

T. M. SURA.

UMBRELLA.

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970,663.

Patented Sept. 20, 1910.

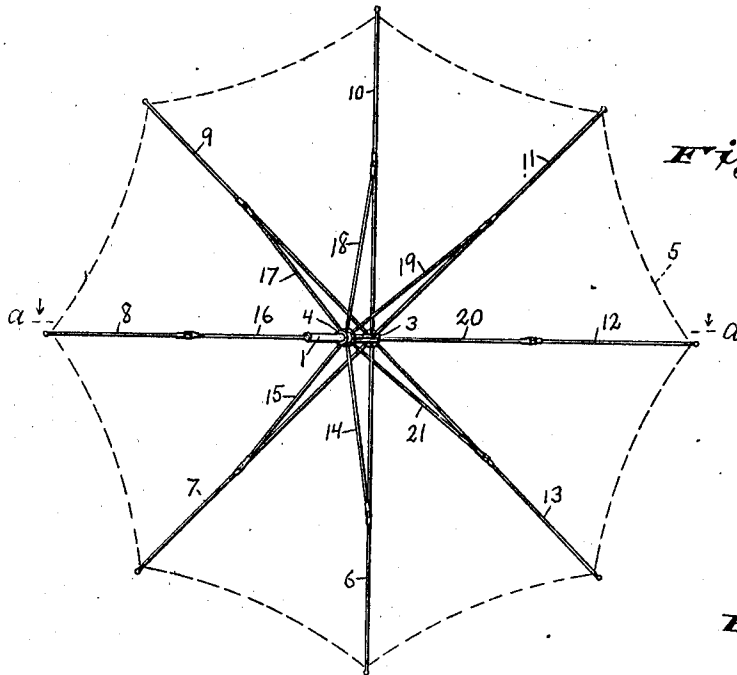


Fig. 1.

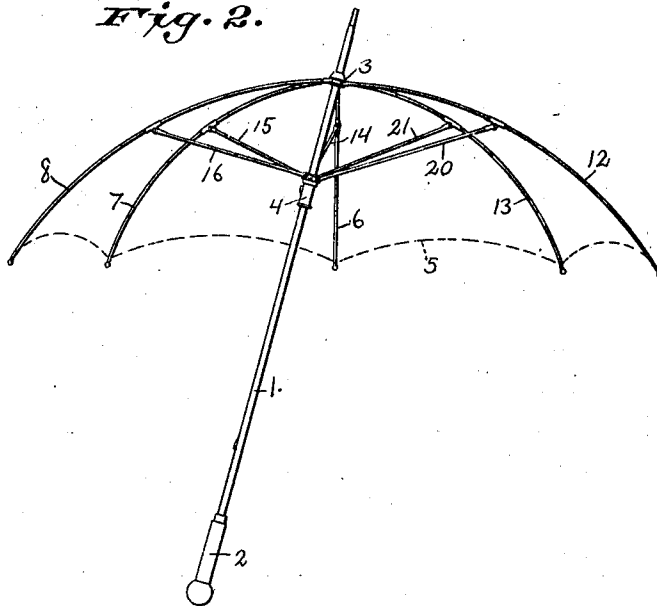


Fig. 2.

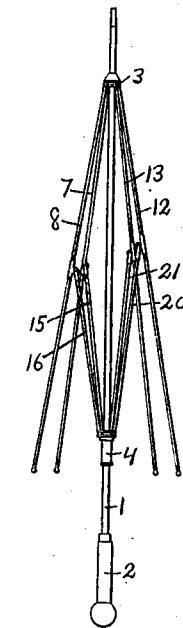


Fig. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

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UMBRELLA.

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To all whom it may concern:

Be it known that I, THOMAS M. SURA, a citizen of the United States, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Umbrellas, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof.

10 This invention relates to umbrellas and the object of the invention is to provide an umbrella which will have the appearance and compactness of an ordinary umbrella when closed, but which, when open, will 15 have more of its canopy back of the hand grip than in front thereof. Many people hold an ordinary umbrella in such a position that water dripping from its rear edge drops upon their backs, and this invention provides an umbrella which, while having a 20 canopy no larger than an ordinary umbrella, has an increased canopy surface back of the hand grip. It should be understood that the expression "back of the hand grip" 25 is used only for convenience of description, as, of course, the increased canopy surface may be held in front or at the side of a person if desired.

30 Referring to the drawings which accompany this specification and form a part thereof, on which drawings the same reference characters are used to designate the same elements wherever they may appear in each of the several views and which drawings 35 illustrate an umbrella embodying this invention, Figure 1 is a plan view of an inverted umbrella, only a part of the handle being shown, and the canopy being indicated by dotted lines; Fig. 2 is a sectional 40 elevation taken on the line *a-a* of Fig. 1 looking in the direction indicated by the arrows; Fig. 3 is an elevation of the umbrella, the canopy and some of the ribs and stretcher ribs being omitted for clearness of illustration. 45

Referring to the drawings, the numeral 1 designates a handle, 2 a hand grip, 3 a rib thimble, 4 a slidable thimble, 5 a canopy and 6, 7, 8, 9, 10, 11, 12 and 13 ribs of equal 50 length, all these parts being of any suitable form and construction and differing in no particulars from the equivalent parts found in ordinary umbrellas.

55 The reference numerals 14, 15, 16, 17, 18, 19, 20 and 21 designate stretcher ribs which are secured to the several ribs and the slid-

able thimble 4 as in ordinary umbrellas, but these stretcher ribs 14, 15, 16, 17, 18, 19, 20 and 21 are different from the stretcher ribs of ordinary umbrellas in a most important 60 particular, to-wit: they are not all of the same length and they are not connected with the ribs 6, 7, 8, 9, 10, 11, 12 and 13 at points on said ribs equally distant from the rib thimble 3 as is the case in ordinary um- 65 brellas, and herein resides the gist of this invention whereby an eccentrically disposed canopy and rib structure can be closed and folded as compactly as an ordinary umbrella. 70

Referring to Fig. 3 of the drawings, it will be readily seen that the umbrella can be folded as compactly as any ordinary umbrella because the distance of the slidable thimble 4 from the rib thimble 3, when 75 measured along the ribs to the points of connection of the stretcher ribs and then to the slidable thimble 4 along said stretcher ribs, is the same for each rib and its stretcher rib. For example, the rib 12 is shown as 80 the back rib and the rib 8 as the front rib, and stretcher rib 20 connected with rib 12 is just as much longer than stretcher rib 16 connected with rib 8 as the point of connection of stretcher rib 20 with rib 12 is higher 85 up on rib 12 than is the point of connection of stretcher rib 16 with rib 8. Any number of ribs may of course, be employed, but for convenience of description and illustration an umbrella having eight ribs has been 90 selected, as this is a convenient number of ribs to be demonstrated. Selecting the rib 12 for the back rib, its opposite or rib 8 will be the front rib and the difference between the length of the stretcher ribs 20 and 16 95 connected to said ribs respectively will determine the eccentricity or increase of canopy surface back of the hand grip. This eccentricity may be considered as due either to pushing the canopy back with reference 100 to the handle or as due to pushing the handle forward with respect to the canopy. The expression "eccentricity" is used advisedly because to obtain accurately the proper length for each of the intermediate 105 stretcher ribs an ellipse may be constructed with a major axis, the length of the longest stretcher rib added to the length of the shortest stretcher rib with the foci distant from the ends of the axis the length of the 110 shortest stretcher rib. Then by drawing straight lines from one of the foci to the

curve spaced from one another at equal angles and in number equal to the number of ribs, the umbrella is to contain, then the length of each line will be the proper length for the stretcher rib corresponding to that line, and with a symmetrical arrangement of eight ribs and eight stretcher ribs as shown by the drawings, it will be found that stretcher ribs 15 and 17 are of equal length, 10 stretcher ribs 14 and 18 are of equal length and stretcher ribs 19 and 21 are of equal length. The lengths of the intermediate stretcher ribs can be obtained approximately by dividing the excess of length of the longest stretcher rib over the shortest into 15 four parts (in the case of an eight rib umbrella as illustrated and described) and making stretcher ribs 15 and 17 longer than the shortest by one of the four parts, stretcher ribs 14 and 18 longer than the shortest by 20 two of those parts; and stretcher ribs 19 and 21 longer than the shortest by three of those parts. While the difference in length between the longest and the shortest stretcher ribs may be varied, a good difference in 25 actual practice is found to be about one and three-quarters of an inch ($1\frac{3}{4}$ inch). Having made the stretcher ribs of the proper lengths and connected them with the slidable thimble or runner 4, the ribs which have been attached to the thimble 3 are laid parallel with the stretcher ribs and the ends of the stretcher ribs indicate the points on the ribs where they should be connected with 30 the ribs.

The term "umbrella" is used in this speci-

fication and the claims as a generic term to include umbrellas, parasols and all equivalent structures.

What is claimed is:

1. The combination in an umbrella of a handle, a plurality of ribs of equal length secured to said handle, a single thimble slidably secured upon said handle and stretcher ribs connected to said ribs and thimble, 45 some of said stretcher ribs being longer than others.

2. The combination in an umbrella of a handle, a plurality of ribs of equal length secured thereto, a single slidable thimble 50 and stretcher ribs connected to said ribs and thimble, some of said stretcher ribs being longer than others, the longer stretcher ribs being secured to the ribs as much higher up on the ribs as they are longer than the other 55 stretcher ribs.

3. The combination in an umbrella of a handle provided with a hand grip, a plurality of ribs secured to said handle, a canopy, a single thimble slidably secured upon said 60 handle, and stretcher ribs connected to said ribs and thimble, some of said stretcher ribs being longer than others, whereby when open more of the canopy will be back of the hand grip. 65

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

THOMAS M. SURA.

Witnesses:

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