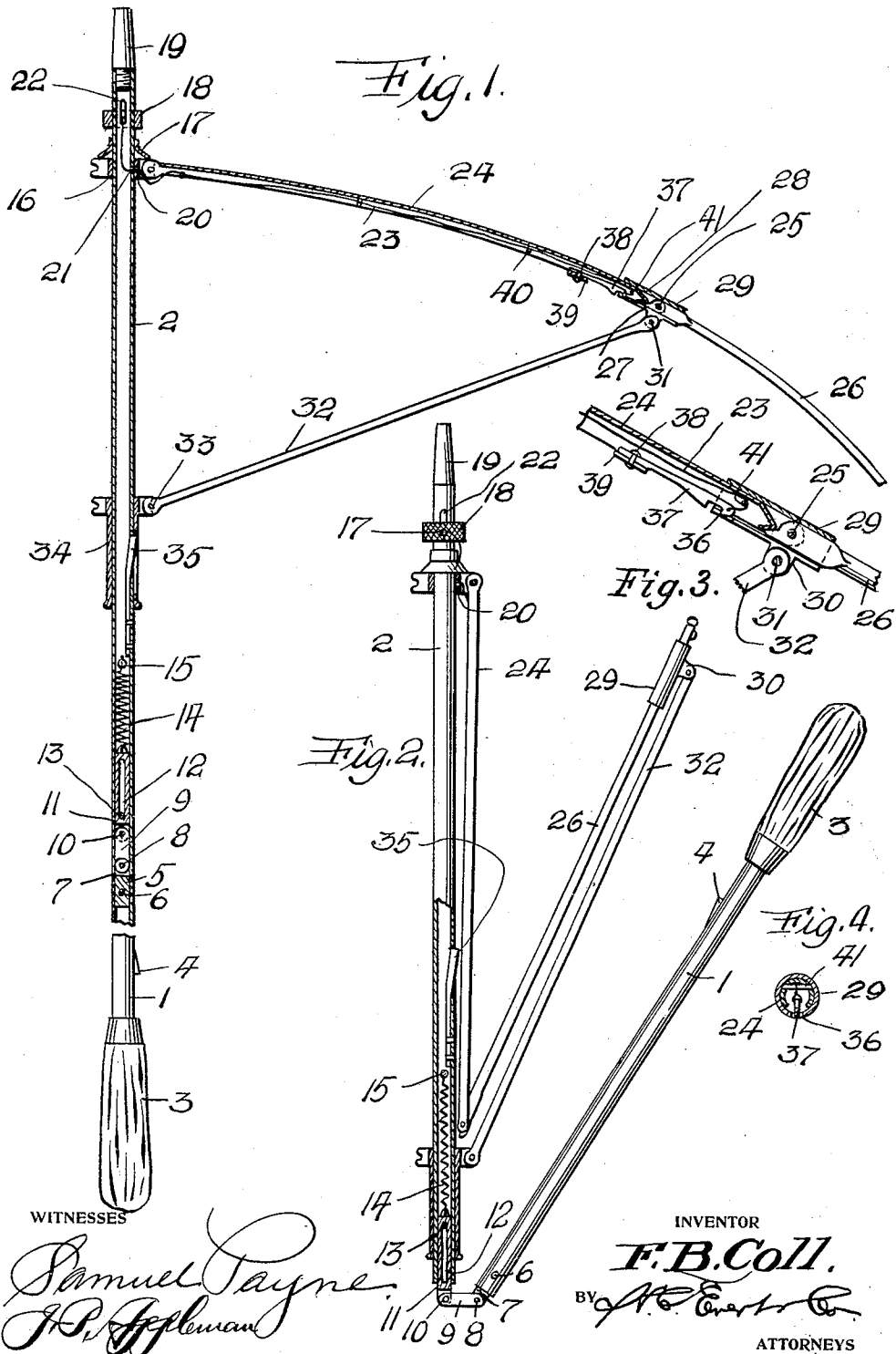


F. B. COLL.
FOLDING UMBRELLA.
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UNITED STATES PATENT OFFICE.

FRANK B. COLL, OF TORNADO, WEST VIRGINIA.

FOLDING UMBRELLA.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK B. COLL, a citizen of the United States of America, residing at Tornado, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in Folding Umbrellas, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to umbrellas, and the objects of my invention are to provide an umbrella having a foldable stick and foldable ribs that permit of the umbrella being easily and quickly folded, and to provide an umbrella that can be reduced in its longitudinal dimension and easily carried in the pocket or in a valise.

Further objects of my invention are to provide a sectional umbrella stick, the sections of which can be easily and quickly folded or maintained in rigid longitudinal alinement, and to accomplish the above results by a mechanical construction that is durable, inexpensive to manufacture, and highly efficient for the purposes for which it is intended.

The principles of my invention are illustrated in the drawing, in which:—

Figure 1 is a longitudinal sectional view of the stick and one rib of an umbrella in accordance with this invention, Fig. 2 is a side elevation of the same partly folded and partly broken away and partly in section, Fig. 3 is an enlarged longitudinal sectional view of a portion of one of the ribs of the umbrella. Fig. 4 is a cross sectional view of the sectional rib at the joint thereof.

Further describing my invention with reference to the drawing, in which like numerals of reference denote like parts throughout: 1 denotes a tubular handle section and 2 a tubular tip section, said sections constituting the stick of the umbrella. The section 1 has a handle 3 and a catch 4 of the ordinary and well known type for holding the runner of the umbrella in proximity to the handle 3 thereof.

5 denotes a plug retained within the section 1 by a transverse pin 6 and said plug has an apertured ear 7 protruding from the end of the section 1. Pivotally connected to the ear 7 by a pin 8 is a link 9 that is pivotally connected by a pin 10 to the end of a spring held rod 11 slidably mounted in the section 2. The rod 11 has a longitudinal slot 12 and extending through said slot is

a pin 13, carried by the section 2 for limiting the movement of the rod 11. Attached to the rod 11 is the end of a coiled retractile spring 14 that has the opposite end thereof connected to a pin 15 arranged transversely of the section 2. When the handle section 1 is placed in longitudinal alinement with the tip section 2, the spring 14 immediately draws the rod 11 within the section 2, also the link 9, the movement of these elements being limited by the end of the handle section 1 engaging the end of the tip section 2. With the rod 11 and the link 9 within the section 2 a rigid connection is established between the sections 1 and 2.

The tip section 2 is provided with a notch 16, a ferrule 17, a knurled shiftable nut 18 and a detachable tip 19. The notch 16 is of the ordinary and well known type and is provided with an opening 20 registering with an opening 21 in the tip section 2. The section 2, adjacent to the detachable tip 19 is provided with a longitudinal slot 22 and extending through the openings 20, 21 and the slot 22 is a cord 23 that is attached to the shiftable nut 18.

Pivotally connected to the notch 16 in the ordinary and well known manner is the inner end of a channel-shaped rib section 24 and pivotally connected to the other end of said section by a transverse pin 25 is an outer rib section 26. The pivoted end of the outer rib section 26 is provided with a tooth 27 and this tooth is engaged by an angle piece 28, carried by the end of the rib section 24 and formed by shearing or cutting the end of the rib section and bending the sheared material to form the angle piece 28.

Slidably mounted upon the rib section 26 is a sleeve 29 that has apertured ears 30 pivotally connected by a pin 31 to a spreader 32. The spreader 32 is pivotally connected, as at 33 to a runner 34 slidably mounted upon the umbrella stick. The runner 34 is held upon the tip section 2 by a catch 35 of the ordinary and well known type.

The sleeve 29 has an opening 36 and adapted to engage in this opening is a resilient catch 37 carried by the outer end of the rib section 24. The catch 37 is riveted, or otherwise secured, as at 38 to a bar 39 connecting the side walls of the rib section 24. The cord 23 extends through eyes 40 carried by the inner side of the rib 24 and passes over a transverse pin 41 arranged in the outer end

of said rib section, said cord being attached to the catch 37, whereby when the nut 18 is shifted toward the tip 19 the cord 23 will be moved or pulled upon to raise the catch 37 and release the sleeve 29.

Fig. 2 of the drawing shows the manner of folding the umbrella. After the sleeve 29 has been released and the runner 34 shifted toward the joint of the stick sections 1 and 2, the outer rib section 26 can be folded back toward the inner rib section 24; the sleeve 29 sliding upon the outer rib section 26 toward the end thereof, thereby permitting the spreader 32 to assume a position in parallelism with the outer rib section 26. The stick section 1 can then be folded into parallelism with the rib sections and the umbrella has been reduced in its longitudinal dimension approximately one-half.

What I claim is:—

1. An umbrella comprising a stick formed near its tip with a longitudinal slot, a runner slidably mounted upon the stick, a notch carried by the stick inwardly with respect to said slot, a shiftable nut mounted upon the stick outwardly with respect to said notch, an inner rib section pivotally connected to said notch, a spreader pivotally connected to said runner, an outer rib section pivotally connected to the inner rib section, a sleeve slidably mounted upon said rib sections and adapted to extend over the pivot of said sections to provide a rigid connection, said sleeve having its inner end formed with an opening, a resilient latch carried by the inner rib section and capable of engaging in

said opening for maintaining the sleeve from movement, means for pivotally connecting the spreader to said sleeve, and a flexible member connected to said latch, extending through the inner rib section and into the stick, and means for connecting said member to said nut through said slot.

2. The umbrella comprising a stick including a hollow tip section provided with a longitudinal slot and an opening inwardly with respect to said slot, a notch secured to the stick inwardly of said slot and having an opening registering with the opening of the tip section, an inner and an outer rib section pivotally connected together, a sleeve slidable upon said sections and capable of inclosing the pivot thereof to maintain a rigid connection between said sections, means for pivotally connecting said inner section to said notch, a latch carried by the inner section and engaging said sleeve to retain the latter stationary, a flexible releasing member attached to said latch, extending through said inner section and through said openings into said tip section, a shiftable nut mounted upon the tip section, means for connecting said member to said nut, means for pivotally connecting the spreader to said sleeve, and a runner mounted upon the stick and having the spreader pivotally connected thereto.

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

FRANK B. COLL.

Witnesses:

OLA STUTLER,
N. C. STUTLER.