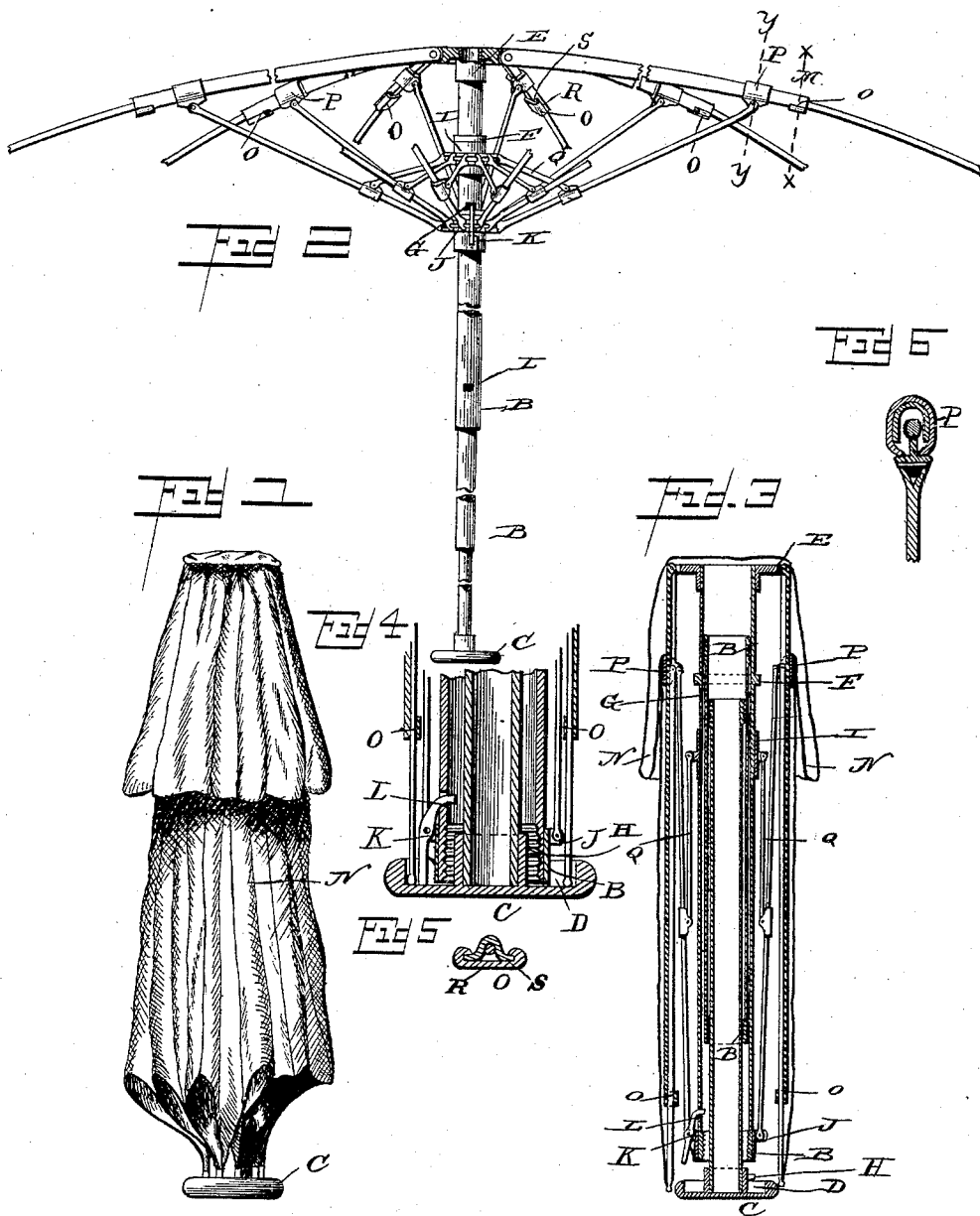


(No Model.)

F. BATZEL.
FOLDING UMBRELLA.

No. 474,467.

Patented May 10, 1892.



Witnesses

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FRANK BATZEL, OF RIVERSIDE, NEW JERSEY.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 474,467, dated May 10, 1892.

Application filed August 19, 1891. Serial No. 403,079. (No model.)

To all whom it may concern:

Be it known that I, FRANK BATZEL, a citizen of the United States, residing at Riverside, in the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in Umbrellas, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in umbrellas; and it consists in certain novel features, which will be hereinafter firstfully described, and then pointed out in the claims.

The object of my invention is to produce an umbrella which may be folded into a very compact form, so as to be conveniently carried in a coat-pocket. This object I accomplish by the use of the mechanism illustrated in the annexed drawings, in which—

Figure 1 is a view of the umbrella closed. Fig. 2 is a view of the device opened, the handle being shown in elevation and the cover or top in transverse section. Fig. 3 is a section taken longitudinally through the handle, showing the umbrella folded. Fig. 4 is a detail view on a larger scale, showing the lower end of the stick and the rib-retaining cup as they appear when the umbrella is folded. Fig. 5 is a detail sectional view on line *xx* of Fig. 2, and Fig. 6 is a similar view on the line *yy* of Fig. 1.

The handle consists of tubular members having their adjacent ends connected by screw-joints B and of lessening diameters, so that by disconnecting the joints the several members may be telescoped together and the umbrella thus folded into a very small compass. The lowermost member is provided at its outer or free end with a knob C, having an annular groove in its inner edge D, which is adapted to receive the ends of the ribs and thereby hold the same against the handle when the umbrella is closed. This knob may be provided with a lug H to engage the threads on the upper member and thereby fasten the umbrella in its closed position. At the upper end of the upper member I provide a disk E, to the edge of which the upper or inner ends of the ribs are pivoted, and near the said disk I form an annular shoulder F on the said member, against which the upper runner I impinges in the operation of the device. A

short distance below this shoulder I provide a recess G in the handle, the purpose of which will hereinafter appear. Two runners I J are provided and they are mounted on and adapted to slide upon the handle, as clearly shown. The lower runner carries a spring-latch K, which is adapted to engage the notch G to hold the umbrella opened, and also to engage the recess L in the lower end of the upper member of the handle to hold the device closed. The ribs M are formed in two sections, the outer section being adapted to slide upon the inner section, and the cover N is secured to the ribs at sleeves P and at the ends of the ribs in the usual manner, and may be of any desired material. The inner sections of the ribs are U-shaped in cross-section and have their inner ends pivoted to the disk E and their outer ends provided with the transverse guides O, through which the outer sections slide. The said outer sections are preferably cylindrical rods, which fit in the U-shaped inner sections and have their inner ends provided with sleeves P, which encircle the inner sections and have the outer ends of the lower braces or stretchers pivoted thereto. By this arrangement and construction the outer sections of the ribs are caused to move in a true line when the umbrella is being opened or closed, and are prevented from having any lateral movement and being thereby twisted. The guides O are formed by plates R, which are slipped on flanges S on the inner-rib sections after the outer sections have been placed in proper position. The lower braces or stretchers extend from the inner ends of the outer sections of the ribs to the lower runner and have their inner ends pivoted to the said runner. Supplemental braces or links Q are arranged between the upper runner and the stretchers and have their opposite ends pivoted, respectively, to the stretchers and the said runner.

The construction and arrangement of the several parts of my improved umbrella being thus made known, the operation of the same will, it is thought, be readily understood. When the umbrella is to be opened, the stretchers are drawn downward by hand, thus expanding the cover. The lower runner is then pushed upward until the spring-catch en-

gages the recess G, when the cover will be tightly stretched. The upper runner will move upward simultaneously with the lower runner and will impinge against the shoulder F, which will be thus caused to serve as a fulcrum, from which the links bear on the lower braces or stretchers to hold the same rigid, and thus prevent the umbrella being inverted by the wind. The members of the handle are then drawn outward and secured in their extended positions by causing the threads on their adjacent ends to engage, as will be readily understood. The operation of closing the umbrella is the reverse of that just described, the folding being completed by disconnecting the joints of the members of the handle and telescoping the same, as will be readily understood upon reference to the drawings.

The umbrella may be raised and lowered in the same manner as the ordinary umbrella in common use, if so desired.

From the foregoing description it will be seen that I have produced an umbrella which will be very light and which can be easily manipulated. When completely folded, it can be easily carried in a coat-pocket, and when opened will present ample protection against the elements.

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

1. In an umbrella, the ribs consisting of inner sections U-shaped in cross-section and provided with flanges at their outer ends, outer sections moving in the inner sections and provided at their inner ends with sleeves encircling the inner sections, and plates slipped on the flanges at the outer ends of the said inner sections.

2. The combination of the handle having the recesses G L, and an annular shoulder F about midway between the top notch and the recess G, the extensible ribs, the upper runner adapted to impinge against the shoulder F, the lower runner carrying a catch adapted to engage the recesses G L, the stretchers connecting the lower runner with the ribs, and the links connecting the upper runner with the stretchers at an intermediate point of the length of the same.

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

FRANK BATZEL.

Witnesses:

EDW. HAUGH,
WALTER W. CALMORE.