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FERRULE CONSTRUCTION FOR UMBRELLA COVERS.

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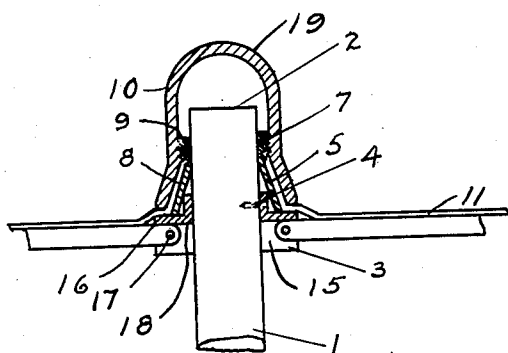


FIG. 1.

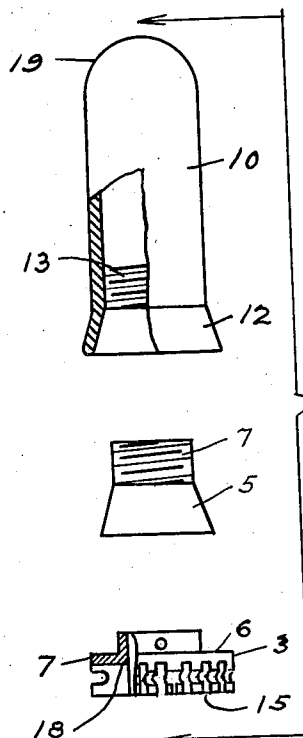


FIG. 2.

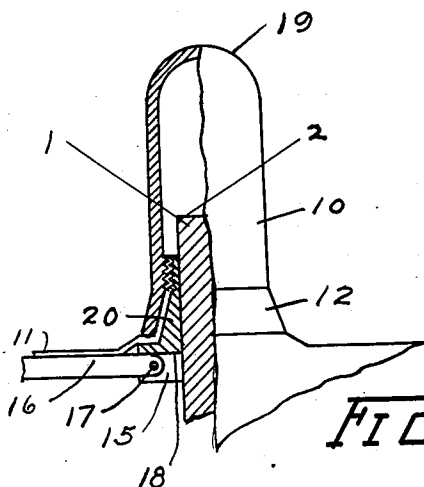


FIG. 6.

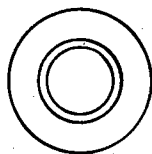


FIG. 3.



FIG. 4.

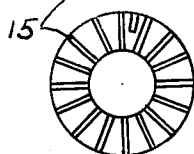


FIG. 5.

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FERRULE CONSTRUCTION FOR UMBRELLA COVERS

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3 Claims. (Cl. 135—34)

This invention refers to umbrellas and more particularly to arrangements for fastening the covering of same to the portion provided near the point of the umbrella stick and usually termed the top portion of the umbrella. The purpose of the invention is to eliminate the use of thread for securing the cloth in position on the stem, and use in place thereof, an inexpensive mechanical connection that does the work satisfactorily for normal usage. It is an improvement of the arrangement described in the Patent Number 1,134,121 dated April 6, 1915, of the United States; obtained by the same applicant. A main object of this invention is to provide an attachment of this kind that will hold the cloth to the stick in a uniform and regular manner, and in such a manner that the opening or closing of the umbrella will not tend to loosen the connection or allow it to become detached. Another object is to have the attachment mechanically operated in such a manner as to make it tight and irremovable under usual severe stresses of the conditions that the umbrella may be put under. A further object is to reduce the possibility of the umbrella becoming turned inside out, in a wind storm.

Other objects will become apparent as the invention is more fully set forth.

The construction outlined in the patent referred to, provides for the tightly pressing of the covering cloth between the inner and outer ferrules, and employing the conventional notch ring underneath and close to them and avoiding the use of sewing for holding the covering in place. As the ribs in the notch ring were opened, the contact between the lower edges of the ferrules tended to push them away from the ring. The covering being attached to the ribs was put under tension and in time tended to become loose from the ferrules from its constant pull thereon. The ferrules also, were frequently lost off the umbrella stick as they become loosened by this action. This invention fundamentally employs a different and improved type of notch ring, which is termed a rib-hinge-ring herein to distinguish it. This ring has slots for hinging the ribs cut partly into the ring so that the ribs will be limited in the opening movement when the covering is raised. The conventional type of notch ring is cut entirely through and does not restrain the travel of the ribs itself. The tension of the covering is used in this instance to limit the opening movement of the ribs. This old-notch construction has a great deal to do with the ease with which ordinary umbrellas will

turn inside-out in a wind storm. This invention prevents this undesirable action, as far as the strength of the ribs will permit. The rib-hinge-ring has an extension piece provided on it. It is used to lock the ferrules in place, and keep the ribs from acting against them. This makes the ring stronger and holds the top of the umbrella more rigidly in position. The ferrules are preferably arranged to hold the covering more securely in place, than the previous design by utilizing a screw threading function in addition to the press fit and lock used before.

In the drawing which illustrates an example of a device exemplifying this invention:

Figure 1 is an elevation of a device embodying this invention partly in section;

Figure 2 is a side elevation of the outer ferrule, inner ferrule and rib-hinge-ring separated from each other and ready for assembly;

Figure 3 is a plan view of the rib-hinge ring;

Figure 4 is a side elevation of Figure 3;

Figure 5 is a bottom view of Figure 3, and

Figure 6 is a side elevation with parts broken away of a modified form of rib-hinge ring and outer ferrule.

Similar reference characters refer to similar parts throughout the drawing.

The construction outlined in the drawing shows the portion of the umbrella structure involved in this invention primarily. This portion centers around the point end of the stick, where the cloth covering converges and the rib members hinge. The stick 1 is of conventional form and its point end portion 2, is close to the location selected for the sliding-up and mounting of a rib-hinge-ring 3. The latter is secured to the stick by a stud 4 passing through it into the stick. This locates the ring permanently on the stick after assembling. The inner cylindrical ferrule 5 is pushed down to the upper cylindrical portion 6 of the rib-hinge-ring from over the end 2 and rests on the ring flange 27. This ferrule is friction tight on the stick and is therefore held firmly in place. The ferrule 5 is formed with a slight screw-thread 7 and a depression 8 for locking purposes. The apex 9 of the umbrella covering 11 is forced against the external surface of the inner ferrule, while an outer cylindrical ferrule 10 is pushed down on top of the covering to catch and bind it between the ferrules. The outer ferrule has a screw-thread portion at 13, corresponding to that on the ferrule 5 and also a boss 12 adapted to lock in the depression 8 when it has rotatably advanced sufficiently on the covering and ferrule 5. This

screw-threaded or helical form in the ferrules serves to bind the covering more firmly and divert the stress brought about, when the umbrella is opened and the covering stretched. The twist given to the cloth or material of the covering by the helical form of the ferrules serves to increase its resistance to removal from between the ferrules.

The rib-hinge-ring is preferably constructed as indicated with slots 15 cut partly into the ring flange 27 so as to provide a spacing between the rib-hinge portion 16 and the place of contact of the bottom edges of the ferrules on the upper face of the flange. The movement of the rib on its pivot 17 does not bring the rib into contact with the ferrules, because of this spacing. At the same time, the flat edge of the rib strikes the flat surface 18 under the flange and prevents its travel beyond the horizontal plane. The tension of the covering also reinforces this action. This does not interfere with the ribs returning to their closed and vertical position when the umbrella is shut up. The outer ferrule is shown with its bottom 19 closed-in in order to eliminate the usual metal end piece provided. It also prevents the dust and grit from getting into the ferrules inside. The ribs are wired into the ring in the conventional way used for holding them.

In the modified form of construction shown in Figure 6 the inner ferrule and rib-hinge-ring unit 20 are formed together. This form reduces the number of parts and increases the stability of the attachment. It is economical to install on the umbrella stick.

While but two forms of the invention have been shown in the drawing and described in the specifications, it is not desired to limit this application for patent to such specific constructions or in any other way otherwise than limited by the scope thereof, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. In combination with an umbrella stick, of a covering fastener comprising a ring flange rigidly secured to the stick at a predetermined location thereon, a rib-hinge-ring slidably mounted on the stick and adapted to hold umbrella ribs hinged thereto, the ribs being restricted in their

opening movement by said flange when adjacent thereto, an inner ferrule mounted on the stick and resting flatly against the said flange and an outer ferrule mountable over the inner ferrule adapted to bind the umbrella covering therebetween and against the flange so as to secure same in place mechanically without sewing.

2. In combination with an umbrella stick of a covering fastener comprising a ring flange secured to the stick, a rib-hinge-ring with ribs arranged to butt against the said flange, said flange being adapted to restrict the opening movement of the ribs beyond a predetermined point, an inner ferrule with a slanting wall having a cylindrical section imposed thereon and grooved, exteriorly mounted on the stick above the flange and resting thereon, an outer ferrule having a portion adapted to coact with said cylindrical section and mount thereon, said outer ferrule contacting with the flange at approximately right angles and being adapted to receive and bind the central portion of an umbrella covering mechanically in between its lower portion and the flange and inner ferrule without sewing and without being loosened by the opening and operation of the ribs.

3. The combination with an umbrella stick of a cover fastener comprising a ring flange made up of horizontal and vertical rings arranged to securely engage the stick, a rib-hinge-ring mounted on the stick below the flange and disposed against the same and provided with ribs hinged thereto, the hinging movement of the ribs being limited by their contacting the said flange when in open position, an inner ferrule on the stick above the said flange so as to fit thereover and having its lower portion protected thereby from movement by the ribs, said ferrule being threaded externally on a predetermined portion thereof, an outer ferrule adapted to fit over the inner ferrule and bind the cover of an umbrella mounted on the ribs therebetween, said outer ferrule being internally threaded to coact with the threads of the inner ferrule for holding the cover additionally secure therebetween, the bottom portion of the outer ferrule being disposed close and in opposing relation to the flange so as to bind the cover between the flange and outer ferrule and be protected from displacement by the said ribs.

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