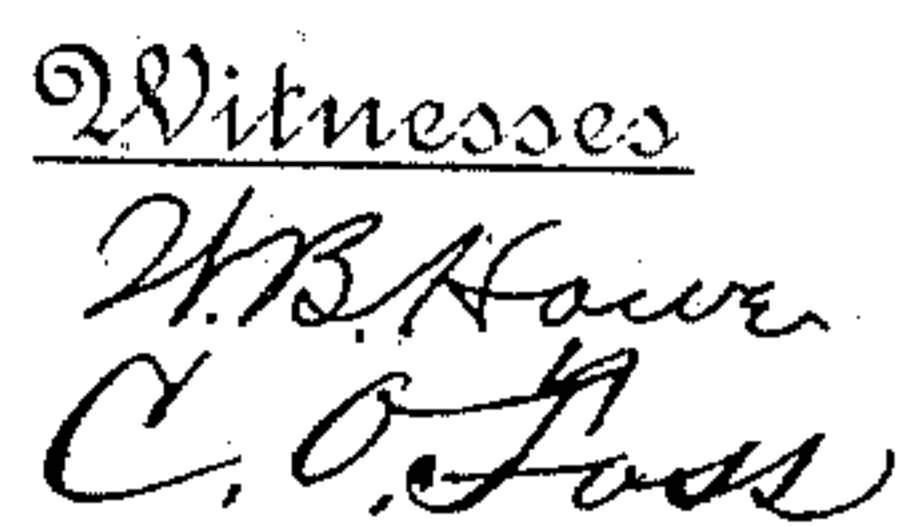


R. E. PETERS & W. T. GREEN.
UMBRELLA OR PARASOL.

Patented Oct. 15, 1889.



Inventor
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UNITED STATES PATENT OFFICE.

RICHARD E. PETERS AND WILLIAM T. GREEN, OF CONCORD, NEW HAMPSHIRE.

UMBRELLA OR PARASOL.

SPECIFICATION forming part of Letters Patent No. 412,894, dated October 15, 1889.

Application filed January 3, 1889. Serial No. 295,347. (No model.)

To all whom it may concern:

Be it known that we, RICHARD E. PETERS and WILLIAM T. GREEN, citizens of Great Britain, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Umbrellas or Parasols, of which the following is a specification.

Our invention relates to umbrellas or parasols, the objects being (in the manufacture of such articles) to dispense with the common pivot-connections or the wires by which the ribs are usually attached to the fixed cap and to the outer ends of the stretchers or braces, and by which said braces are connected with the runner, and to provide a neat and economical substitute therefor.

The invention will be readily understood by reference to the accompanying drawings, of which—

Figure 1 is a broken sectional elevation of an umbrella as when extended and embodying our improvements. Fig. 2 shows two enlarged views of connected sections of a rib and stretcher or brace. Fig. 3 shows two enlarged views of the lower part of a stretcher or brace. Fig. 4 is a sectional elevation of our improved fixed cap having a portion of two ribs and the carrying-stick in position. Fig. 5 is a broken elevation of our improved runner, the carrying-stick, and two of the stretchers or braces connected. Fig. 6 is a cross-sectional view showing the form we consider preferable for constructing either the ribs or the braces.

Similar reference-letters indicate corresponding parts.

The guide or carrying-stick A may be provided with the usual ferrule *a* and spring-support B and stop *b* for holding the runner in an elevated position, as shown.

Our improved method of connecting the ribs and braces with each other and with the fixed cap and runner involves the principle of the "ball-and-socket joint;" but it is not essential that the sockets should very closely fit the ball member of a joint when applied to umbrellas; hence we do not confine ourselves to any particular form of fixed cap or runner or their respective sockets for containing the ends of the ribs or braces. We

show a practical form of construction in the drawings for both, however.

The fixed cap C, for carrying the ends of the ribs M, has a flaring end or annular enlargement, preferably formed in a segment of a circle, and perforated with holes *c*, placed equidistant apart and in number corresponding with the number of the ribs M, the said ribs being introduced therein by means of the slots *c'*, formed in the flaring portion of the said cap C and connecting its edge with the holes *c*. Each rib M has a ball *m* at one end, and this is connected by means of a neck *m'* (which is somewhat smaller than said ball) with said rib. To set up this portion of an umbrella, the fixed cap C is first secured in its proper position upon the carrying-stick A by a pin *a'*, and after dropping the necks *m'* of the ribs M through the slots *c'* to the holes *c* of said fixed cap (the balls *m* being then on the inside) a cap D, having a flange *d*, (which partially covers the said slots,) is placed upon the said cap C in a manner to hold the said ribs in their proper position. The said cap-piece D may be constructed in a manner to be secured to the stick A, or a collar E may be pinned thereon, as at *a''*.

The runner F is formed with an annular bulging portion *f*, which may be semicircular in form or as shown in the drawings, and in the upper part of the part *f* are formed openings *f'* for carrying one end of the stretchers or braces N by means of the balls *n*, which are connected thereto by a slim neck *n'*, preferably formed rectangular, as shown best in Fig. 3—i. e., wider than it is thick. The openings *f'* of the runner are also rectangular in preference to any other form and made a loose fit for the said necks *n'* of the braces N, and to place one within the other the said runner must be detached from the carrying-stick A, when the necks *n'* of said braces N may be forced through the narrow slots *f''*, formed in the said runner F, connecting with the rectangular openings *f'*, and forced thence into the said openings, in which they can move as freely as required, the balls *n* being upon the inside of said runner.

The ribs M and braces N we prefer to make tubular, as shown in Fig. 6, which enables us to make a simple and economical connection

of the two in the following manner: The seam M' of each rib M is spread open or slotted at m^2 , said slot being wide enough to receive the neck n^3 , carrying the ball n^2 of each brace N, and the said ball n^2 is admitted to the rib by spreading the seam M' sufficiently for the purpose.

The spindle portion of the ball-joints may be soldered or otherwise secured to the ribs and braces, and so may the seams of each be soldered or brazed, if desired.

Having described our improvements, what we claim as new, and desire to secure by Letters Patent, is—

1. In an umbrella-frame comprising ball-and-socket connections for the ribs and their braces, the ribs and their fixed support, and braces and runner, the tubular ribs having at one end a ball-journal connected by a slim rectangular neck to said ribs, and a slot at the proper point for admitting the ball-jour-

nal of either of said braces to the interior of said tubular ribs.

2. An umbrella-frame comprising tubular ribs, each containing a slot m^2 and provided at one end with a ball-journal, suitable braces having at each end a slim rectangular neck carrying a ball-journal, a fixed cap having at one end an annular slotted enlargement for carrying one end of said ribs, and a cap or cover shutting part way over said slots, and a suitable runner formed in one piece having an annular enlargement and slots therein for carrying one end of said braces, all substantially for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD E. PETERS.
WILLIAM T. GREEN.

Witnesses:

J. B. THURSTON,
NATHANIEL E. MARTIN.