

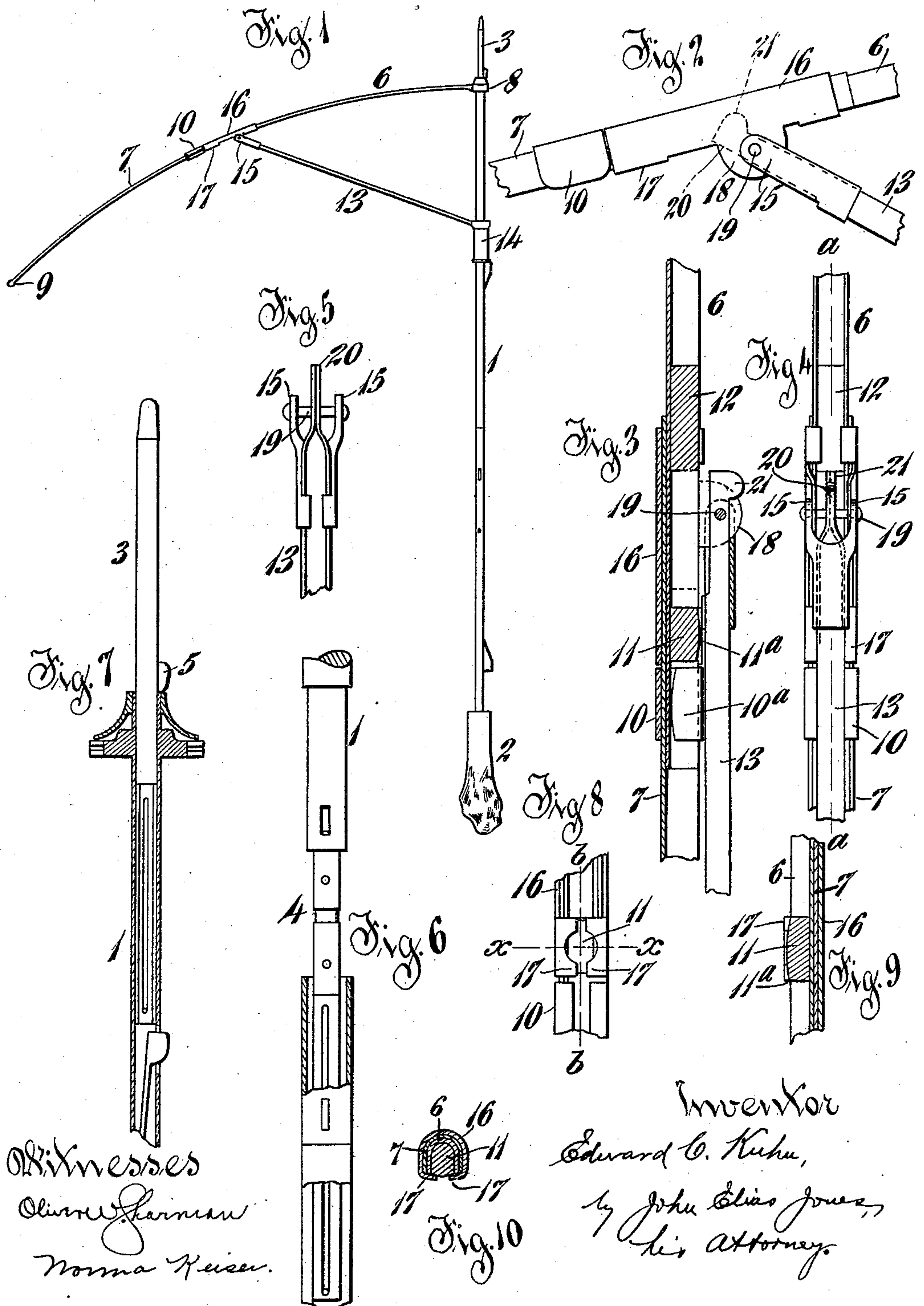
E. C. KUHN.

UMBRELLA.

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934,444.

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UNITED STATES PATENT OFFICE.

EDWARD C. KUHN, OF CINCINNATI, OHIO.

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To all whom it may concern:

Be it known that I, EDWARD C. KUHN, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Umbrellas, of which the following is a specification.

This invention relates to foldable umbrellas, or, in speaking with greater particularity, to telescopic ribs for special use in connection with foldable umbrellas that are capable of being converted into reduced compass for insertion in compartments such as are provided in trunks, suit-cases or like traveling and companion outfits, or where space is limited.

The object of the invention is to provide a simple device in which a two-section telescopic rib is adapted to be slidably extended and positively held in open or strained position when the umbrella is in use and readily adapted to be withdrawn from extended position for conversion into limited or reduced compass.

These objects are attained by the device illustrated in the accompanying sheet of drawings, in which—

Figure 1 is an elevation showing my improvement in using position; Fig. 2, a fragmentary elevation of my improvement on a larger scale than that seen in Fig. 1, in fact, larger than in actual use; Fig. 3, a longitudinal, fragmentary section of my invention (on line *a, a*, Fig. 4,) showing the two members of the telescopic rib and the stay-rod in position ready for either the telescopic operation of the rib for folding the umbrella, or ready for the operation of sliding the runner along the umbrella rod and raising or distending the cover; Fig. 4, an elevation of Fig. 3 looking from the right side thereof; Fig. 5, a fragmentary elevation of the inner or pivot end of the stay-rod, taken on its channeled side; Fig. 6, a fragmentary sectional elevation of the umbrella rod, showing it as a foldable one and as broken off both about midlength and at the handle end thereof; Fig. 7, a fragmentary, sectional elevation, showing the outer or tip end of the umbrella rod, including a disclosure of the spring-actuated device used in connection with the longitudinally-extended or telescopic tip; Fig. 8, a fragmentary elevation showing parts of the two telescopic sections of the rib and, also, show-

ing the inner jaw portion of the carrier-sleeve of the stay-rod, such jaw portion being in engagement with the outwardly-extending block at the lower end of the upper rib-member; Fig. 9, a vertical section taken on the dotted-line *b, b*, of Fig. 8; and Fig. 10, a cross-section taken on the dotted-line *x, x* of Fig. 8, to more clearly show the outwardly-extending block at the lower end of the upper rib member and its frictional-engagement with the said jaws on the carrier-sleeve of the stay-rod.

In these views, 1 indicates, generally speaking, the umbrella rod having the customary handle or grip 2 and the tip 3, said rod being preferably of a foldable nature as shown at 4, and said tip being preferably of a telescopic nature, as provided by the spring-nose 5, (as best seen in Figs. 6 and 7). The foldable rod and tip features are both desirable and somewhat essential in producing an umbrella capable of reduction in lengthwise compass, but I do not desire herein to limit myself to any particular form of foldable handle or tip that may vary from the forms of both devices seen in Figs. 6 and 7 of the drawings. Neither will I go into any description in detail of the foldable elements of said rod and tip herein, except to say that those features are reserved for a separate future application.

The special feature of the invention herein is connected with the rib and stay-rod, said rib being made up of two telescopic sections 6 and 7, section 6 being the upper or inner one and section 7 being the lower or outer one and said section 7 telescoping or sliding endwise over said section 6. The inner or upper end of the section 6 is pivotally attached, as customary, to the notched ring 8 at the upper end of the umbrella rod and the customary tip 9 is provided at the outer or lower end of the section 7.

10 indicates a split band or clip forming a guide-connection for the outer end of the upper section 6. This band or clip is passed around the lower section 7 and has its inner ends 10^a, 10^a bent into rigid contact with the channeled outer end of the upper section 6 and a block 11 is rigidly secured within the channel of the upper section 6 adjacent said clip ends 10^a, and the outer edge of this block extends slightly beyond the plane of the rib-section 6, as shown at 11^a, the purpose of which will be presently hereinafter

described. A stop-block comprising an abutment 12 is provided in the channel of the rib-section 6 a short distance upward from the block 11 and has its outer face flush with the channeled edges of said rib-section 6, the purpose of which abutment will also be hereinafter described.

13 indicates the customary brace or stay-rod used as a stretcher in distending the main rib composed of the sections 6 and 7. The inner end of the brace is pivotally connected as customary to the runner 14 and its outer end is provided with a pair of spaced arms or extensions 15 that have suitable aligned eyes or openings therein.

16 indicates a carrier-sleeve rigidly secured to the upper or inner end of the lower rib-section 7 and split longitudinally on its inner side that laps over the channeled edges of the telescoping rib-sections 6 and 7. The inwardly-turned edges of the split portion of the carrier-sleeve are slightly spaced apart and form jaws 17, 17 that are preferably resilient and that are best shown in Fig. 8. These jaws 17, 17 are inserted for frictional-engagement with the outwardly-extending portion 11^a of the block 11 when the latter is brought under the spring-jaws in the act of extending the rib-sections 6 and 7 for use in the raised position of the umbrella cover. Said frictional-engagement of the block 11 with the jaws 17 is best shown in Figs. 8, 9 and 10 and is important in connection with the operation of stretching the rib and cover. Lugs or ears 18 are provided on the two adjacent edges of the split portion of the carrier-sleeve 16 and are duly spaced apart, a transverse pin 19 being provided in said lugs and engaging the eyes in the outer fork ends or arms 15 of the stay-rod. Said transverse pin 19 is duly riveted at its opposite ends, as best shown in Fig. 4, and forms the shaft on which the stay-rod is pivotally connected to the traveling or sliding lower rib-member 7.

20 indicates an outwardly-extending arm at the outer end of the stay-rod. This arm 20 projects longitudinally from the channeled portion of the stay or stretcher, parallel to the fork-ends 15 thereof, as best seen in Fig. 5, and the pivot-pin 19 passes through a hole pierced in the outer portion of said arm 20. It will be seen, in Fig. 5 especially, that the arm 20 projects beyond the outer ends of the forks 15 of the stay-rod and a lateral-arm 21 projects from said outwardly-extended end of the arm 20, as best seen in Fig. 3. When the two sections 6 and 7 of the rib are in extended or stretched position, with the stay-rod in the position seen in Fig. 1, the said arm 20 and its lateral-arm 21 extend into the channel of the upper rib-section 6 and form an obstruction against which the stop-block or abutment 12 contacts to thereby prevent the sections 6 and 7

of the rib sliding endwise. They also prevent such sections 6 and 7 sliding endwise until the runner 14 has been brought downward along the umbrella rod 1 to its lowermost position and thereby bringing the stay-rod and the lower or outer rib-member 7 parallel to each other, at which time said lower rib-member 7 can be slid endwise over the rib-section 6 for the closed and folded position of the umbrella.

In the operation of the device, for unfolding and then raising the umbrella for use, the said lower rib-member 7 is drawn outward or lengthwise along the rib-member 6 until the outwardly-extending block 11 is brought into frictional-engagement with the spring-jaws 17. The runner is now slid along the umbrella-rod upwardly so as to force the rib outwardly and upwardly into distended position. While the stretching or distension of the rib is progressing, the frictional-engagement of the outwardly-extending block 11 with the spring-jaws 17 provides a temporary hold for the two sections of the rib and prevents their telescoping action during the entire movement of the stay-rod, both to and from bracing position, and, when the stay-rod has come into full bracing position, then the longitudinal extension 20 effectually prevents the telescoping of the two sections of the rib, as the abutment 12 in the upper section cannot now be passed in an attempt to force the lower rib-member along the upper rib-member.

It will be understood that it is not absolutely necessary to have the lateral-arm 21 at the end of the extension-arm 20 of the stay-rod or brace, for the reason that the engagement of the extension-arm can be effected with the abutment or stop-block 12 without it, but said lateral-arm is useful in preventing lateral motion of the stay-rod or brace and relieves the pivot 19 of torsional strain.

It will be seen, in the operation of my device, that the lower rib-member telescopes along the upper rib-member, the latter being longitudinally stationary.

I claim:

1. A telescoping rib for umbrellas comprising an upper rib member, a lower rib member telescoping lengthwise within said upper rib-member, a carrier-sleeve rigidly secured to the upper or inner end of the lower rib-member, a stay-rod or brace pivotally-connected at one end to said carrier-sleeve, an extension-arm provided at the outer end of said stay-rod and engaging the channel of the upper rib-member when the two rib-members are in extended position, an outwardly-extending channel block secured in the outer end of said upper rib-member and projecting slightly beyond the plane of the rib-member, spring-jaws formed on said carrier-sleeve and adapted for engagement

with said outwardly-extended block and an abutment or stop-block mounted in the channel of said upper rib-member and adapted for engagement with said extension-arm on the stay-rod or brace when the two rib-members are in extended position.

2. A telescoping rib for umbrellas comprising an upper rib-member, a lower rib-member telescoping lengthwise within said upper rib-member, a carrier-sleeve rigidly secured to the upper or inner end of the lower rib-member, a stay-rod or brace pivotally-connected at one end to said carrier-sleeve, an extension-arm provided at the outer end of said stay-rod or brace and having a lateral extension engaging the channel

of the upper rib-member when the two rib-members are in extended position, an outwardly-extending channel-block secured in the outer end of said upper rib-member, spring-jaws on said carrier-sleeve adapted for engagement with said outwardly-extended channel-block and an abutment or stop-block arranged in the channel of said upper rib-member and adapted for engagement with the extension-arm and its lateral-arm on the stay-rod when the two rib-members are in extended position.

EDWARD C. KUHN.

Witnesses:

JOHN ELIAS JONES,
NORMA KEISER.