No. 807,892. PATENTED DEC. 19, 1905.

J. C. WESTERFIELD.

UMBRELLA.

APPLICATION FILED JAN. 16, 1905.

Fig. 1.

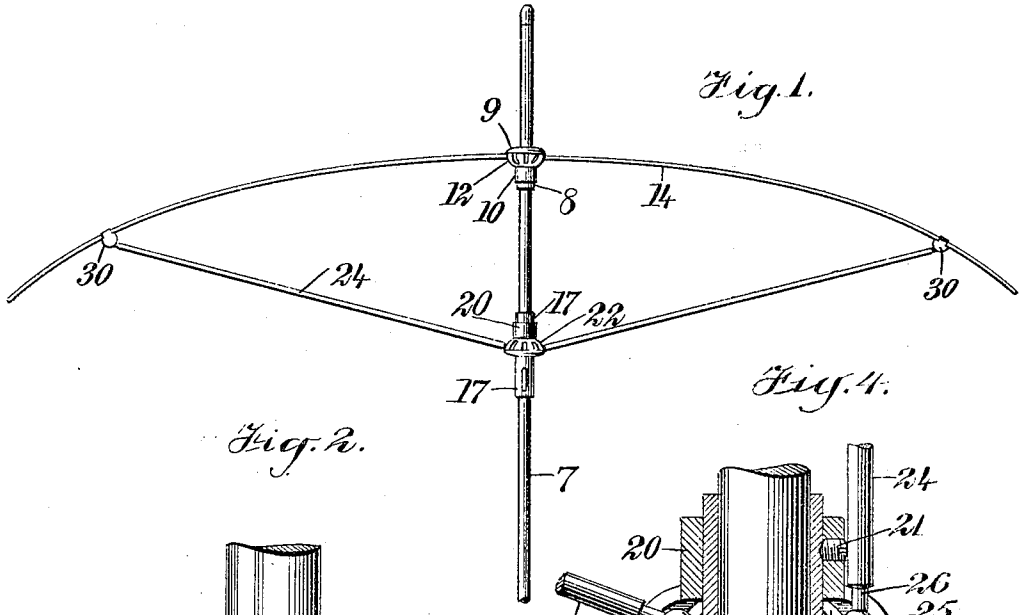


Fig. 2.

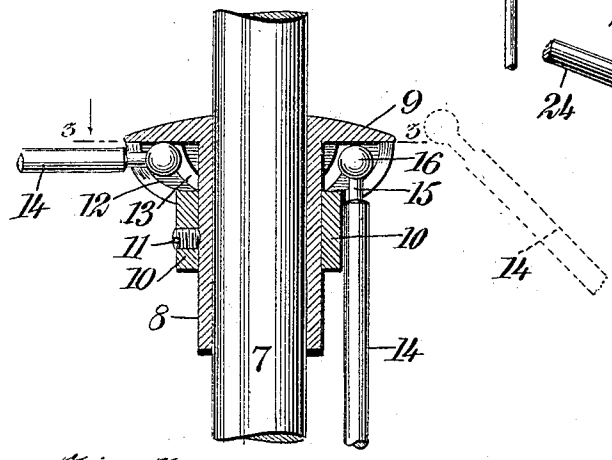


Fig. 4.

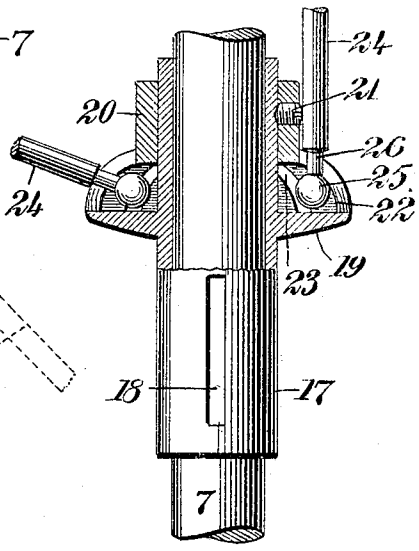


Fig. 3.

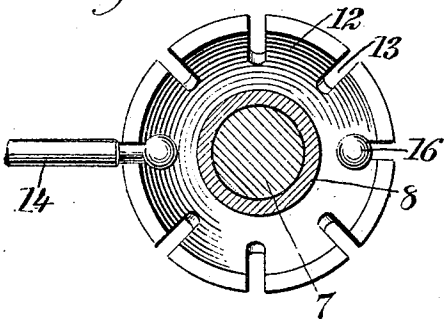


Fig. 5.

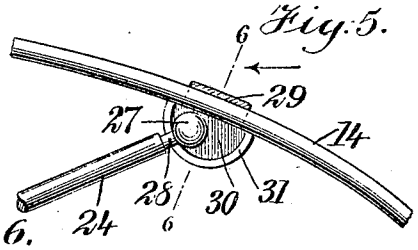
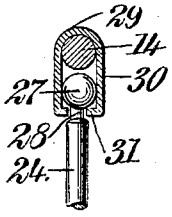


Fig. 6.



WITNESSES:

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UMBRELLA.

No. 807,892. Specification of Letters Patent. Patented Dec. 19, 1905.

Application filed January 16, 1905. Serial No. 241,265.

To all whom it may concern:

Be it known that I, JOSEPH C. WESTERFIELD, a citizen of the United States, and a resident of Belleville, in the county of Essex and State of New Jersey, have invented a new and Improved Umbrella, of which the following is a full, clear, and exact description.

My invention relates to umbrellas, my more particular object being to produce a construction in which certain parts are easily replaced and in which friction is reduced to a minimum.

My invention further relates to certain details whereby simplicity and cheapness are attained in the construction of the different elements.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary elevation of the umbrella-frame partly assembled. Fig. 2 is an enlarged fragmentary vertical section through the notch and its accompanying parts. Fig. 3 is an enlarged horizontal section upon the line 3 3 of Fig. 2 looking in the direction of the arrow and showing the notch in plan view. Fig. 4 is an enlarged view, partly in elevation and partly in section, showing the runner and its accompanying parts. Fig. 5 is a vertical section showing the bearing connecting together the stretchers 24 and the ribs 14, and Fig. 6 is an enlarged vertical cross-section upon the line 6 6 of Fig. 5 looking in the direction of the arrow and showing the junction between one of the ribs 14 and one of the stretchers 24.

The staff is shown at 7 and is encircled by a sleeve 8, mounted rigidly thereupon, this sleeve being provided with a mushroom-head 9 and being encircled by a collar 10, provided with a set-screw 11, whereby it is detachably secured upon the sleeve. Radiating from the collar 10 and integral therewith are petals 12, separated from each other by slots 13, the petals 12 and the sleeve 10 together constituting a spider. The spider and the collar together constitute the notch. The ribs are shown at 14, each rib having a neck 15, supporting a head 16, as will be understood from Fig. 2. By loosening the set-screw 11 the spider may be moved relatively to the sleeve 8, whereby the ribs may be mounted in position by slipping the ball-heads 16 into position, so that the necks 15 will each project through a slot 13. This allows the ribs 14 to move radially from a common center and also enables them to be readily attached to or detached from the notch. The ribs being in position, the notch is replaced, as indicated by full lines in Fig. 2, and the set-screw 11 is tightened, so as to prevent further movement of the spider.

The runner-sleeve 17 is provided with a slot 18, this slot being common to all umbrellas. Integrally mounted upon the rubber sleeve 17 is an annular flange 19, and above this flange and movable relatively thereto is a collar 20, provided with a set-screw 21. This collar terminates in petals 22, separated by slots 23, and is adapted to rest upon the flange 19. A number of stretchers 24 are each provided with a ball-head 25, supported upon a neck 26, which may be inserted within one of the slots 23, thereby affording a bearing for the lower end of the stretcher. The upper end of each stretcher 24 terminates in a ball-head 27, supported upon a neck 28.

Mounted upon each rib 14, intermediate of the ends thereof, is a fastening 29, provided with semicircular lobes 30, which terminate in arcuate flanges 31, integral therewith. The proximity of these arcuate flanges to each other leaves an open space or slot through which passes the neck 28 of the brace 24, as indicated in Figs. 5 and 6. The lobes 30 are of spring metal and have sufficient resilience to enable the ball-head 27 to be inserted by momentarily prying the lobes apart.

I do not limit myself to any particular type or style of ball-head for use either upon the ribs or upon the stretchers of the umbrella; neither do I limit myself to the use of sheet metal in the construction of the member 29, as obviously the same can be made of other substances; nor do I limit myself to the particular forms or proportions of the several parts, nor to the exact construction shown.

My invention is used as follows: The upper ends of the ribs 14 having been secured in position, as indicated in Fig. 2, and the stretchers 24 having been connected with the ribs, as indicated in Figs. 5 and 6, the lower ends of the stretchers 24 are connected, as

shown in Fig. 4. This is done by loosening the set-screw 21 and elevating the spider so that the ball-heads 25 are placed inside of it, the necks 26 being free to move radially through the slots 23, as will be understood from Fig. 4. With the parts in position the umbrella is used as any other umbrella. Should a rib or stretcher be worn out or broken, it may readily be removed and another one inserted in its place. The spiders, set-screws, and other parts are also preferably as far as practicable made removable, and consequently interchangeable.

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

1. The combination of a staff, a notch mounted thereupon, a rib pivotally connected with said notch and adapted to swing radially outward therefrom, a fastening mounted upon said rib and provided with flat semicircular lobes of spring metal, said lobes terminating in arcuate flanges forming abrupt angles with said lobes, and a stretcher provided with a ball-head disposed intermediate of said semicircular lobes.

2. The combination of a rib, a stretcher provided with a ball-head to be connected with said rib, and a fastening mounted upon said rib and provided with flat lobes of spring metal disposed parallel with each other and adapted to spring apart when said ball-head is forced into a position intermediate of said lobes, each of said lobes being provided with a semicircular flange disposed at an abrupt angle relatively thereto, said flanges being adapted to spring apart.

3. The combination of a rib, a stretcher provided with a ball-head to be connected with said rib, and a fastening connected with said rib and provided with flat spring-lobes of sheet metal having oppositely-disposed inwardly-projecting flanges of semicircular form for preventing the removal of said ball-head from said fastening.

4. The combination of a rib, a stretcher provided with a ball-head to be connected with said rib, and a fastening mounted upon said rib and provided with flat semicircular lobes of spring metal each having a semicircular flange integral therewith, said semicircular flanges being disposed oppositely to each other so as to partially encircle said ball-head.

5. The combination of a runner-sleeve provided with an annular flange, a spider slidably mounted upon said runner-sleeve and provided with a collar encircling the same, means for rendering said collar rigid relatively to said sleeve, and a stretcher provided with a ball-head, said ball-head being disposed intermediate of said annular flange and said runner-sleeve.

6. The combination of a rib, a flat member of spring metal bent upon itself so as to form two lobes parallel with each other, said lobes terminating in semicircular edges bent inwardly at a sharp angle and adapted to spring apart to admit a ball-head therebetween, and a longitudinal member provided with a ball to be inserted intermediate of said lobes and with a neck to be inserted intermediate of said semicircular edges.

7. The combination of a rib, a flat member of sheet metal bent upon itself so as to form two semicircular lobes disposed parallel to each other, said lobes terminating in semicircular edges bent abruptly inward at a right angle relatively thereto, and adapted to spring apart to admit a ball-head therebetween, and a stretcher provided with a ball intermediate of said lobes and with a neck to be inserted intermediate of said semicircular edges.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH C. WESTERFIELD.

Witnesses:
JNO. M. RITTER,
WALTON HARRISON.