

1,023,211.

UNITED STATES PATENT OFFICE.

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FOLDING UMBRELLA.

1,023,211.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK A. LUNDQUIST, a citizen of the United States, at present residing in New York, in the State of New York, have invented a new and useful Improvement in Folding Umbrellas, of which the following is a specification.

My invention relates to certain improvements in folding umbrellas, and the objects thereof are to provide a strong, durable sectional stick that will be securely held together when in an extended position, and one in which a continuous runway is provided for the runner, and also one that may be opened and folded even by the most inexperienced person.

A further object of my invention is to provide a simple locking means for holding the stick in an extended position, and also act as a guard to prevent the entire disengagement of the stick when the latter is being folded.

A still further object of my invention is to provide a strong and durable hinge joint for the folding rib.

With these and other objects in view, the invention consists in the novel features of construction, combination and arrangement of parts hereinafter fully described and pointed out in the claim.

In the drawing forming a part of this specification: Figure 1 is a sectional elevation of my improved umbrella in its raised position, only one rib section being shown. Fig. 2 is a longitudinal sectional elevation of the stick. Fig. 3 is a detail view of the stick showing the position of the parts when the ferrule member is drawn down within the outer sleeve. Fig. 4 is an elevation of the stick in a folded position, in this view only the ribs on each side of the stick are shown, and the cover is removed. Fig. 5 is a detail plan view illustrating the construction of the hinged joint of the rib, and Fig. 6 is a detail plan view of the tubular sleeve for locking the hinged joint showing the manner of connecting the same to the stretcher bar.

In carrying out my invention I construct a stick of the inner section A and an outer section B, the inner section being preferably of tubular metal and comprises a ferrule member A', an intermediate section A² and a handle member A³, the said intermediate section being pivotally connected at each

end to the ferrule and handle member, respectively, by links A⁴ and A⁵. The outer section B is in the form of a sleeve, the bore of which is of such a size to snugly accommodate the inner section and permit of its free movement thereon. The sleeve B is also made in sections and comprises the outer member B' which surrounds the ferrule member for a greater portion of its length and extends over the link A⁴, and surrounds the outer end of the intermediate section A² and an inner sleeve B² which surrounds the remaining portion of the intermediate section A², and extends over the link A⁵ which connects the intermediate section with the handle-member. A short sleeve section C is rigidly connected to the handle section A³ and forms a shoulder against which the sleeve member B² engages when the stick is extended. The sleeve section also facilitates connection of the grip handle D and preferably extends down into the latter, but it may be made of a shorter length to engage the end of the grip handle, and the latter made to connect with the handle member proper of the inner section, should it be found desirable.

In order to hold the stick extended as shown in Figs. 1 and 2 of the drawings, I provide a ferrule member with a spring catch E which engages the outer end of the sleeve member B'. Near the opposite end of the ferrule member is mounted a spring catch E' which works in a slot G and provides a catch for the runner H operating upon the stick. The upward movement of the runner being limited by a lug G', struck up from the upper end of the slot G, which is so spaced in respect to the catch E' that the runner will be allowed to have a slight movement between the catch and lug.

By reference to Figs. 1 and 2 of the drawing, it will be seen when a stick constructed as described is extended, the outer end of the sleeve member B' will engage the catch E and its inner end will engage with the inner sleeve member whose opposite end engages the shoulder or short sleeve section C. This arrangement completely covers the links A⁴ and A⁵, thereby preventing the collapse or accidental folding of the stick, and also provides a smooth continuous runway for the runner H, which enables the umbrella to be opened or closed with perfect ease.

To fold the umbrella, it is only necessary to push the catch E inwardly and draw the outer ferrule member within the sleeve B' and by grasping and pulling upon the grip handle, the ferrule member will be drawn into the sleeve B so that the link A⁴ will be uncovered as shown in Fig. 3 and then by sliding the inner sleeve member B² upon the intermediate section A², the link A⁵ will be uncovered, thus permitting the stick to be folded to practically one-third of its length when extended.

By reference to Fig. 3, it will also be noted that when the ferrule member is drawn down within the sleeve member B', the catch E' will slide down in the slot G and engage the inner end thereof, so as to prevent the entire disengagement of the different parts. This arrangement is for the purpose of preventing the accidental turning of the ferrule member within the sleeve member into such a position that the stick could not be folded.

Securely held to and adjacent the outer end of the sleeve member B' is a top notch I to which is connected the inner section J' of the folding rib J and to the runner H is connected the inner end of the stretcher bar K, whose outer end is provided with a tubular sleeve L which slides upon the rib-sections and which completely covers the hinged joint between the sections J' and J² when the umbrella is opened.

In Fig. 5 of the drawing I show a special construction of hinge joint for the rib sections and by referring thereto it will be seen that the end of the inner section J' is brought together and apertured in which is pivotally mounted a pivot pin J³ carried by eyes J⁴ formed on the outer end of fingers J⁵, the inner ends of which are twisted together and secured within the groove of the outer section J² by crimping the edges of the rib over the same. This construction of connecting the sections of the ribs together is very strong, durable and exceedingly simple and cheap.

The tubular sleeve L used for locking the sections of the ribs together is split longitudinally as shown in Fig. 6 of the drawing and is cut away to form a spring tongue L' which bears against the hinged joint of the sections of the rib, and holds the same in a rigid position. A portion of the sleeve is also bent inwardly, as shown at L² adapted

to engage the end of the inner section and hold the sleeve in its proper position by frictional contact therewith.

Slidably mounted on the section C adjacent the handle D is a sleeve M the movement of which is limited by a pin M' extending through the section C, said sleeve being provided with an annular socket adapted to fit over the outer ends of the rib when the umbrella is closed in the ordinary manner, so that the same will be held firmly in a closed position, and it will be seen that by providing the umbrella with this sleeve the runner can be moved upwardly and downwardly on the stick in the ordinary manner and the umbrella lock held closed. This is to enable the umbrella to be used as an ordinary umbrella when it is not desired to fold the same.

From the foregoing description it will be seen that I have provided a simple, strong and durable construction of stick and also an exceedingly strong hinge joint for the rib section. It may be stated, however, that in opening the frame of the umbrella preparatory to raising it, the stick portion is first adjusted into longitudinal alinement and by grasping the outer member B', and pushing the grip handle, the ferrule member will be projected beyond the outer member B' and the inner sleeve member will be pushed into position by the short sleeve C, and when the catch E passes the outer member B' the stick will be adjusted and locked in its extended position. It will thus be seen this operation is exceedingly simple, and may be accomplished by the most inexperienced person.

What I claim is:

A folding umbrella having ribs formed of two sections pivotally connected together by a hinge joint, a longitudinally split sleeve slidably mounted on the outer section of each rib for inclosing said hinge joint, a stretcher bar pivotally connected to the inner end of said sleeve, said sleeve being cut away to form a central circumferentially arranged spring tongue, adapted to engage the hinge joint of the sections, said sleeve having oppositely disposed inwardly projecting portions at its ends for engaging the edges of the rib sections.

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Witnesses:

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