T. HOWARD.
COUPLING FOR UMBRELLA RIBS.
APPLICATION FILED AUG. 2, 1916.

1,264,799. Patented Apr. 30, 1918.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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To all whom it may concern:

Be it known that I, THOMAS HOWARD, a citizen of the United States, residing at Marshfield, in the county of Coos, State of Oregon, have invented a new and useful Coupling for Umbrella-Ribs; 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.

This invention relates to an improved coupling device for a plurality of umbrella ribs and the umbrella stick, whereby the umbrella ribs may be disconnected and new ones replaced with greater ease than by means of a circular wire.

Another object of the invention is to provide ball joints between the ribs and a collar on the umbrella stick, there being a sleeve slidable on the stick to hold the balls in place, in combination with a bayonet slot and pin connection with the stick to hold the sleeve in place.

In practical fields, the details of construction may necessitate alterations, falling within the scope of what is claimed.

The invention comprises further features and combination of parts, as hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Fig. 1 is a view in side elevation of a portion of an umbrella stick showing a rib connecting collar thereon, and the means for connecting said ribs to the collar.

Fig. 2 is a vertical sectional view.

Fig. 3 is a sectional view on line 3—3 of Fig. 2.

Fig. 4 is a bottom plan view of the collar.

Fig. 5 is a view in side elevation of the sleeve and a portion of the umbrella stick.

Fig. 6 is a sectional view on line 6—6 of Fig. 5.

Fig. 7 is a view similar to Fig. 6 showing the position of the pin before it engages the horizontal portion of the bayonet slot.

Fig. 8 is a perspective view of the coupling.

Referring more especially to the drawings, 1 designates an umbrella stick, to which, by means of a transverse pin 2, a collar 3 is secured. The outer portion of this collar is provided with a downwardly extending flange 4 L-shaped in cross section. This flange 4 is provided with a plurality of slots 5, which receive the ribs 6 of the umbrella frame, so that the balls 7 on the ends of the 55 ribs will engage the inner face of said L-shaped flange. It is to be noted that the balls rest upon the inwardly and under-extending part 8 of said flange, thereby permitting the ribs to oscillate up and down. 60 Mounted upon the umbrella stick is a sleeve 9, the wall of which is provided with a bayonet slot 10, the upper edge 11 of the horizontal portion of which slot is inclined, the purpose of which will appear later. Extending laterally of the umbrella stick is a pin or lug 12, which plays in the bayonet slot, when the sleeve is moved vertically and revolvably. The sleeve 9 is provided with an extension 13, which is larger in diameter than the diameter of the sleeve, and fills the space between the inner portions of the balls 7 and the circumference of the umbrella stick, thereby holding the balls 7 in place.

Adjacent the extension 13 is a flange 14, which underlies the under face of the under extending portion of the L-shaped flange 4. It is to be noted that by imparting a revolvable movement to the sleeve in the direction of the arrow a in Fig. 1, the sleeve may be so positioned that the pin or lug 12 will be in a position to enter the vertical portion of the bayonet slot, in which case the sleeve may be moved downwardly, thereby withdrawing the extension 13 from between the inner portions of the balls and the circumference of the stick, so that the ribs may be detached. However, when moving the sleeve upwardly, the extension 13 will enter between the inner portions of the balls and the circumference of the stick, after which a revolvable movement may be imparted to the sleeve in the direction of the arrow b in Fig. 7, so that the inclined edge 11 of the horizontal portion of the bayonet slot will cam upon the lug or pin, thereby forcing the flange 14 against the under extending portion of the L-shaped flange.

The invention having been set forth, what is claimed as new and useful is:

In combination with an umbrella stick, a collar fixed on said stick, said collar having an outwardly and radially extending flange, the outer portion of said flange having a depending flange L-shaped in cross section, the lower part of the L extending radially inwardly toward the stick and having its inner edge spaced from said stick, said
L-shaped flange having a plurality of radial slots, a plurality of ribs engaging said slots and having balls on their inner ends engaging the inner face of the L-shaped flange, and means fitted on the stick and telescoping between the inner edge of the L of said flange and engaging the inner parts of the balls to hold the same in place, said means having an element to bear against the L to force the L portions of the flange between the slots against the balls and hold them in place.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses:

THOMAS HOWARD.

Witnesses:

HERBERT MURPHY,

JOHN D. GOSS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."