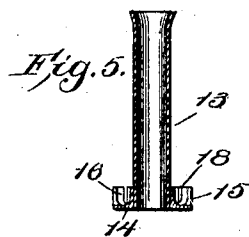
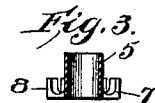
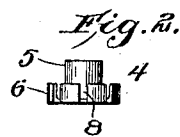
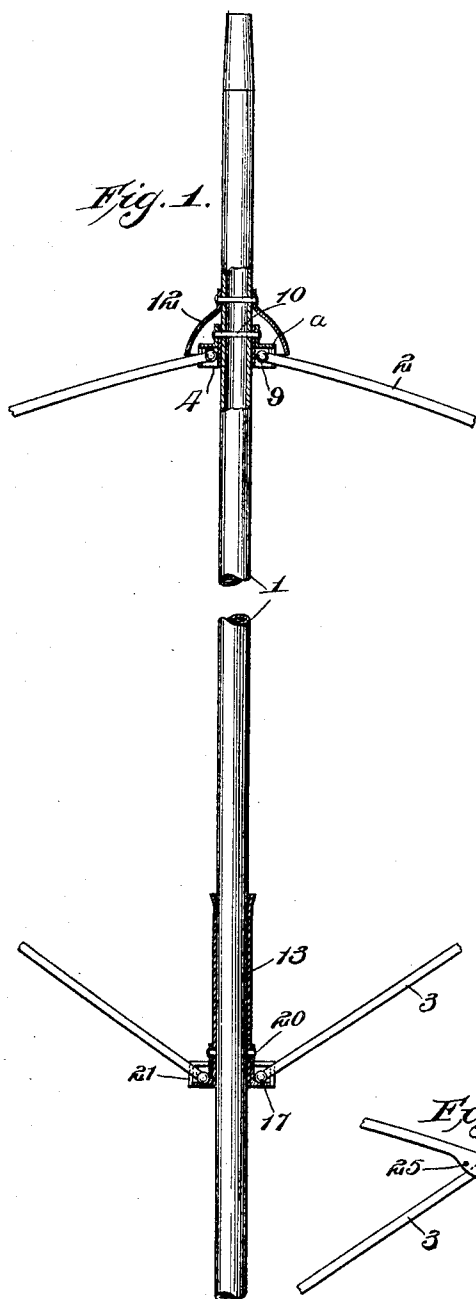


No. 887,493.

PATENTED MAY 12, 1908.

W. A. MOORE.
UMBRELLA.

APPLICATION FILED MAR. 27, 1906.



Witnesses

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UMBRELLA.

No. 887,493.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM A. MOORE, a citizen of the United States, residing at Chambersburg, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Umbrellas, of which the following is a specification.

My invention has relation to improvements in umbrellas, and it consists in the construction and arrangement of parts, as will be hereinafter described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a sectional view of an umbrella frame and stick embodying the present invention. Fig. 2 is a side elevation of the top notch. Fig. 3 is a sectional elevation of the same. Fig. 4 is a side elevation of the top notch cap or rib retainer. Fig. 5 is a sectional elevation of the runner. Fig. 6 is a side elevation of the bottom notch cap or brace retainer. Fig. 7 is a detail view of the connection between the ribs and braces. Fig. 8 is a plan view of the same.

Referring to the drawings, 1 designates the stick or staff of an umbrella; 2, the ribs; and 3, the braces thereof.

In carrying out the present invention, I employ a top notch 4 consisting of a sleeve portion 5 which encircles the stick and is riveted or otherwise secured thereto, the said top notch further comprising a projecting annular rim 6 having an annular upwardly opening seat or cavity 7 with notches or slots 8 leading thereto.

By means of the construction described, a plurality of sockets are formed for the reception of a corresponding number of balls 9 on the inner ends of the ribs 2, the balls fitting within the sockets, as shown in Fig. 1, and being held therein by means of a top notch cap or retainer *a* shown in Fig. 4, comprising a sleeve portion 9^a which encircles the stick and is permanently secured thereto, the sleeve 9 also embracing the sleeve portion 5 of the top notch, and both the top notch and the retainer or cap being firmly secured to the stick by the same rivet or other fastener 10, as shown in Fig. 1. The cap or retainer shown in Fig. 4 also comprises a rim 11 which is notched to register with the notches in the rim 6, the rims 6 and 11 embracing each other so as to retain the balls 9 in place and prevent their accidental escape in folding and unfolding the umbrella.

12 designates the usual flexible cap or pro-

jector which is secured to the stick outside of the cover and ribs.

The runner comprises a long sleeve 13, the latter being provided at its lower end with a circumferential flange 14 extending upward from the outer edge of which is a rim 15 which leaves a groove or annular pocket 16 for the reception of balls 17 on the inner ends of the braces 3, as shown in Fig. 1, the rim 15 being notched as shown at 18, to admit the ribs 3. In connection with the runner, I employ a bottom notch cap or brace retainer embodying a sleeve portion 19 which fits around the runner sleeve 13 and is riveted or otherwise secured thereto, as shown at 20, said bottom cap or retainer comprising a rim 21 which embraces the notched rim of the runner and is itself provided with notches 22 which register with the notches of the rim 15, the rims 15 and 21 telescoping one within the other and serving to prevent the escape of the balls 17.

Each rib 2 is provided at the point where the brace 3 connects therewith with an expanded socket portion 23 which receives a ball 24 on the outer end of the brace. After the ball 24 is inserted in the socket 23, the socket is pressed inward so as to embrace the ball 24 and the opposite sides of the expanded portion of the rib are then secured by means of rivets 25 or other equivalents, whereby the ball is prevented from becoming displaced from the socket and the ribs are limited in their movements.

From the foregoing description, it will be seen that the ribs are connected to the stick by a ball and socket joint; also, that the braces are connected to the runner and also to the ribs by ball and socket joints at the points named. This does away with the usual wiring and the necessity of forming holes in the extremities of the delicate parts of the frame of an umbrella, which materially weakens said parts at the points named and impairs the life and durability of the umbrella as a whole. The ball and socket joints also reduce the friction to a minimum and render the opening and closing of the umbrella easier. The construction described also greatly reduces the liability of breaking the joints between the braces and webs and pushing the outer ends of the braces through the cover.

I claim:

An umbrella comprising the stick, a top notch having an upwardly projecting sleeve

mounted on the stick and provided with an upwardly projecting rim arranged below the upper portion of the sleeve to provide a cavity between the sleeve and rim, said rim having a series of surrounding notches therein which communicate with the cavity, ribs having their inner ends inserted in the notches and provided with balls therewith to operate within the cavity, a retainer having a sleeve projecting upwardly therefrom which serves to be fitted over the sleeve of the top notch, said retainer being provided with a depend-

ing rim which contacts with the rim of the top notch and having notches which register with the notches of the top notch, and a single pin inserted through the sleeves of the top notch and retainer and also through said stick, substantially as specified. 15

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

WILLIAM A. MOORE.

Witnesses:

H. B. McNULTY,
P. B. THOMAS.