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Patented June 4, 1901.

F. G. CHANDLER.
FOLDING UMBRELLA.

(Application filed Feb. 26, 1900.)

(No Model.)

Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK G. CHANDLER, OF HORNELLSVILLE, NEW YORK.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 675,554, dated June 4, 1901.

Application filed February 26, 1900. Serial No. 6,591. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. CHANDLER, a citizen of the United States, residing at Hornellsville, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Folding Umbrellas; 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 folding umbrellas, parasols, and the like capable of being reduced to a small package for convenience of carrying and storing in a trunk or satchel.

The objects of the invention are to strengthen and reinforce the cover and prevent wear thereof by the articulating joints of the rib-sections and their stiffening-sleeves, to facilitate the operation of folding and unfolding, and to support the loose portions of the reinforcing-strip between the ribs.

The invention consists of the novel features, details of construction, and combination of the parts which hereinafter will be more fully disclosed and finally claimed, and for this purpose and also to acquire a knowledge of the merits of the invention and the structural details of the means whereby the results are attained reference is to be had to the appended description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view of an umbrella embodying the invention, the same being open and inverted and having a portion broken away. Fig. 2 is a sectional detail showing the relation of the parts when the umbrella is folded. Fig. 3 is a detail view of the joint between the sections of a rib when extended, showing the relative disposition of the cover and the reinforcing and elastic strips.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The umbrella in its general construction comprises a sectional stick 23, folding frame,

consisting of braces 4 and ribs composed of sections pivotally connected, and a cover 5 secured to the ribs and notch in any approved manner.

The ribs are composed of inner sections 14 and outer sections 15, having their opposing ends pivoted in any convenient and substantial manner, and, as shown, said ends are flattened and pierced and are overlapped and receive pivot-fastenings 16. A sleeve or tube 17 is slidably mounted upon the section 14 of each of the ribs and can be moved so as to project upon opposite sides of the pivot or joint and stiffen the latter when the sections are caused to aline. In order to prevent displacement of the sleeve or tube 17 when moved to a position to stiffen the joint, a short tube 18 is secured to the outer section 15 of each of the ribs a short distance from the joint and the end of the sleeve 17 is adapted to telescope therewith, the friction between the two being sufficient to prevent accidental displacement of the sleeve 17 when serving to stiffen the joint. The end portion of the tube 18 facing the joint is slightly tapering, so as to enter the adjacent end of the sleeve 17. The sections 14 and 15 are clothed for a short distance on opposite sides of the joint, preferably by means of a string or textile strand wound thereabout, the purpose of this clothing or covering 19 being to prevent rattling of the part cooperating with the joint. In order to prevent the wearing away of the covering 19 by frequent movement of the sleeve or tube 17, a protecting-tube 20 is interposed between the parts 17 and 19, and the sleeve 17 is adapted to slide thereon. The covering 17 also provides a filling and enables the ribs to be constructed of channel-wire or solid wire having any cross-sectional outline. The braces 4 have pivotal connection with the inner portions of the outer rib-sections 15.

In order to facilitate the folding and unfolding of the umbrella when the joints of the ribs are limbered by moving the sleeves 17 back upon the sections 14, it has been found necessary to connect the sections 14 of the ribs at a point intermediate of their ends by means of an elastic strip, web, or tape 24, which is positively attached to each of the sections 14 at the point of crossing. This elastic connection 24 is in the form of a band

and normally is of less circumferential extent than the united distance between the ribs when the frame is extended. When the umbrella is open, the connection 24 is
5 under tension, and when folding or closing the umbrella said connection 24 contracts and causes the sections of the ribs to fold inward and prevents entanglement of the cover 5 with either the ribs or braces. The greatest
10 advantage of the elastic connection 24 is experienced when unfolding the umbrella, since it serves when the umbrella is partly opened or unfolded to hold the sections 14 inward by a yielding action and properly
15 spaces them and causes the sections 15 to turn upon the outer ends of the braces 4, whereby a movement of the runner upon the stick in the proper direction will cause an even spread of the cover without requiring any especial
20 care on the part of the person manipulating the device. The cover is reinforced at a point opposite the joints by means of a textile strip or band 25, which is secured at its edges to the ribs and cover at its inner and outer edges.
25 The purpose of this band or strip 25 is to prevent the sleeves or tubes 17 from wearing away the cover and the joints from pressing therethrough when the umbrella is folded. The elastic strip or band 24 overlaps the in-

ner or upper edge of the reinforcing-strip 25, 30 as shown most clearly in the drawings, and prevents its sagging and getting in the way when opening and closing the umbrella.

Having thus described the invention, what is claimed as new is—

In a folding umbrella, the combination with 35 the frame composed of sectional ribs hinged about midway of their ends, sleeves for stiffening the joints, and a cover attached to the frame, of a reinforcing-strip opposite the 40 joints and between the cover and frame and attached at its edges to the ribs and cover at the points of its crossing the said ribs, the edge portions of the strip between the ribs being loose, and an elastic strip overlapping the 45 upper edge of the reinforcing-strip to support the loose portions and confine them between itself and the cover, said elastic strip being attached to the upper sections of the ribs and normally under tension when the 50 umbrella is open, substantially as described.

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

FREDERICK G. CHANDLER. [L. S.]

Witnesses:

GLADYS L. THOMPSON,
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