

No. 710,328.

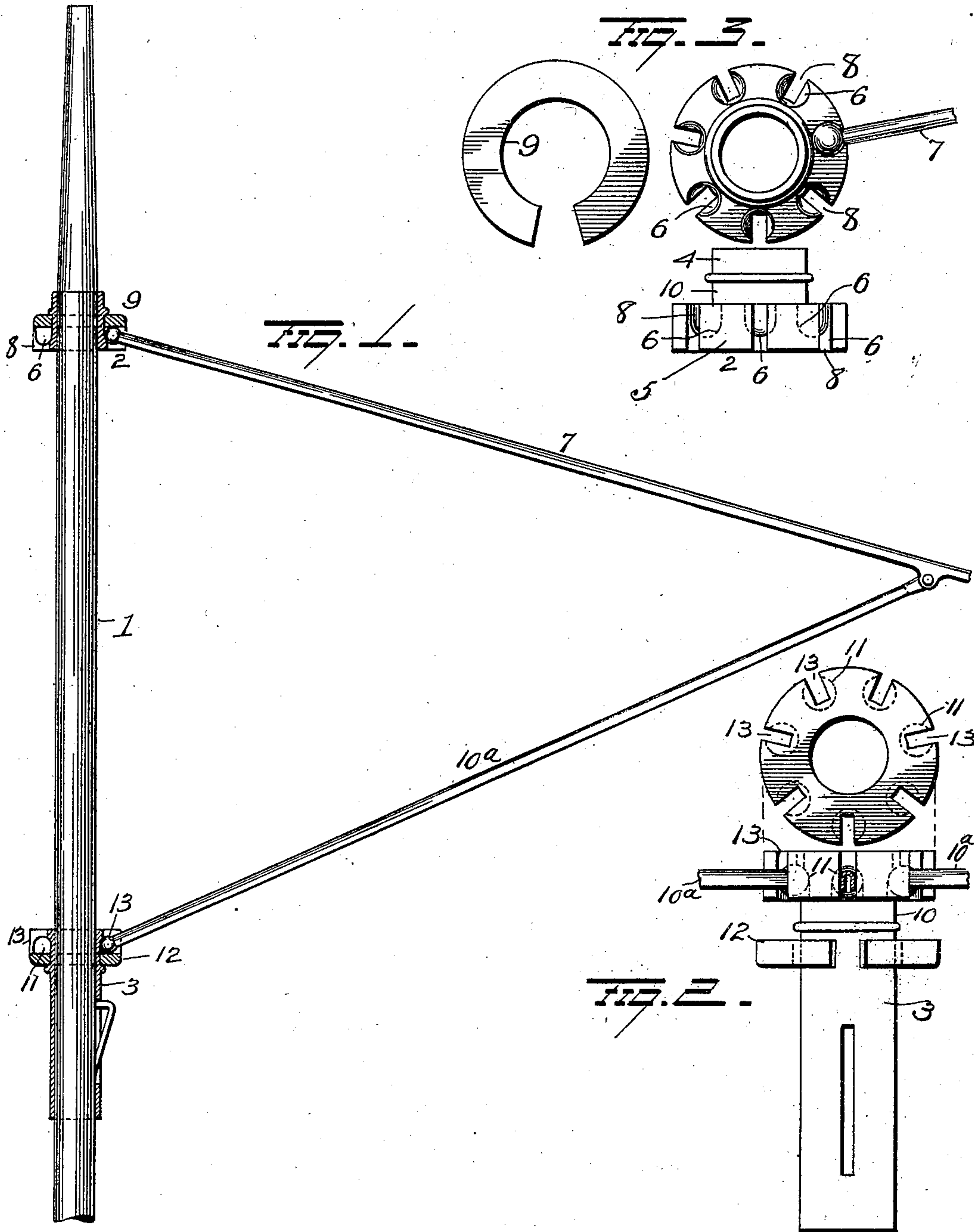
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C. MACMILLAN.

UMBRELLA RIB AND STRETCHER JOINT.

(Application filed Dec. 17, 1901.)

(No Model.)



WITNESSES
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UNITED STATES PATENT OFFICE.

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UMBRELLA RIB AND STRETCHER-JOINT.

SPECIFICATION forming part of Letters Patent No. 710,328, dated September 30, 1902.

Application filed December 17, 1901. Serial No. 86,282. (No model.)

To all whom it may concern:

Be it known that I, CLYDE MACMILLAN, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Umbrellas and Parasols; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in umbrellas, and more particularly to the crowns and runners therefor, the object of the invention being to so construct and arrange the parts of an umbrella that the removal of a broken rib or brace may be readily and quickly accomplished and a new one inserted without the aid of special tools or injury to the parts. A further object is to reduce the cost of manufacture without in any wise impairing the strength and durability of the parts.

With these ends in view my invention consists in certain novel features of construction and combinations and arrangements of parts, as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a broken detail sectional view of the umbrella stick and frame, showing in detail the construction of the runner and crown-piece. Fig. 2 is a view of the runner, the locking-ring thereof being represented detached; and Fig. 3 is a similar view of the crown-piece, the locking-ring thereof also being shown detached.

1 represents an umbrella-stick; 2, the crown-piece or notch, which is rigidly secured on said stick near its upper end, and 3 is the runner, the latter being mounted to slide on the stick 1 and provided with a notch at its upper end. The crown-piece 2 is preferably made of a single piece of suitable material, and it consists of a ferrule 4, having an outwardly-projecting annular flange 5 at its lower end. The top of this flange 5 is provided with an annular row of sockets 6 for the reception of the ball ends of the ribs or braces 7, the said sockets being in open communication

with the slits 8, formed in the periphery and lower face of the flange 5, thus permitting the ribs or braces 7 to be folded to a vertical position against the stick 1. The ball ends of the braces or ribs are securely locked within their respective sockets by a split ring 9, the slot formed by the splitting of the ring being preferably radial rather than tangential. This split ring 9 normally rests in an annular groove 10, formed in the ferrule portion 4 of crown 2, the position of said groove being so located with respect to the upper face of flange 5 that the bottom of the ring 9 will rest upon the upper face of said flange 6 and effectually close the sockets 6, formed therein, thus confining the ball ends of ribs or braces 7 within said sockets.

The runner 3 is similar in construction to crown-piece 2, except that the ferrule of the latter is much shorter than the ferrule of the former and instead of being fixed to stick 1 is adapted to slide thereon in the usual manner. The ball ends of the lower series of ribs or braces 10^a are locked in sockets 11 by the split ring 12 and are adapted to move in the slits 13, as heretofore explained.

With the construction above described it will be seen that a broken rib or ribs may be easily and quickly removed from the umbrella-frame and a new one inserted by unskilled persons, it only being simply necessary to open the slit ring to enlarge the radial slot sufficiently to permit of the passage of a ball at the end of rib or ferrule from the crown or runner, as the case may be. The ball of a new rib can be inserted through the radial slot of the separated ring and made to enter the socket from which the broken rib or brace has been removed. The ring can then be sprung or pressed to its locked position and the umbrella-cover secured to the new ribs in the usual manner. It is not necessary to completely remove the ring from the sleeve or ferrule, but merely to open it, to permit the passage of the ball of a rib, as above explained. This simple method of fastening the ball ends of the ribs in position not only tends to lessen the cost of manufacture, but also imparts strength and durability

to the entire structure without in any wise making the parts cumbersome or heavy. Again, it does away with all sharp or angular edges which tend to cut the fabric.

5 It is evident that changes in the construction and relative arrangement of the several parts might be made without avoiding my invention, and hence I would have it understood that I do not restrict myself to the particular construction and arrangement of parts
10 shown and described; but,

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

15 1. In an umbrella, the combination with a notch having sockets therein and ribs having enlarged heads, of an expansible split ring having an aperture normally narrower than a rib-head.

20 2. In an umbrella, the combination with a sleeve or ferrule, an annular flange thereon having a series of sockets, ribs having heads to enter said sockets, said flange also having

slots for the passage of said ribs or braces, the sleeve or ferrule having a groove adjacent to said flange, and an expansible split
25 ring disposed in said groove and having an aperture normally narrower than a rib-head.

3. In an umbrella, the combination with a sleeve, and an annular flange on said sleeve, 30 said flange having a series of independent sockets and having slots communicating with said sockets, of a series of ribs or braces having heads mounted independently in said sockets, and an expansible split ring, said 35 ring mounted on the sleeve and normally enclosing the heads of the ribs or braces in the sockets in said flange and having an aperture normally narrower than a rib-head.

In testimony whereof I have signed this 40 specification in the presence of two subscribing witnesses.

CLYDE MACMILLAN.

Witnesses:

MARGARET EASTON,
A. L. SCHALL.