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C. S. GURNEY.

UMBRELLA.

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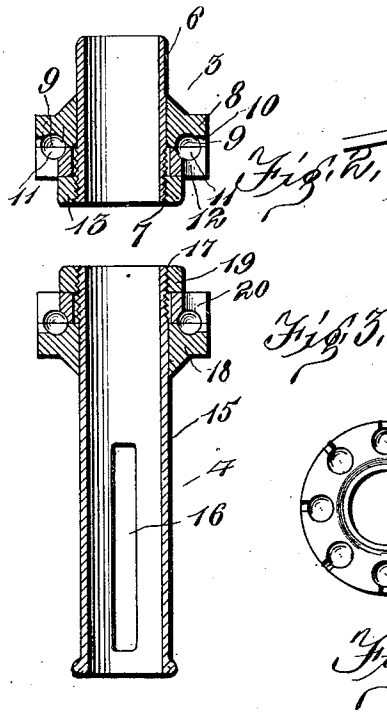


Fig. 2.

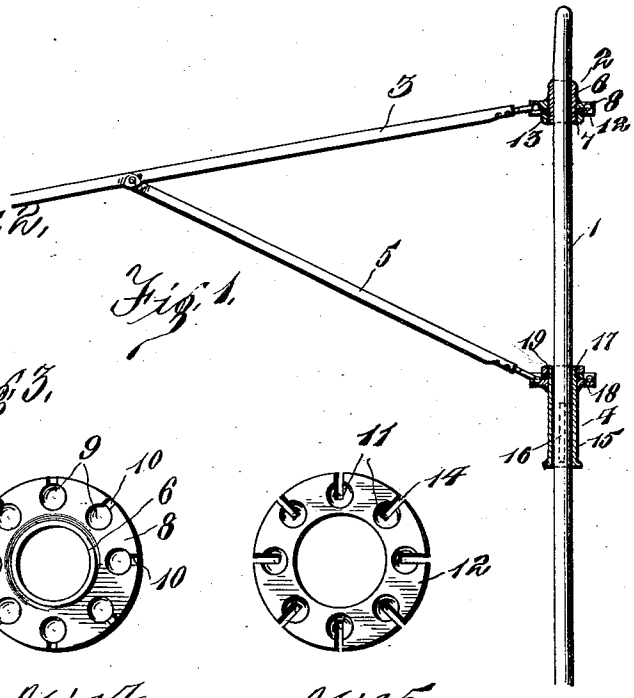


Fig. 1.

Fig. 3.

Fig. 4.

Fig. 5.

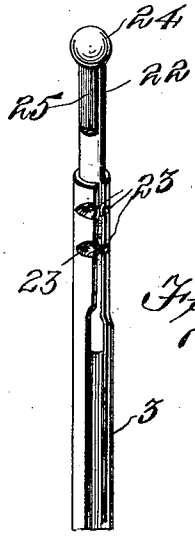


Fig. 6.

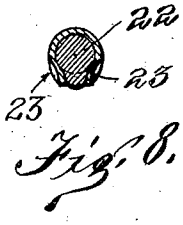


Fig. 8.

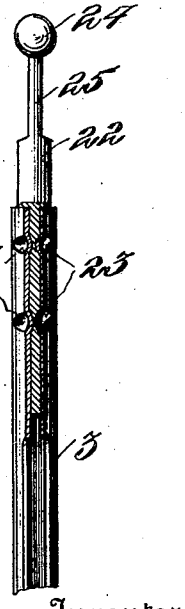


Fig. 7.

Witnesses

Forrest G. Smith.

C. H. Griesbauer.

Inventor

C. S. Gurney

by H. B. Wilson

Attorney

UNITED STATES PATENT OFFICE.

CALEB S. GURNEY, OF PORTSMOUTH, NEW HAMPSHIRE.

UMBRELLA.

No. 841,245. Specification of Letters Patent. Patented Jan. 15, 1907.

Application filed November 24, 1905. Serial No. 288,965.

To all whom it may concern:

Be it known that I, CALEB STEVENS GURNEY, a citizen of the United States, residing at Portsmouth, in the county of Rockingham and State of New Hampshire, 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.

My invention relates to improvements in umbrellas; and it consists in certain novel features of construction, combination, and arrangement of devices hereinafter described and claimed.

The object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more efficient and durable in use and less expensive to manufacture.

The above and other objects which will appear as the nature of the invention is better understood are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view through a frame of an umbrella embodying my invention. Fig. 2 is a sectional view, on an enlarged scale, through the fastening member for the inner ends of the ribs. Figs 3 is a similar view through the runner. Figs. 4 and 5 are views of the inner or opposing faces of the disks between which the ribs and braces or stretchers are pivoted. Fig. 6 is a perspective view, on an enlarged scale, of one end of one of the ribs or stretchers, showing the manner in which its pivot-tip is secured; and Figs. 7 and 8 are respectively longitudinal and transverse sectional views through the rib and its tip.

Referring to the drawings by numerals, 1 denotes the rod or staff of an umbrella which has adjacent to its upper or outer end a fastening member or head 2, in which the upper ends of the ribs 3 are pivoted, and slidable upon this central portion is a runner 4, to which the lower or inner ends of the braces or stretchers 5 are similarly pivoted. The braces or stretchers 5 are pivotally connected to the ribs 3 in the manner shown or in any other suitable or preferred way.

The fastening member or head 2 comprises a sleeve or tubular element 6, which is fixed upon the rod 1 in any desired manner, and has its lower end externally screw-threaded, as shown at 7. Formed or provided upon the sleeve 6, intermediate its ends, is a disk 8, which has in its face, adjacent to the screw-threads 7, semispherical sockets 9, which have contracted portions 10, extending radially and opening in the periphery of the said disk 8. The ends of the ribs 3 are pivoted between the sockets 9 and similar semispherical sockets 11, formed in a removable disk 12, which has a central opening through which the threaded portion of the sleeve 6 extends. This disk 12 is adapted to be clamped upon the disk 8 by means of a nut 13, which is engaged with the screw-threads 7, and in its periphery is formed a series of radially-extending notches or slots 14, which aline with the sockets 11 and with the neck portions 10 of the sockets 9.

The construction of the runner 4 is very similar. It comprises a long sleeve or tube 15, which slides upon the rod 1 and is formed with a longitudinal slot 16 to engage the usual spring catches or keepers upon the rod. The inner or upper end of the sleeve 15 is screw-threaded, as shown at 17, and formed or secured upon it adjacent to said screw-threads is a disk 18, which is similar to the disk 8. Said disk 18 has the semicircular sockets 9, which have the contracted neck portions 10. Clamped upon the disk 18 by means of a nut 19, which engages the screw-threads 17, is a disk 20, which is similar to the disk 12. Said disk 20 is formed with the semispherical sockets 11 and the radial notches or slots 14.

The pivots or balls upon the inner ends of the ribs 3 and stretchers or braces 5 are the same and each comprises a solid tip 22, which is straight and of cylindrical form and adapted to have one of its ends secured within the end of the rib or stretcher and its other end seated in a pair of sockets 9 11. The ribs 3 and stretchers 5 are preferably in the form of channel metal, U-shaped or paragon shape in cross-section, and the tips 22 are secured in their ends by clasping, compressing, and indenting these parts, as shown at 23, so that portions of the flanges of the ribs or stretchers will enter depressions or recesses formed in the body of the tip, as clearly shown in Figs. 6 and 7. This manner of fastening the tips is extremely durable and inexpensive and effectively prevents both longitudinal and transverse or axial movement of the tip in the rib or stretcher. The outer end of each of the tips 22 is formed

with a ball or spherical head 24, which is adapted to seat between the sockets 9 and 11, and adjacent to said ball or spherical head the tip is formed with a flattened portion 25, which is adapted to project through and swing in the notches or slots 14 and the contracted neck portions of the sockets 9. This flattened portion 25 of the tip is preferably formed by compressing the same at diametrically opposite points, as clearly shown in Figs. 6 and 7.

The construction and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that the construction is simple, strong, and durable, so that the umbrellas may be manufactured at comparatively small cost. The provision of the nuts 13 and 19 permits the disks 12 and 20 to be readily removed, so that new ribs may be provided to replace broken ones. The provision of the flattened portions 25 on the pivot-tips 22 effectively prevents the balls or spheres 24 from turning or twisting in their sockets, and by clasping, compressing, and indenting the ribs and stretchers, as shown at 23, the tips 22 will be rigidly secured therein against both longitudinal and transverse movement.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. An umbrella-rib, stretcher or the like, of channel metal, having a pivot-tip inserted in one of its ends and secured therein against longitudinal and axial movement, by clasping and compressing the same to form indentures or depressions, substantially as shown and described.

2. In combination with a rib or spreader having a pivotal element at one end, an umbrella-notch comprising an inner element and an outer element formed in their opposing faces with rib or stretcher pivotal element receiving sockets, the inner element being also provided with radial slots extending outwardly from said sockets to clear the ribs or stretchers when the umbrella is closed, the outer element being also provided in its inner side with radial neck-grooves extending outwardly from the said sockets to receive the ribs or stretchers when the umbrella is opened and prevent lateral turning of said ribs or stretcher with respect to said umbrella rod or handle, substantially as described.

3. In an umbrella, the combination of a tubular element or sleeve, external screw-threads at one end of said element, a disk upon said element intermediate its ends and having in its face, adjacent to said screw-threads, semispherical sockets formed with contracted neck portions, a removable disk upon said element having in its inner face semispherical sockets and in its periphery radially-extending notches or slots which aline with said sockets, a nut upon the screw-threaded end of said element for clamping said disks together, and ribs or stretchers having balls at their ends to enter said sockets and flattened portions adjacent to said balls, to project through and swing in said notches or slots and in said contracted neck portions of said sockets, substantially as described.

4. In combination with a rib or stretcher having a ball at one end, an umbrella-notch comprising an inner element and an outer element, said elements formed in their opposing faces with ball-receiving sockets, the inner element being also provided with a radial slot extending outwardly from the ball-receiving socket to clear the rib or stretcher when the umbrella is closed, the outer element being also provided on its inner side with a radial neck-groove extending outwardly from the ball-receiving socket to receive the rib or stretcher when the umbrella is opened and prevent lateral turning of said rib or stretcher with respect to the umbrella rod or handle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CALEB S. GURNEY.

Witnesses:
JOHN H. BARTLETT,
EMILY STAVERS.