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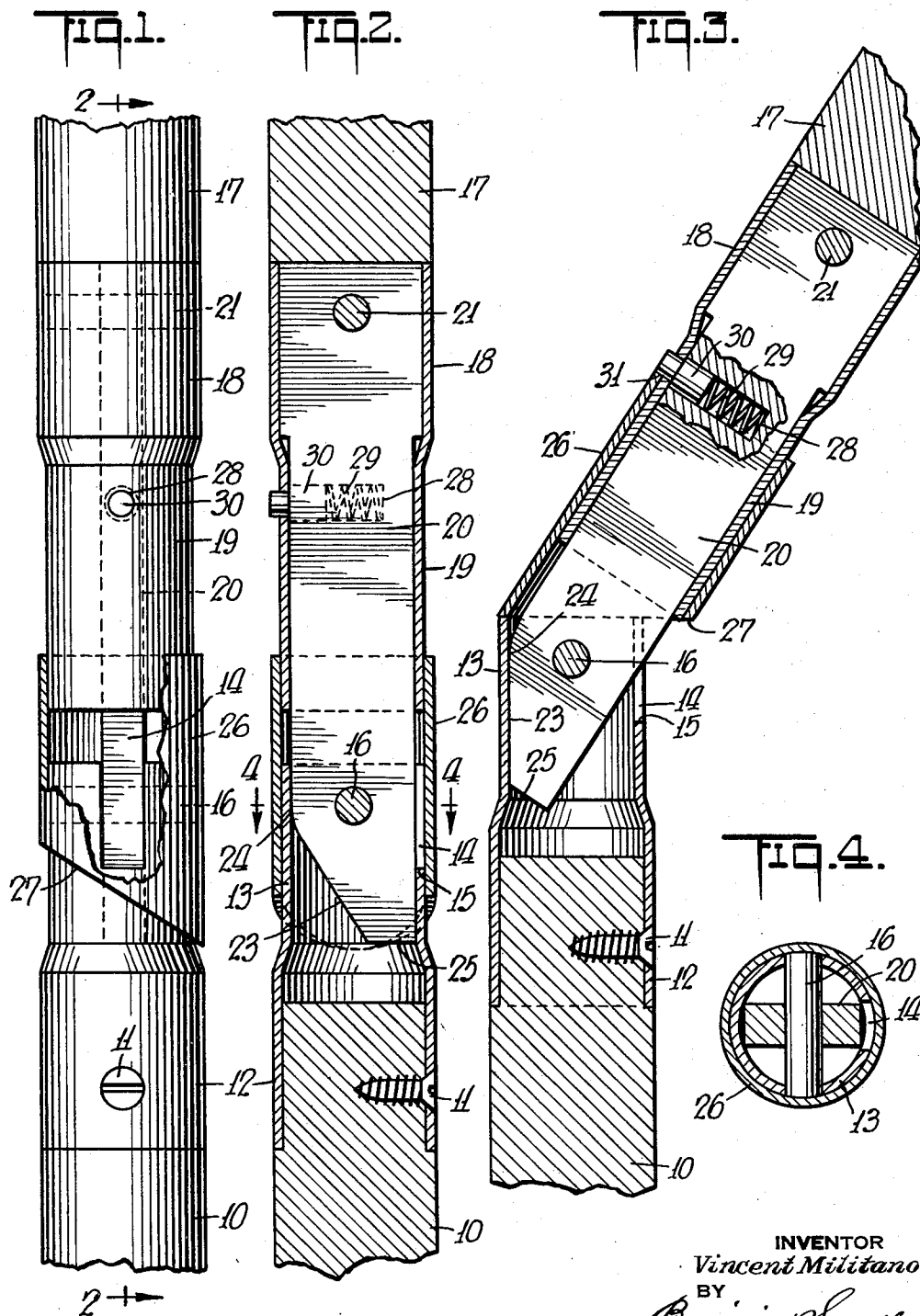
V. MILITANO

2,649,104

TILTABLE UMBRELLA

Filed March 22, 1951

2 Sheets-Sheet 1



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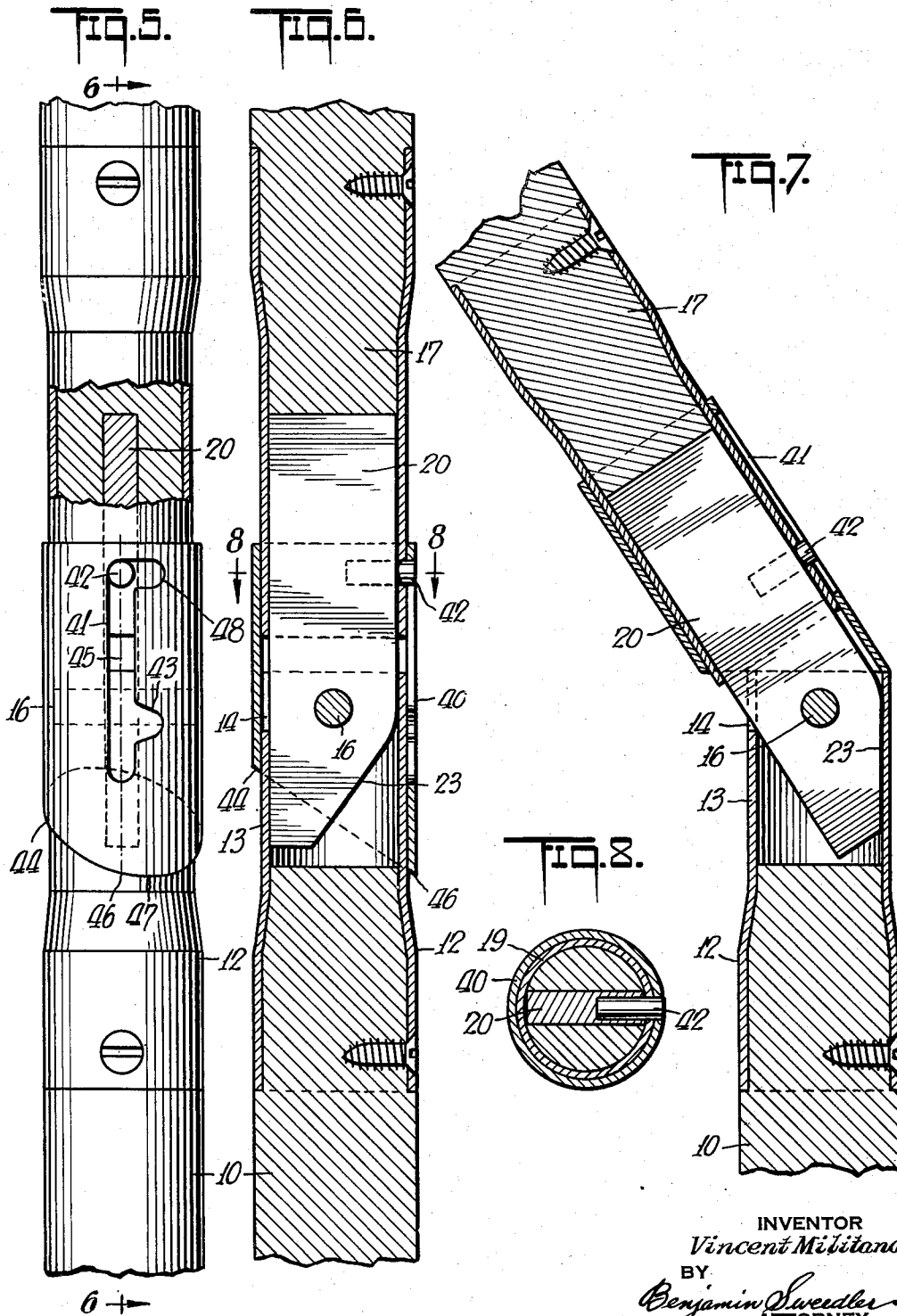
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UNITED STATES PATENT OFFICE

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TILTABLE UMBRELLA

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7 Claims. (Cl. 135—46)

1

This invention relates to improvements in tiltable umbrellas, such as the well known beach and garden umbrellas.

It is an object of this invention to provide a tiltable umbrella, which, when tilted, has no projecting portions in the vicinity of the pivot connection between the upper and the lower poles of the umbrella, and which umbrella therefore presents a clean and attractive appearance.

Another object of this invention is to provide such tiltable umbrella which can be moved readily to and from tilted position, which in both the tilted and vertical positions is positively locked in place, which is simple in design and construction and which can be manipulated readily.

Other objects and advantages of this invention will be apparent from the following detailed description thereof.

In accordance with this invention, the upper pole of the umbrella is provided with a tilt lever at its lower end which lever is pivotally mounted on a slotted sleeve disposed at the top of the lower pole. The tilt lever moves in the slot in this sleeve; the slot permitting tilting movement of the upper pole relative to the lower pole. The tilt lever has its extremity shaped to engage the inner wall of the slotted sleeve; when thus engaged further tilting movement of the upper pole is prevented and the upper pole is maintained at the desired angle. A slidable collar is mounted for movement on the exterior of the slotted sleeve. This collar in its lower position covers the aforementioned slot and provides a maximum holding force maintaining the upper and lower poles in vertical alignment, i. e., non-tilted position. Movement of this collar in an upward direction to uncover the slot permits tilting of the upper pole relative to the lower pole. When this slidable collar is seated in its upper position, it functions to lock the upper pole in its tilted position. Furthermore, in this upper position, the collar cooperates with the slotted sleeve to enclose or envelop the tilt lever and provide a tilt joint free of projections and hence of improved appearance.

In the accompanying drawings, forming a part of this specification and showing, for purposes of exemplification preferred forms of this invention, without limiting the claimed invention to such illustrative instances:

Figure 1 is a fragmentary elevational view of a tiltable umbrella embodying this invention; in this figure the upper and lower poles are shown in vertically aligned position;

2

Figure 2 is a fragmentary vertical section through the upper and lower poles of the umbrella in vertically aligned position taken in a plane passing through line 2—2 of Figure 1;

Figure 3 is a fragmentary vertical section, showing the upper pole in an inclined position relative to the lower pole;

Figure 4 is a horizontal section taken in a plane passing through line 4—4 of Figure 2;

Figure 5 is a fragmentary elevational view, partly in section, of a modified form of this invention;

Figure 6 is a fragmentary vertical section taken in a plane passing through line 6—6 of Figure 5;

Figure 7 is a fragmentary vertical section, showing the upper pole of the modified form of the invention illustrated in Figures 5 to 8, inclusive, in an inclined position relative to the lower pole; and

Figure 8 is a horizontal section taken in a plane passing through line 8—8 of Figure 6.

Referring to the drawings, 10 indicates a lower supporting pole which may be of wood or metal, such as aluminum, and has fixed to the upper end thereof, as by a screw 11, a cylindrical sleeve 12. This sleeve desirably has its lower portion of the same outside diameter as pole 10 and its upper portion 13 of a somewhat smaller outside diameter than its lower portion. Sleeve portion 13 is provided with a slot or opening 14 leading from the top thereof and terminating at 15. A pivot pin 16 is fixed in the side walls of the sleeve portion 13 near the top thereof.

Upper pole 17, which carries the umbrella canopy, as is well known in the art, and may be of wood or metal, such as aluminum, has a sleeve 18 secured to the lower end thereof. The upper portion of this sleeve desirably has its outside diameter the same as that of pole 17 which in turn has its outside diameter the same as that of pole 10. Lower portion 19 is of reduced outside diameter as compared with that of poles 10 and 17 but substantially the same as that of sleeve portion 13. In this way portions 13 and 19 have their outside peripheries in alignment when the upper and lower poles are in vertical alignment.

A tilt lever 20 desirably in the form of a metal plate of a width somewhat less than the width of slot 14 is disposed within the sleeve 18 and is fastened thereto and to the pole 17 by a pin 21. Instead of having the tilt lever 20 pinned to the sleeve 18 and pole 17 by pin 21, the lower portion of the pole 17 may be of integral con-

3

struction provided with a tilt lever within the hollow lower portion corresponding to sleeve 18.

Tilt lever 20 is pivotally mounted on pin 16. The lower portion of this tilt lever is shaped as shown in the drawings, i. e., one corner is truncated to provide an inclined side 23 extending from 24 on the horizontal axis of the pivot pin 16 to the base 25 of the tilt lever. Inclined side 23 is arranged to abut the inner wall of sleeve portion 13 when the upper pole is tilted and thus control the angle of tilt to which the upper pole may be moved.

Slidably and rotatably mounted on the sleeve portions 13 and 19 is a collar 26. This collar has an inside diameter such that it snugly engages the outside peripheries of the sleeve portions 13 and 19 and yet can be moved up and down and turned about these sleeves. The outside diameter of collar 26 is about the same as that of poles 10 and 17. Accordingly, the tilt joint is inconspicuous to the casual observer. The lower portion of collar 26 is truncated; thus one side thereof is appreciably longer than the other side, and the base 27 is of elliptical shape. When the parts are in the position shown in Figures 1 and 2, collar 26 completely covers the slot 14. In this position this collar exerts a maximum holding force on the tilt lever 19 and prevents tilting movement of the upper pole relative to the lower pole.

Tilt lever 20 is provided with an opening 28 in which is disposed a compression spring 29 which engages a button 30 and tends to move this button in an outward direction. This button is so positioned in the tilt lever 20 that it engages the upper edge 31 of the long side of collar 26 when the latter is in the position shown in Figure 3. Sleeve portion 19 is of a length somewhat greater than that of the long side of collar 26 to permit movement of this collar from the locking position shown in Figure 3 to a position above this locking position to release the lock and permit movement of the upper pole to restore it to the vertical position shown in Figures 1 and 2. Thus, collar 26 is movable to three positions; namely, (1) the lower position shown in Figures 1 and 2 where it locks the poles 10 and 17 in vertical position, (2) the position shown in Figure 3 where it locks the poles 10 and 17 in tilted position, and (3) a position above that shown in Figure 3 where it permits return of the upper pole to its vertical position.

In operation, assuming the parts are in the positions shown in Figures 1 and 2, when it is desired to tilt the umbrella, the collar 26 is slid manually in a vertical direction so that it rides up on sleeve portion 19 past button 30 which is depressed manually to permit collar 26 to move past this button. Thereafter or simultaneously collar 26 is turned approximately 90°. In this position the slot 14 is no longer obstructed and the upper pole can be tilted relative to the lower pole with the tilt lever 20 moving about its pivot 16 through slot 14 until inclined side 23 thereof engages the inner wall of sleeve portion 13. When the upper pole is moved to its desired inclined position, collar 26 is moved downwardly so that button 30 snaps outwardly to the position shown in Figure 3 where it engages the upper edge of the collar 26 and holds this collar with the base 27 thereof in abutment with the upper edge of sleeve portion 13. In this position the tilt lever 20 is substantially completely enclosed, being confined within the collar 26 and the sleeve portion 13; the tilt joint has no pro-

4

jections therefrom and is therefore of improved appearance.

To return the upper pole 17 to its vertical position, it is only necessary to move collar 26 to its upper position on sleeve portion 19. This is accomplished by depressing button 30 and sliding the sleeve upwardly. The upper pole is then free to be moved in a reverse direction about its pivot 16. Collar 26 is then lowered and turned 90° to restore it to the position shown in Figures 1 and 2.

The modified embodiment of the invention shown in Figures 5 to 8 differs from that shown in Figures 1 to 4 chiefly in the construction and operation of the collar. The parts of this modification which correspond with those of Figures 1 to 4 are identified by the same reference characters.

In the modification of Figures 5 to 8, collar 40 is reciprocable in a vertical direction chiefly. This collar 40 has in one wall thereof a vertically extending slot 41 of a width to slidably receive a pin 42 which is fixed in the tilt lever 20. Collar 40 is thus movable up and down within the limits of the length of slot 41; pin 42 rides in this slot as the collar is moved up and down. Slot 41 near its base is provided with a lateral extension 43, the function of which will be hereinafter described. The lower portion of collar 40 is truncated; thus, one side thereof is appreciably longer than the other side and the base 44 is of elliptical shape. The point 46 where extension of the longitudinal axis 45 of slot 41 intersects the base edge 44 is offset laterally relative to the point 47 where the principal axis of the ellipse defining the base of collar 40 intersects the periphery of this ellipse. The reason for this offset will be explained hereinafter.

A lateral opening 48 shaped as shown in Figure 5 is provided near the top of slot 41. When the poles 10 and 17 are in vertical alignment, by turning collar 40 somewhat to the left viewing Figure 5 pin 42 is caused to enter this opening 48. This locks the collar 40 in place and prevents accidental upward movement of this collar when the runner (not shown) moves over the collar 40 to effect opening of the umbrella.

In the modification of Figures 5 to 8, as in Figures 1 to 4, the collar is movable to three main positions; namely, (1) position shown in Figures 5 and 6 where the poles are locked in vertical alignment, (2) position shown in Figure 7 where the poles are locked in tilted position, and (3) position in which the pin 42 is disposed in the base of slot 41 in which position the poles can be moved from the tilted to vertical position and vice versa.

In the operation of the modification of Figures 5 to 8 with the parts in the position shown in Figures 5 and 6, when it is desired to tilt the umbrella, the collar 40 is moved upwardly to the limit of movement permitted by the slot 41. In this position of the collar 40 slot 14 is uncovered and tilting movement of the tilt lever 20 about its pivot 16 is permitted, this tilt lever moving in slot 14 as the upper pole 17 is tilted, as clearly shown in Figure 7. When the upper pole has been moved to the desired tilted position in which side 23 of the tilt lever 20 engages the inner wall of sleeve portion 13, as shown in Figure 7, the collar 40 is moved downwardly. Upon the base edge 44 engaging the upper edge of sleeve portion 13, due to the lateral offset between points 46 and 47, a cam action occurs between the up-

5

per edge portion of sleeve 13 and the lower edge of the collar 40 causing the collar 40 to automatically turn to the left viewing Figure 5, so that the pin 42 seats in the lateral extension 43 of the slot 41. Of course, if desired, collar 40 may be given a slight turning movement manually to seat pin 42 in extension slot 43. In this position collar 40 is locked in place, as shown in Figure 7, so that the lower edge thereof is in abutment with the upper edge of sleeve portion 13 substantially completely enclosing the tilt lever 20.

When it is desired to restore the upper pole to its vertical position, it is only necessary to turn the collar 40 to the right viewing Figure 5 so that the pin 42 is again disposed in the longitudinally extending slot 41. Collar 40 is then moved upwardly to disengage the lower edge portion thereof from the upper edge of sleeve portion 13 permitting movement of the upper pole to the position shown in Figures 5 and 6. Collar 30 is then moved downwardly to the position shown in Figures 5 and 6, where it covers the slot 14 and thus locks the upper and lower poles in vertically aligned position. By turning collar 40 manually to the left, viewing Figure 5, pin 42 is seated in opening 43 locking the collar against accidental upward movement when the runner is moved upwardly to open the umbrella.

It will be noted this invention provides a tiltable umbrella, which, in the tilted position has no projecting portions in the vicinity of the pivot connection and therefore presents a clean and attractive appearance. It will be further noted the umbrella of this invention can be moved readily to and from tilted position, has the upper and lower poles positively locked in place in both the tilted and non-tilted positions, and is simple in design and construction.

Since different embodiments of the invention could be made without departing from the scope of this invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In a tiltable umbrella, in combination, a lower pole having a hollow upper portion provided with an opening, an upper pole having a tilt lever pivotally mounted in said hollow upper portion and arranged to be moved from a position in which the two poles are in vertical alignment to a position in which the upper pole is tilted relatively to the lower pole, said tilt lever moving in said opening to permit such tilting movement, a collar slidably mounted for movement longitudinally relative to said poles on said hollow upper portion and on the lower portion of said upper pole and arranged when in its lower position to cover said opening to maintain said poles in vertical alignment and also arranged to be moved longitudinally into position above said hollow upper portion to uncover said opening permitting tilting movement of said upper pole relative to said lower pole, and means on said collar arranged to engage the upper edge portion of the hollow upper portion of the lower pole when the upper pole is tilted relative to the lower pole to lock the two poles in tilted position.

2. In a tiltable umbrella, in combination, a lower pole, a sleeve on the upper end of said lower pole having a slot in the upper portion thereof, an upper pole, a tilt lever on the lower end of said upper pole, means for pivotally mounting said tilt lever in said sleeve, said tilt lever being arranged to move in said slot when

6

the upper pole is tilted relative to said lower pole, a collar slidably mounted for movement longitudinally on said sleeve, said collar in one position covering said slot in said sleeve and maintaining the two poles in vertical alignment and in another position above said sleeve uncovering said slot and permitting tilting movement of said upper pole relative to said lower pole, said collar being provided at its base with an extending portion to engage said sleeve to lock the two poles in tilted position.

3. A tiltable umbrella as defined in claim 2, in which the lower portion of the tilt lever is formed with an inclined side adapted to engage the inner wall of said sleeve to limit the angle of tilt to which the upper pole may be moved relative to the lower pole.

4. In a tiltable umbrella, in combination, a lower pole, a cylindrical sleeve fastened to the upper portion of said lower pole, said sleeve having a slot extending from the top thereof in a downward direction, a pivot pin secured in the upper portion of said sleeve, an upper pole, a second cylindrical sleeve fastened to said upper pole, a tilt lever fastened to said second sleeve and to said upper pole and extending beyond said second sleeve, said tilt lever being pivotally mounted on the pivot pin in said first-mentioned sleeve, said tilt lever having an inclined lower side arranged to engage an inner wall of said first-mentioned sleeve to limit the angle of tilt to which the upper pole may be moved relative to said lower pole, a collar slidably mounted on both of said sleeves for movement up and down on said sleeves and also for rotary movement about said sleeves, said collar being arranged to be moved from a lower position in which it covers said slot and prevents tilting movement of said upper pole relative to said lower pole to a position on said second sleeve above the first-mentioned sleeve in which position the lower edge of the collar engages the upper edge of said first-mentioned sleeve and said collar locks the upper pole in tilted position relative to said lower pole.

5. In a tiltable umbrella as defined in claim 4, in which the collar has its base edge of elliptical shape and the tilt lever has a spring pressed member therein arranged to engage the upper edge portion of the collar to hold it in position to effect said locking of the upper pole in tilted position relative to said lower pole.

6. In a tiltable umbrella, in combination, a lower pole, a cylindrical sleeve fastened to the top of said lower pole, a pivot pin secured in the upper portion of said sleeve, said sleeve having a slot in a side wall thereof extending from the top of the sleeve in a downward direction, an upper pole, a second cylindrical sleeve fastened to the base of said upper pole, a tilt lever disposed in said second sleeve and fixed to said second sleeve and said upper pole, said tilt lever being pivotally mounted on said pivot pin and arranged to move in said slot when the upper pole is moved from a position in vertical alignment with said lower pole to a tilted position relative to said lower pole, a pin mounted in said tilt lever and extending beyond said sleeve on said upper pole, a collar slidably mounted on said sleeves, said collar having an opening arranged to receive said pin, said collar being movable from a lower position where it covers said slot and thus prevents tilting movement of said upper pole relative to said lower pole to an upper position above said first-mentioned sleeve where it uncovers said

7

slot and permits such tilting movement and also to a position where it engages the first-mentioned sleeve to lock the upper pole in tilted position relative to said lower pole.

7. In a tiltable umbrella as defined in claim 6, in which the base of said collar is of elliptical shape, and said collar has the opening therein offset laterally relative to the principal axis of the ellipse defining the base of said collar.

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8

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