(No Model.)

J. M. HARMER.

FOLDING UMBRELLA.

No. 455,591. Patented July 7, 1891.

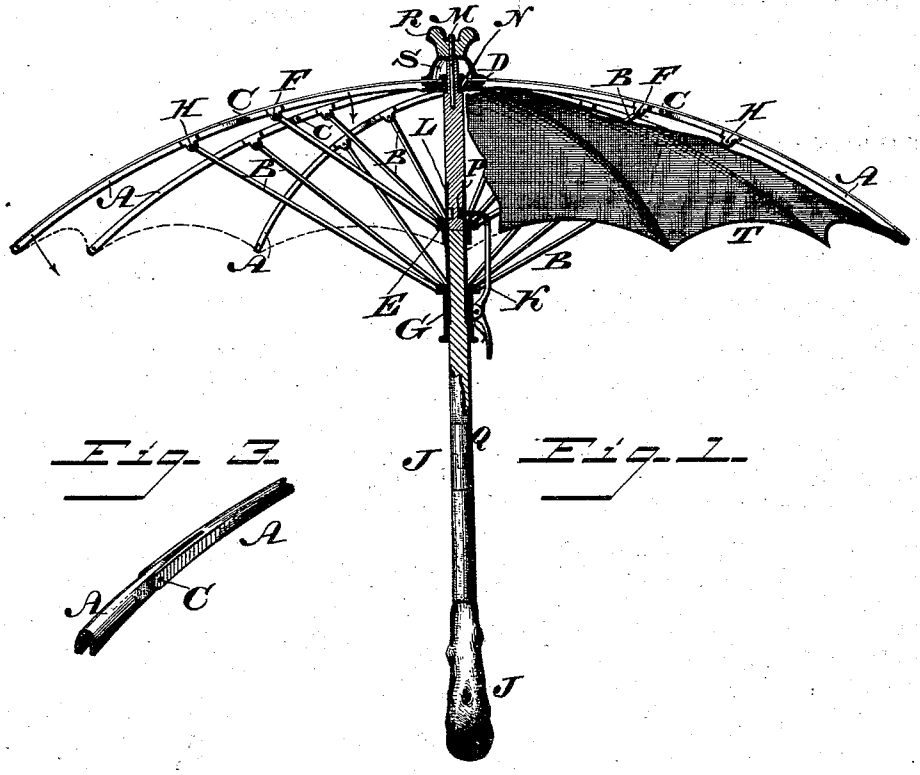
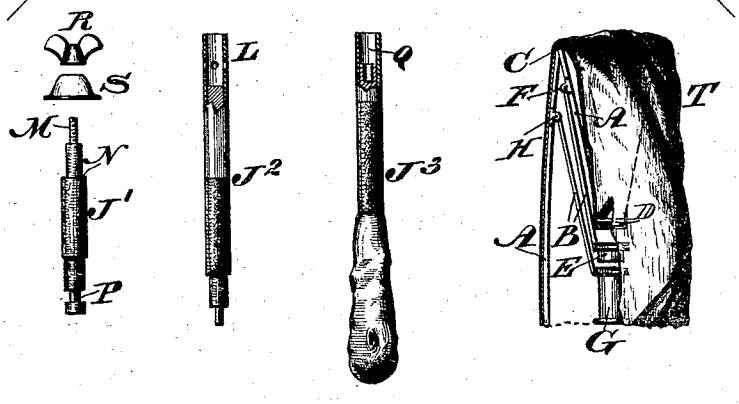


Fig. 3.

Fig. 1.

Fig. 2.



WITNESSES:

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JOSEPH M. HARMER, OF PHILADELPHIA, PENNSYLVANIA.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 455,591, dated July 7, 1891.

Application filed January 27, 1891. Serial No. 379,225. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. HARMER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Folding Umbrellas, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a folding umbrella or parasol formed of sectional ribs pivoted or hinged together and a set of stretchers for each section.

It also consists of a stick formed in sections adapted to be connected by the catch which locks the runners.

It also consists of a novel catch for locking the runners of the two sets of stretchers.

It also consists of a novel connection for the stick with the frame of the umbrella.

Figure 1 represents a partial side elevation and partial longitudinal section of a folding umbrella embodying my invention. Fig. 2 represents partial side elevations and partial longitudinal sections of the parts thereof detached. Fig. 3 represents a perspective view of one of the ribs on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the ribs of an umbrella, and B the stretchers thereof, said ribs being formed in jointed sections united by the pivots C, their upper ends being pivoted to the collar D. The stretchers are in two sets, one set being pivoted to the runner E and to the ribs A, as at F. The other set is pivoted to the runner G and to the ribs A, as at H, it being noticed that the connections F and H are on opposite sides of the joints C, and the runners are one above the other and both on the stick J. To the runner G is pivoted the catch K, which is sufficiently long to pass through the adjacent stretchers of the two sets thereof, its nose engaging with the upper side of the runner E and entering an opening in a sleeve L on the upper part of the stick J, it being noticed that the stick is formed in sections J' J^2 J^3, the collar L being on the upper end of the section J^2. The section J' has a screw-stem M and shoulder N on its upper end, and a neck P on its lower end, said neck entering the sleeve L and receiving the nose of the catch K, as will be seen in Fig. 1. The section J^3 is connected with the section J^2 by a sleeve Q, the latter receiving the lower end of said section J^2.

When the stick is in position, it passes through the collar D at the top of the frame, and the stem M is engaged by a thumb or other nut R, between which and the collar D is interposed a cap S, whereby when the nut is tightened, as the shoulder N of the stick abuts against the under side of said collar D, the stick and frame are firmly connected.

It will be seen that when the umbrella is open the sections of each rib are held bowed as one rib, owing to the connection of the two stretchers on opposite sides of the pivot or hinge thereof. The catch K on the runner G engages with the sleeve L and locks both runners G and E, the entrance of the nose of the catch through the sleeve L into the neck P locking the sections J' J^2 of the stick, all as has been stated, and as will be seen in Fig. 1.

In order to fold the umbrella, the catch K is released, thus unlocking the two runners. The nut R is unscrewed and the stick withdrawn from the runners. The top of the covering T and frame are now turned inwardly, the sections of the ribs closing on each other, owing to the pivots or hinges H and the stretchers being between the sections, and the two runners close together. The sections of the stick are separated, and they may be placed on the folded covering and frame and form a compact bundle suitable for packing, transportation, &c.

It is evident that by properly connecting the sections of the stick, opening the covering and frame, locating the stick, manipulating the several parts, and securing the stick to the collar D the umbrella is in condition to be opened and used.

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

1. An umbrella having ribs formed in sections pivoted or hinged together, so as to be folded, and stretchers connected to each and at opposite sides of the joints of said sections to hold the latter in operative position, substantially as described.

2. A folding umbrella having hinged sectional ribs, two sets of stretchers connected

with each rib on opposite sides of the hinge thereof, and a separate runner attached to each of said sets of stretchers, substantially as described.

3. In a folding umbrella, a stick having two runners thereon, a catch pivoted to one runner and having a nose detachably engaging both the other runner and stick, thus locking both runners, substantially as described.

4. In a folding umbrella, a stick formed in sections, in combination with a sleeve on one of the sections, a neck on the adjacent section entering said sleeve, and a catch for locking the runner entering said sleeve and neck, thus connecting the adjacent sections, substantially as described.

5. In an umbrella, a stick having a section J′, with a screw-stem M and a shoulder N at the inner termination of the said screw-stem, a collar D, to which the ribs are secured, resting on said shoulder N, a hollow cap mounted over the stem M and having a flange bearing on the collar D, and a screw-nut engaging said stem M and bearing on the cap, said parts being combined substantially as described.

6. A folding umbrella consisting of sectional ribs, two sets of stretchers, two runners, a removable stick formed in sections, fastenings for said stick and the frame, and a catch common to the two runners and connecting adjacent sections of the stick, said parts being combined substantially as described.

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Witnesses:
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