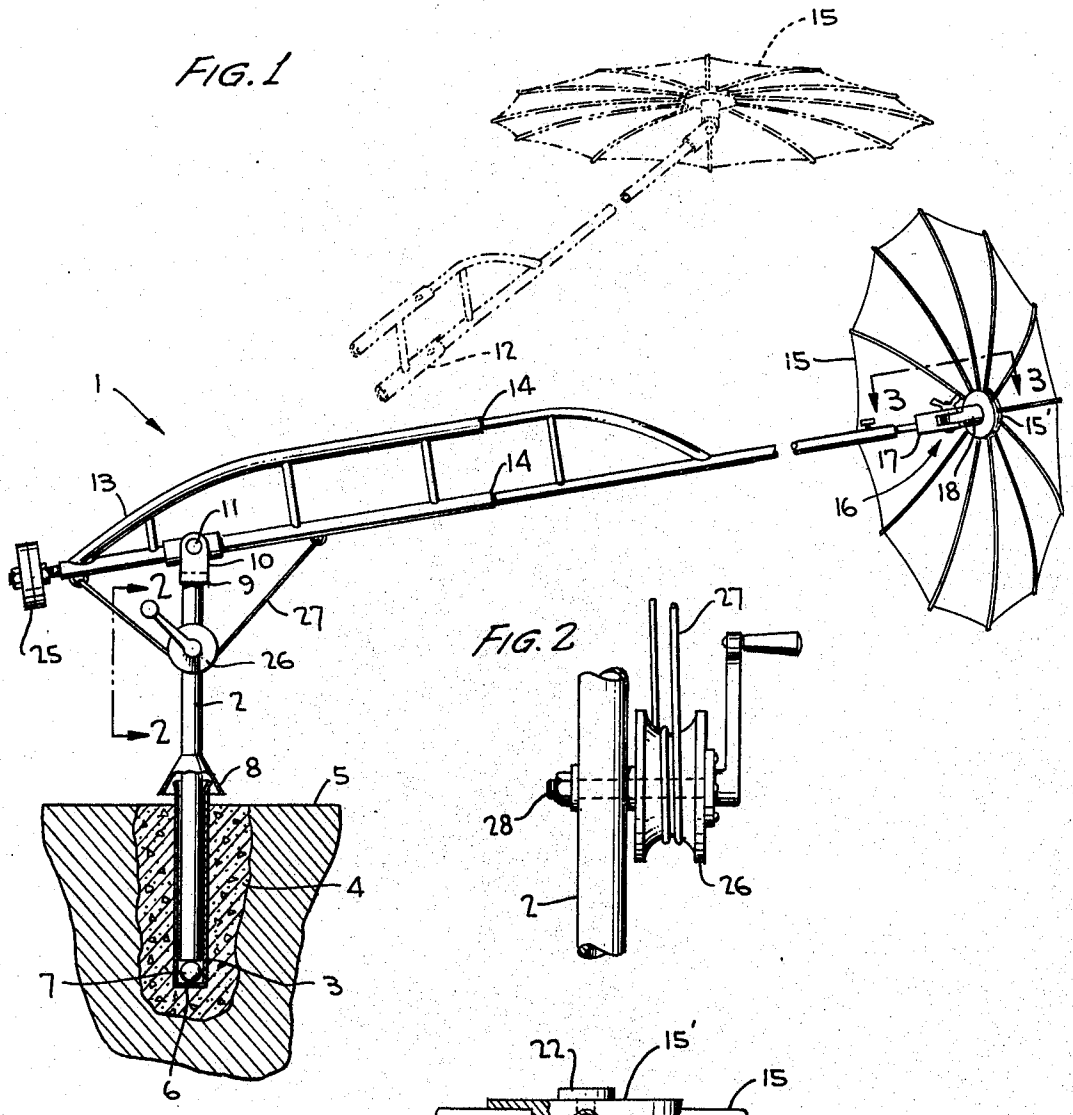
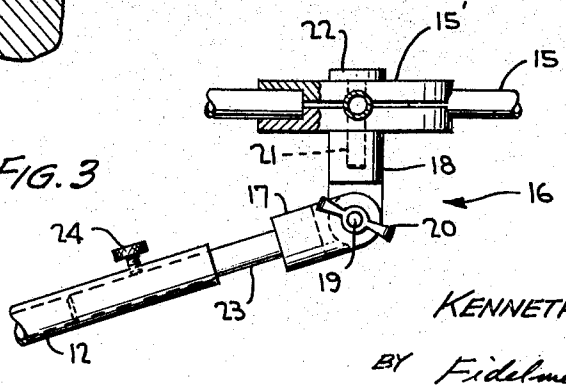


FIG. 2

FIG. 3



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CANOPY SUPPORT

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ABSTRACT OF THE DISCLOSURE

A canopy support comprising a rotatably supported vertically extending post; a balanced arm which is supported adjacent the upper end of said post for pivotal movement about a horizontally extending axis and is provided with means adjacent one end thereof for adjustably mounting a canopy for universal movement with respect thereto; and means adapted to selectively pivot the balanced arm to vary lateral displacement of the canopy with respect to the post.

SUMMARY

The present invention relates to a canopy support and more particularly to an improved support of the type adapted to position a canopy above an area to be shaded which is laterally displaced from the ground engaging portion of the support.

Heretofore various devices have been proposed for supporting canopies or umbrellas in such a manner that the area being shaded from the sun or protected from rain is uncluttered by the canopy support. Conventionally, such canopy supports include either a bent or curved post which extends upwardly and laterally from a ground support or base, or a vertically extending post having a horizontally extending arm affixed to the upper end thereof. The canopy to be supported is suitably clamped to the upwardly extending end of the bent post or to the free non-supported end of the post mounted arm. For the most part, prior canopy supporting devices of the type described are stationary structures which are employed to position a canopy only over a given area to be shaded, such as a table, which is closely adjacent the ground support.

When it is desired to provide shade for another, even though closely spaced, area, it is necessary to remove the canopy support from the ground and transfer the support to a point adjacent the new area to be shaded. Further, many prior devices, even maintained in a given position relative to the area to be shaded, are not able to effectively provide shade due to motion of the sun.

It is an object of the present invention to provide a canopy support which is adapted to be permanently mounted at a suitable location within a yard, tennis court, pool or patio area and be employed to adjustably support a canopy so as to selectively shade any desired area within a given distance from the ground support.

It is a further object of the present invention to provide a canopy support adapted to adjustably position a canopy in such a manner that a desired area may be shaded irrespective of the relative movement of the sun.

An additional object of the present invention is to provide a canopy support which requires a minimum amount of effort on the part of an operator to adjust.

These and other objects of the present invention will more fully appear from the following description taken with the accompanying drawings in which:

FIGURE 1 is a side elevational view of the canopy support according to the present invention;

FIGURE 2 is a sectional view taken along the line 2—2 in FIGURE 1; and

FIGURE 3 is a sectional view taken along the line 3—3 in FIGURE 1.

Referring to FIGURE 1, it will be seen that the canopy support according to the present invention, which is generally designated as **1**, includes a support post **2**, which is removably positioned within a socket **3**. Socket **3** may be permanently anchored within a concrete foundation **4** inserted in ground **5** or other suitable base, such as a patio floor, not shown. Preferably, both post **2** and socket **3** are of circular cross-section to permit the canopy support to be rotated through 360°. Rotational movement of post **2** within socket **3** is facilitated by forming the socket with a lower end wall, as at **6**, and positioning a ball-thrust bearing **7** between the lower end of the post and socket end wall **6**. Preferably, an annular collar or flange **8** is affixed to post **2** to minimize ingress of water into the space between the post and the socket and socket end wall **6** is provided with one or more apertures, not shown, to permit drainage of moisture collected in the socket. Suitable means, such as a set screw, not shown, may be provided to adjustably lock post **2** in a desired vertical position within socket **3**.

The upwardly extending end of post **2** is adapted to support a fixture **9** formed with a pair of spaced flanges **10**, only one being shown in FIGURE 1, which are bored to receive a suitable pivot shaft **11**. Fixture **9** may be permanently or removably affixed to post **2** in any suitable manner, not shown.

The balanced arm, generally indicated as **12**, is adapted to be supported on fixture **9** by pivot shaft **11** for pivotal movement within a vertical plane. Preferably, arm **12** is of thin tubular construction, which may be reenforced by a suitable truss structure **13**. In the preferred embodiment of the present invention, arm **12** and truss **13** are formed of two sections adapted to be telescoped together, as indicated at **14**. Any suitable means not shown, may be employed to lock the sections in a desired telescoped position.

Now referring to FIGURES 1 and 3, it will be seen that a canopy to be supported, **15**, is adapted to be adjustably mounted for universal movement on one end of arm **12**. The mounting arrangement illustrated includes a hinged fitting, indicated generally as **16**, which comprises first and second members **17**, **18**, which are hinged together for relative movement by a shaft **19**. One end of shaft **19** is threaded to receive a wing nut **20**, which, as will be apparent, is employed to clampingly lock members **17**, **18** in a desired relative position. Preferably, fitting member **18** is bored, as at **21**, to receive a suitable canopy supporting pin or shaft **22**, and member **17** is provided with a reduced diameter cylindrical extension **23**, adapted to be slidably and rotatably received within arm **12**, as indicated in phantom in FIGURE 3. Canopy supporting pin **22** may be formed integrally with hub portion **15'** of the canopy or may be removably received within a bore opening provided therein. Extension **23** may be releasably locked within arm **12** by any suitable means, such as a thumb screw **24** which is adapted to be received within a threaded opening in arm **12** and bear against extension **23**. If desired, a similar locking arrangement, not shown, may be employed to releasably lock canopy supporting pin **22** within fitting member bore **21**.

Again referring to FIGURE 1, it will be seen that pivotal movement of arm **12** and thus canopy **15** above the axis of pivot shaft **11** due to the influence of gravity, is effectively prevented by one or more counter-balancing weights **25**, which are preferably mounted for adjustment lengthwise of arm **12**, as by means of screw threads. It will be apparent that by threadably mounting weights **25** on the arm for adjustment with respect to pivot shaft

11, the arm may be properly balanced irrespectful of telescopic adjustment of the arm and truss sections.

Now referring to FIGURES 1 and 2, it will be apparent that balanced arm **12** may be selectively moved into various pivotable positions by means of an assembly including a hand crank operated pulley **26** and a cable **27**. Hand crank operated pulley **26** may be mounted for rotation on shaft **2** by any suitable means, such as a pin bearing **28**. As indicated in FIGURES 1 and 2, the respective ends of cable **27** are suitably connected to arm **12** at points oppositely spaced from pivot shaft **11** and the cable intermediate the ends thereof is wound one or more turns around pulley **26**. Preferably, cable **27** is maintained in a taut condition and the surface of the pulley **26** is roughened to increase the degree of frictional contact between the pulley and cable. It will be apparent that manual rotation of the crank operated pulley serves to simultaneously wind and unwind equal lengths of cable from the pulley, whereby the balanced arm **12** is forced to pivot about shaft **11**, as indicated in phantom in FIGURE 1.

To insure against undesired pivotal movement of balanced arm **12** with respect to pivot shaft **11**, due to high wind forces, it has been found preferable to provide a suitable friction or mechanical lock, not shown, to maintain pulley **26** in the desired rotational position.

While a specific embodiment of the present invention has been shown and described, various modifications and additions thereto will become apparent to one skilled in the art, and thus the scope of the present invention is to be limited as defined in the appended claims.

I claim:

1. A canopy support comprising a post adapted to be mounted on a base; an arm; means adapted to support said arm intermediate the ends thereof on said post for pivotal movement above a horizontally disposed axis, said arm having means adapted to adjustably mount a canopy adjacent a first end thereof and having counter-balance means adjacent the other end thereof tending to prevent pivotal movement of said arm about said pivot axis under the influence of gravity when a canopy is mounted thereon; and means adapted to selectively move said balanced arm into a desired pivotal position, the means to adjustably mount a canopy including a hinged fitting whereby the canopy may be rotated relative to said arm.

2. The canopy support according to claim **1**, wherein said arm moving means includes a crank operated pulley rotatably supported on said post and a cable having the ends thereof connected to said arm at points oppositely spaced from said arm pivot axis, said cable intermediate the ends thereof being wound upon said pulley.

3. The canopy support according to claim **1**, wherein said arm between said first end and said arm pivot axis is formed with telescopic arm sections, and said counterbalancing means is adjustably mounted on said arm.

4. The combination of a canopy and a support for mounting said canopy on a base, wherein the support comprises: a post adapted to be mounted on said base; an arm; means adapted to support said arm intermediate the ends thereof on said post for pivotal movement about a horizontally disposed axis; means adapted to adjustably mount said canopy on a first end of said arm including a hinged fitting whereby said canopy may be rotated relative to said arm; counter-balance means disposed adjacent the other end of said arm and tending to prevent pivotal movement of said arm and canopy about said pivot axis due to the influence of gravity; and means adapted to selectively control pivotal positioning of said balanced arm.

5. A combination according to claim **4**, wherein said arm position control means includes a crank-operated pulley rotatably supported on said post and a cable having the ends thereof connected to said arm at points oppositely spaced from said arm pivot axis, said cable intermediate the ends thereof being wound about said pulley.

6. The combination of a canopy and a support for mounting said canopy on a base, wherein the support comprises: a post adapted to be mounted on said base; an arm; means adapted to support said arm intermediate the ends thereof on said post for pivotal movement about a horizontally disposed axis; means adapted to mount said canopy on a first end of said arm; counter-balance means disposed adjacent the other end of said arm and tending to prevent pivotal movement of said arm and canopy about said pivot axis due to the influence of gravity; and means adapted to selectively control pivotal positioning of said balanced arm, said means for mounting said canopy on said first arm including first and second members joined together for relative pivotal movement, means adapted to selectively lock said members in a desired pivotal position, means to adjustably mount said first member for rotational movement about an axis extending lengthwise of said arm, and means to mount said canopy on said second member.

7. The combination of a canopy and a support for mounting said canopy on a base, wherein the support comprises: a post adapted to be mounted on said base; an arm; means adapted to support said arm intermediate the ends thereof on said post for pivotal movement about a horizontally disposed axis; means adapted to mount said canopy on a first end of said arm; counter-balance means disposed adjacent the other end of said arm and tending to prevent pivotal movement of said arm and canopy about said pivot axis due to the influence of gravity; and means adapted to selectively control pivotal positioning of said balanced arm, said post being cylindrical and said support including means for mounting said post on said base for rotational movement about an axis extending lengthwise of said post, said mounting means comprising a cylindrical member having a closed lower end portion; and a thrust bearing adapted to be disposed between said closed end portion of said cylindrical member and the lower end portion of said post when said post is arranged within said member in mounted position.

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135—20; 248—123