

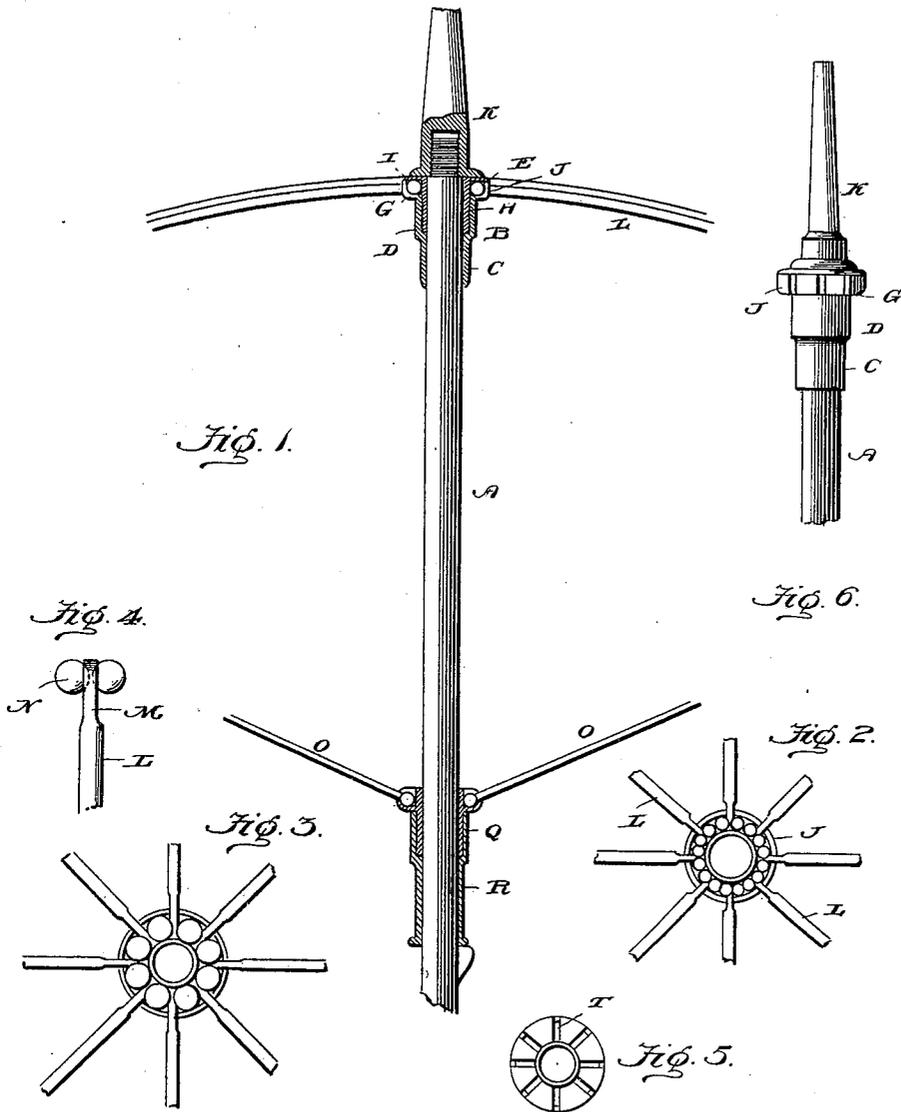
No. 634,453.

Patented Oct. 10, 1899.

W. H. GURNEY.
UMBRELLA.

(Application filed June 21, 1899.)

(No Model.)



Witnesses:

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UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 634,453, dated October 10, 1899.

Application filed June 21, 1899. Serial No. 721,403. (No model.)

To all whom it may concern:

Be it known that I, WORTH H. GURNEY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Umbrellas; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in umbrellas, the construction and advantages of which will be hereinafter fully set forth.

The objects of my invention are, first, to provide a simple and durable umbrella, one which may be folded into a small compass when closed; secondly, to provide a new form of bearing for the ends of the ribs and stretchers in the top notch and runner; thirdly, to construct the parts so that broken ribs or braces can be removed and replaced by new ones with very little labor, and, fourthly, to construct the same so that a perfect ball-bearing is formed for the ribs when placed in the notch and also the braces when attached in the runner.

With these objects in view I have devised the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of so much of an umbrella-frame as is necessary to the proper illustration of my invention. Fig. 2 is a bottom plan view of the top notch, the cap removed to show fully the arrangement of the balls and ribs when using sixteen balls with eight ribs. Fig. 3 is a similar view showing a mode of attaching the ribs in the notch with eight balls. Fig. 4 is an enlarged view of a portion of one of the ribs, showing the position of the balls securing the end of the rib. Fig. 5 is a top view of the runner-cap, showing the radial slots. Fig. 6 is a perspective view of a portion of umbrella-stick with notch attached.

Letters of reference indicate the parts throughout the several views.

A denotes the stick or rod of the umbrella, which may be formed of wood or of metallic tubing.

Referring particularly to Figs. 1 and 2, B indicates a sleeve. The lower portion C is adapted to fit and be secured rigid upon the umbrella-stick. The said sleeve is enlarged at D to receive the sleeve forming the lower portion of the cap E. The upper end J of the sleeve B is formed into a cup-shaped flange and provided with radial slots G. The cup forms a channel for the balls. The cap E is formed with a downwardly-projecting sleeve H, which slides within the enlarged portion D of the sleeve B, the flange or cap I being the same diameter as the cup J. The cap E is held in position by the upper end of the umbrella-stick K being screwed upon the end clamping the sleeve or cap rigid within the sleeve B.

The construction of the upper ends of the ribs L, I have shown in Fig. 4. The ribs are U-shaped wire now in general use, pressed together at the end M, countersunk upon each side to conform to the size of the balls N. The spherical surfaces come in contact in the center of the ribs or braces O. Any number of ribs and braces may be used. Fig. 2 shows eight ribs with sixteen balls. Fig. 3 shows the same amount of ribs, but only eight balls. If seven ribs are used, seven or fourteen balls are used.

The runner P is constructed similar to the top notch, except that the upper sleeve Q screws within the enlarged portion of the sleeve R. The cap S is cup-shaped upon the under side and provided with radial slots T, as shown in Fig. 5. The braces O' are secured within the runner the same as the ribs within the notch. The cups are so constructed and proportioned that the spherical surfaces come in contact with each other, forming a perfect bearing for the ribs and braces when placed in position.

I am aware that balls have been used for umbrella-bearings in conjunction with spherical ends upon the ribs and braces to operate in grooves in the runner and notch-ring. I would have it understood that this construction of notch is applicable to the runner.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described umbrella-rib having its notch end terminal provided with two opposing faces, each face having countersunk

therein a spherical depression, said depressions being opposite each other, as set forth.

2. The herein-described umbrella, the combination with a circular disk provided with
5 a runway and a series of notches formed in the disk, of a rib adapted to fit in said notches having its end formed with two opposing faces, each face having countersunk therein a spherical depression upon opposite sides,

and balls adapted to rest in said runway of the disk and fit in said depressions of the rib to hold the same in the disk. 10

In testimony whereof I affix my signature in presence of two witnesses.

WORTH H. GURNEY.

Witnesses:

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EDWARD C. GURNEY.