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UMBRELLA WITH STAND

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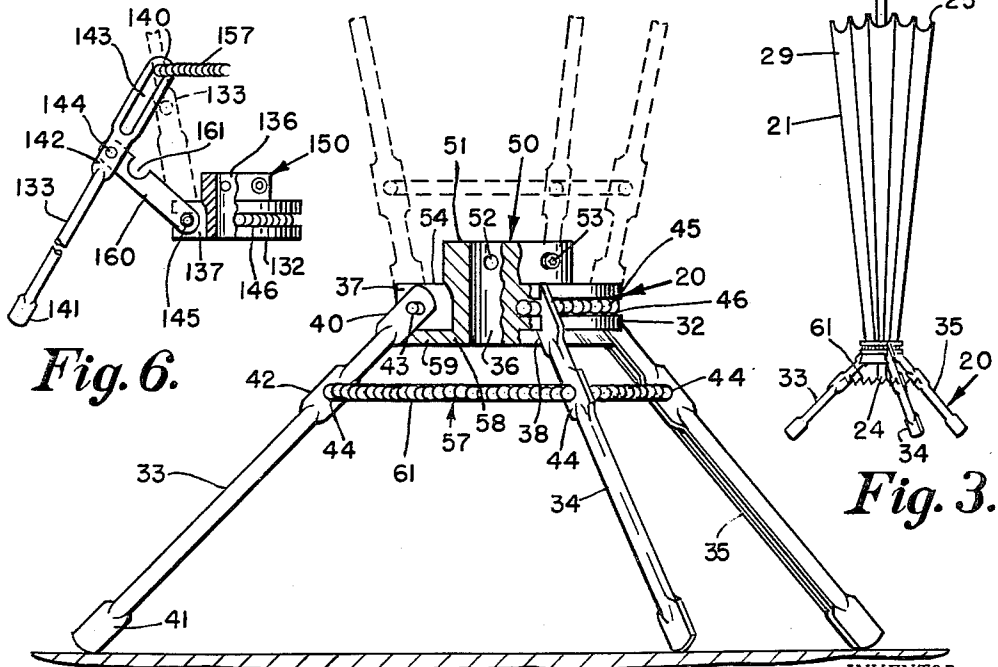
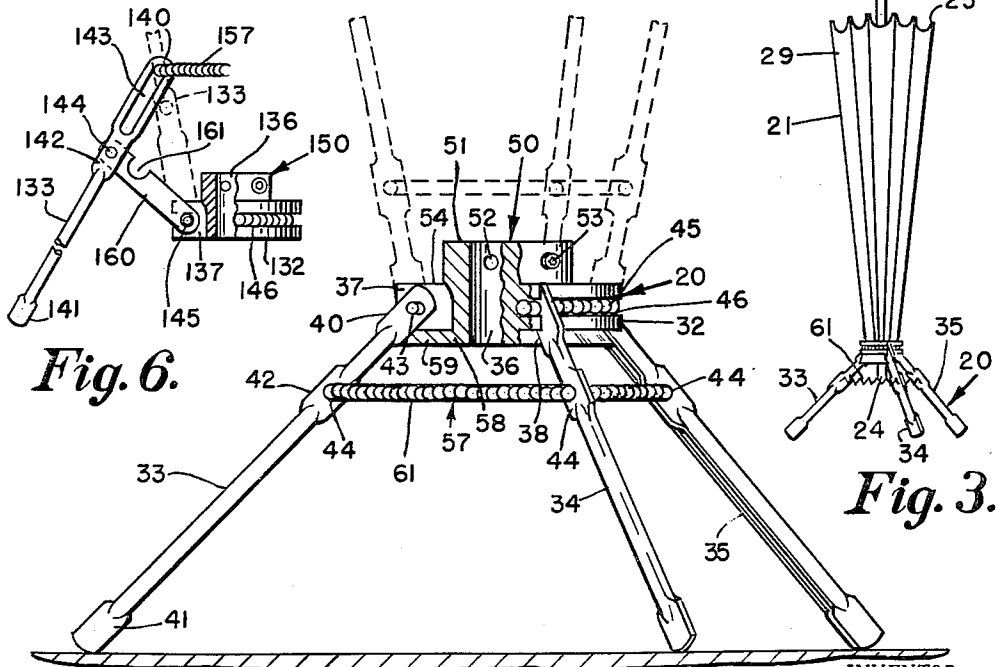
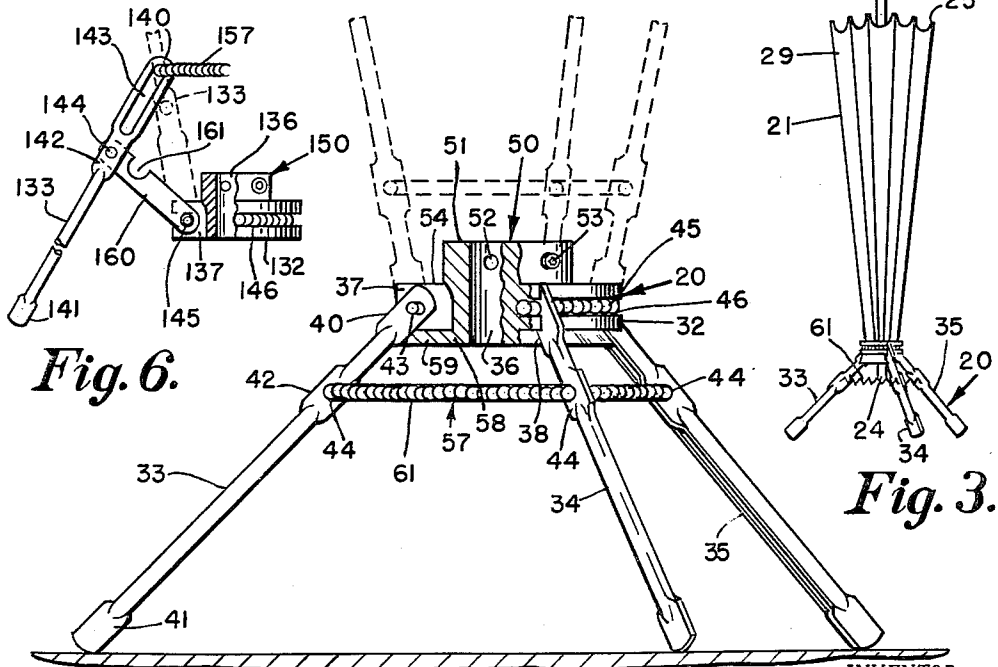
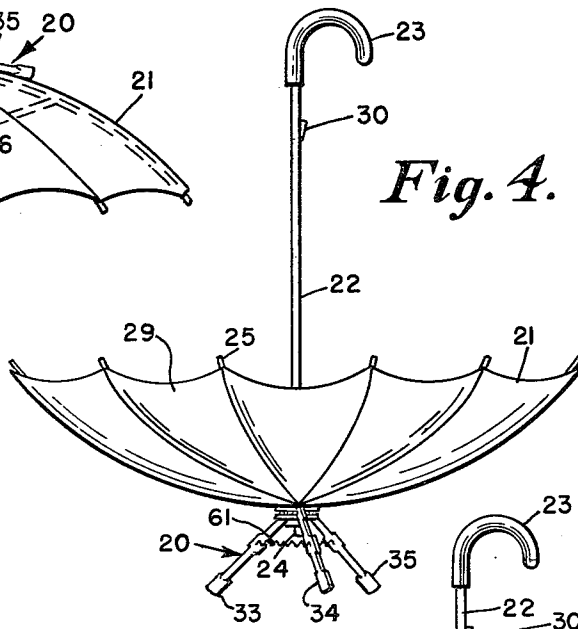
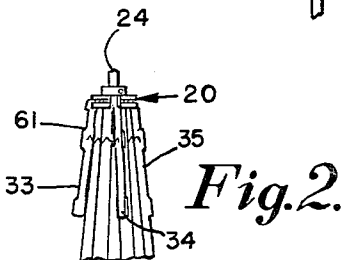
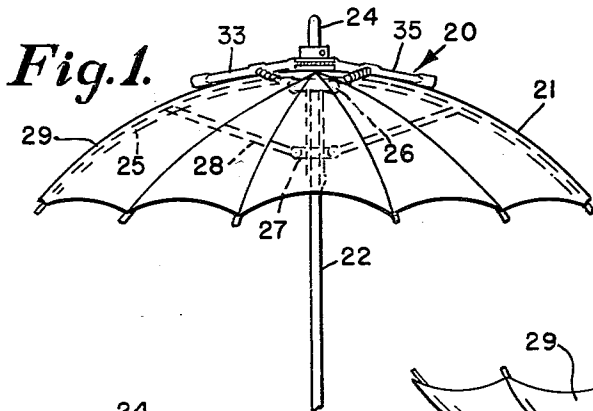


Fig. 5.

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UMBRELLA WITH STAND

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10 Claims. (Cl. 135-16)

This invention relates to a portable, foldable umbrella stand, or support, of light weight and inconspicuous appearance such that it may be continuously carried, ready for use, on the tip of an umbrella.

One object of the invention is to combine a strong, low cost, collapsible support with a conventional umbrella which permits the user to place a wet, closed umbrella, in vertical position, in a sink to drain.

Another object of the invention is to provide a foldable stand for attachment to the tip of conventional umbrellas whereby the umbrella may be supported vertically on a golf course or at the doorway of a building whether open or closed. The likelihood of the umbrella being left on a hook, in a stand or on the ground and forgotten by the owner is thus diminished.

A further object of the invention is to provide a portable, foldable stand on an umbrella, formed of material similar to that in a conventional umbrella and devoid of cumbersome parts, the stand being rigid in operative position but conforming to, and embracing the fabric of, the umbrella when in inoperative position.

Still another object of the invention is to provide a light foldable umbrella stand which will clamp on the tip portion of ordinary umbrellas and may thereafter be available to support the umbrella in inverted, vertical, position whenever desired by the umbrella user.

A still further object of the invention is to provide an umbrella with a tripod on the tip portion, the legs of the tripod resiliently and swingably pivoting through the normal folding arc of the umbrella ribs but also swinging further to a fixed, umbrella-supporting, angular position.

Other objects and advantages of the invention will be apparent from the claims, the description of the drawing and from the drawing in which

FIG. 1 is a side elevation showing the umbrella stand of the invention accommodating itself to the open position of an umbrella.

FIG. 2 is a view similar to FIG. 1 showing the stand accommodating itself to the closed position of an umbrella.

FIG. 3 is a view similar to FIG. 2 showing the umbrella inverted and the stand in operative, umbrella supporting, position.

FIG. 4 is a view similar to FIG. 3 showing the stand supporting an open, inverted umbrella.

FIG. 5 is an enlarged side elevation, partly in section, showing the umbrella stand in umbrella-supporting position in full lines and showing, in dotted lines, the range of inoperative positions of the legs in embracing the fabric of an open or closed umbrella, and

FIG. 6 is a fragmentary view similar to FIG. 5 of a modification.

As shown in the drawing the foldable, portable umbrella stand 20 of the invention may be carried on any conventional umbrella 21, such umbrellas usually having a central rod 22, a handle 23 at one end of the rod and a projecting tip 24 at the other end of the rod. The umbrella 21 also includes ribs 25 pivotally connected to a slotted and grooved ring 26, a slidable sleeve 27 on the rod 22 and struts 28 pivotally connecting the sleeve 27 to an intermediate part of the ribs. The ribs are covered with a suitable fabric 29 which folds into pleats, as shown in FIGS. 2 and 3, when the umbrella is in closed position and there are suitable spring catches 30 for locking the sleeve on the rod.

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Umbrellas, such as 21, are decorative, light and fragile and it will be obvious that while many kinds of cumbersome umbrella stands, of known types, could probably be fixed to the tip 24, the resulting appearance and weight would make it impractical and of little use. No doubt, also means could be built into new umbrellas, as manufactured, which would serve the purpose of an umbrella stand but this would require re-design of umbrella making machinery and be of no assistance to the millions of persons now owning umbrellas. The gist of this invention, therefore, is to provide an umbrella stand which can be easily attached to existing umbrellas and which will be sufficiently light and fragile in appearance to blend with the design of the umbrella.

Preferably, therefore, the umbrella stand 20 is formed with a head 32, similar to the grooved slotted ring 26, and with at least three foldable legs 33, 34 and 35 made of material similar to that now used in umbrellas for the ribs 25 and struts 28. As best shown in FIG. 5, the head 32 is annular with a central opening 36, which is preferably an axial bore but could, of course, be a socket capable of accommodating the tip 24, if desired. The inside diameter of the opening 36 is slightly greater than the outside diameter of the conventional umbrella tip and, since such tips vary in diameter, I have found that an inside diameter of about one half inch will accommodate and receive the tip 24 of most umbrellas now in use.

The head 32 of stand 20 includes a plurality of radial slots such as 37 and 38, there being at least three such slots to accommodate at least three legs although more slots and legs can be used if desired. Each leg, such as 33, is formed of extremely light material of tubular or channel cross section, preferably of metal and may be flattened at each end 40 and 41 as well as at an intermediate point 42. The usual umbrella may be several feet in height but the legs 33, 34 and 35 are preferably only about ten inches in length with the flattened intermediate portion 42 about eight inches from the outer end portion 41 and about two inches from the inner end portion 40. The flattened portions 40 and 41 each contain a circular aperture 43 and 44, the apertures 43 of the legs receiving an annular wire or spring 45 encircling the head 32 in a peripheral groove 46. Thus the flattened portion 40 of each leg closely fits its radial slot 37 to prevent sideways movement but the leg is pivotable on the wire 45 to swing in a radial plane relative to the head 32.

As thus far described, the pivotal mounting of the legs 33, 34 and 35 on the head 32 is somewhat similar to conventional umbrella construction. It is essential, in this invention however, that the radial slots 37 and 38, the shape of the flattened portions 40 and the depth of the groove 46 be such that the legs may freely swing through arcuate paths of about one hundred thirty-five degrees while in an umbrella, the folding arc of the ribs is less than ninety degrees. Thus as shown in full lines in FIG. 5, the legs 33, 34 and 35, each are swingable in radial planes from an operative position, at about a forty five degree angle from the projected axis of the opening 36, through an angular distance of about one hundred thirty-five degrees until they are again in substantial parallelism with the said projected axis. The latter position is shown in dotted lines, this being one inoperative position on a closed umbrella. The other inoperative position, on an open umbrella, wherein the legs are nearly in the plane of the slotted, grooved ring, or flange, 45 of head 32 is shown in FIG. 1.

Fastening means 50 is provided on head 32 preferably in the form of an integral collar 51 having a plurality of set screws such as 52 and 53 threaded therearound. A split clamp, of the type used on bicycles, pipes and the like, or any other suitable detachable fastening means, could be

fixed to the ring 54 of head 32 for securing the stand 20 to the tip 24 but a collar with set screws on one, or both faces, of the ring 54 is inconspicuous and simple.

Latching means 57 is provided on the stand 20 for retaining the legs 33, 34 and 35 in a predetermined angular relation to the head 32. The latching means is designed to include mechanism for detachably securing the legs, each at about an angle of forty-five degrees, when the stand is operative as an umbrella-supporting tripod as in FIGURES 3, 4 and 5. It is also designed to include mechanism for resiliently retaining the legs in embracing engagement with the fabric 29 of an umbrella, without tearing the fabric, when the device is in inoperative position and while the umbrella is either closed, open or being folded as shown in FIGURES 1 and 2. Latching means 57 includes at least one stop means 58 in the form of an annular flange 59, on head 32 of such outside diameter that it intercepts the edge of the flattened portion 40 of each leg, in the folding path, or arc, of the leg, and forms a terminal point for such path. The legs 33, 34 and 35 are thus prevented from approaching each other further and, in operative position, are each at the same fixed angle. The stop means 58 may include a similar flange on the opposite face of the ring 54, or as illustrated, the collar 51 may also form a stop to the swinging movement of the legs at the opposite ends of their arcuate paths. However, the umbrella 21 itself, serves as an effective stop when the legs are inoperative because the legs rest lightly against the fabric as shown in FIGURES 1 and 2. This is for the reason that the latching means includes an annular spring 61 threaded through the apertures 43 and 44 of the flattened portions 42 of the legs 33, 34 and 35. The spring 61 normally defines a closed circular figure about two inches in diameter and it may be a metal coil spring, a rubber ring or of any other suitable elastomeric material. In the position of the stand 20, shown in FIG. 2 the spring 61 is relaxed but holds the legs against the fabric of the folded umbrella so that they do not fall outwardly by gravity or during movement of the umbrella. When the umbrella is opened, as in FIG. 1, the spring 61 permits the legs to resiliently open and unfold, the tension of the spring being insufficient to cause fracture of the fabric 29 but sufficient to hold the legs against the fabric. Thus in umbrella supported position the legs of the stand 20 hug the fabric of the umbrella while opening and closing through the folding arc of the ribs.

To place the stand 20 in operative umbrella-supporting position, the user may move one leg 33, 34 or 35 past the dead centre of the folding path of the legs, whereupon the tension of spring 61 will snap all of the other legs through an additional folding path to the terminal point of the folding path, at forty-five degrees to the head 32 and to the floor, ground or other support. When the legs are stopped by the flange 59, the spring 61 is under tension and defines a closed triangular figure when the stand is a tripod. The triangular figure of the spring may have sides about three or four inches in length which is sufficient to maintain the stand 20 as a tripod in view of the lightness of the umbrella.

It will be obvious that separate springs could be used in place of a single annular spring 61 or that various other mechanical equivalents might be used in place of the specific embodiments shown herein.

In any case, the legs are spring loaded toward the folded position of FIG. 2, while in the folding arc of the umbrella ribs, and spring loaded toward the stop flange 59, when swung slightly beyond that folding arc.

As shown in FIG. 6 the portable umbrella stand of the invention may comprise a head 132 having a tip opening 136, radial slots 137 and fastening means 150, all similar to corresponding parts of stand 20. Each leg such as 133 includes an aperture 144 in the intermediate flattened portion 142, but is provided with a longitudinally extend-

ing slot 143 extending to the inner end portion 140. A pivotable link 160 connects the intermediate portion 142 to the wire 145 in the annular groove 146, and includes a recess 161 for accommodating the annular coil spring 157. The operative position for supporting in inverted, closed umbrella is shown in full lines. For folding, the outer ends 141 of each leg are swung through an arc of about 135°, with spring 157 moving down the slots 143 until dead centre is reached. Thereafter the spring enters the recesses 161 and spring loads the legs into the folded position shown in dotted lines. The umbrella 20 is not shown in FIG. 6 for clarity, but it will be apparent that when an umbrella is supported in the device, the inner ends 140 of the legs will bear against the fabric or ribs with the umbrella itself serving as the stop means for the legs. In the inoperative unfolded position, shown in dotted lines, the umbrella can be opened to the position shown in FIG. 1 in which case the spring 157 simply expands as the legs move outwardly. In this embodiment of the invention the umbrella is not intended to be opened as in FIG. 4, but must be supported in the folded, or closed, position as in FIG. 3, since the inner ends 140 would tend to pierce the fabric unless the umbrella tip was unusually long.

I claim:

1. A foldable, portable stand for umbrellas, said stand comprising a head having a central opening for receiving the tip of an umbrella; at least three legs pivotally mounted on said head to swing in their respective radial planes through arcs of about 135 degrees, from an inoperative, folded position extending toward the handle of said umbrella to an operative, unfolded position, extending away from said umbrella handle in a predetermined angular relation to said head fastening means on said head for detachably securing said stand on the tip of said umbrella, and automatic, resilient latching means on said stand, spring loading said legs toward said folded position at one end of said arcs, for embracing an open or closed umbrella and yieldably retaining said legs in said predetermined angular relation to said head, at the other end of said arcs, for supporting an inverted open or closed umbrella.

2. A combination as specified in claim 1 wherein said stand is a tripod, said head includes a slotted ring and said legs are of conventional umbrella rib and strut material, each pivotally mounted in one of the slots in said ring, whereby said stand is light and inconspicuous when borne on an umbrella.

3. A combination as specified in claim 1 wherein said head includes a slotted ring and an annular collar and said fastening means comprises a plurality of spaced set screws threadedly mounted in said collar and tightenable on the tip of an umbrella.

4. A combination as specified in claim 1 wherein said resilient latching means comprises an annular spring connecting said legs, intermediate of the height thereof, and stop means on said head, in the arcuate path of said legs for terminating the swinging movement thereof at an angular distance of about forty-five degrees from the projected axis of the opening in said head.

5. In combination with an umbrella, a portable umbrella stand comprising a tripod head secured to the umbrella tip; tripod legs foldably connected to said head to swing from an inoperative folded position in substantial parallelism with the umbrella handle rod and overlying the exterior face of said umbrella through an arcuate path of about one hundred thirty-five degrees toward the umbrella tip to an unfolded, operative position forming an umbrella supporting tripod and resilient, yieldable latching means on said stand for detachably retaining said legs in said operative, or said inoperative, position.

6. An umbrella having a foldable tripod secured to the umbrella tip, the legs of said tripod being pivotable through the normal folding arc of the umbrella ribs; stop

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means on said tripod for retaining the tripod legs in unfolded, umbrella-supporting, operative position and resilient, latching means on said tripod for retaining the tripod legs selectively in said operative position or in yieldable, umbrella-supported, inoperative position overlying and engaging the exterior face of said umbrella.

7. An umbrella having a portable, foldable umbrella stand mounted on the tip portion thereof, said stand having at least three legs, each swingable from a folded position overlying the folded umbrella ribs through the folding angle of said umbrella ribs and through an additional angular distance to a terminal point beyond the umbrella tip and resilient means on said stand yieldably and resiliently retaining said legs in said folded position, said means detachably securing said legs at said terminal points, when said legs are swung through said additional angular distance, thereby supporting the umbrella when the umbrella is inverted.

8. A combination as specified in claim 5 wherein the

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inner end portion of each said leg is pivoted to said head and said latching means comprises an annular coil spring connecting the intermediate portions of said legs.

9. A combination as specified in claim 5 wherein the intermediate portion of each said leg is foldably connected to said head by a pivotable link and said latching means comprises an annular coil spring connecting the inner portions of said legs.

10. A combination as specified in claim 9 wherein each said link includes a recess for accommodating said spring and each said leg includes a longitudinally extending slot for accommodating said spring.

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