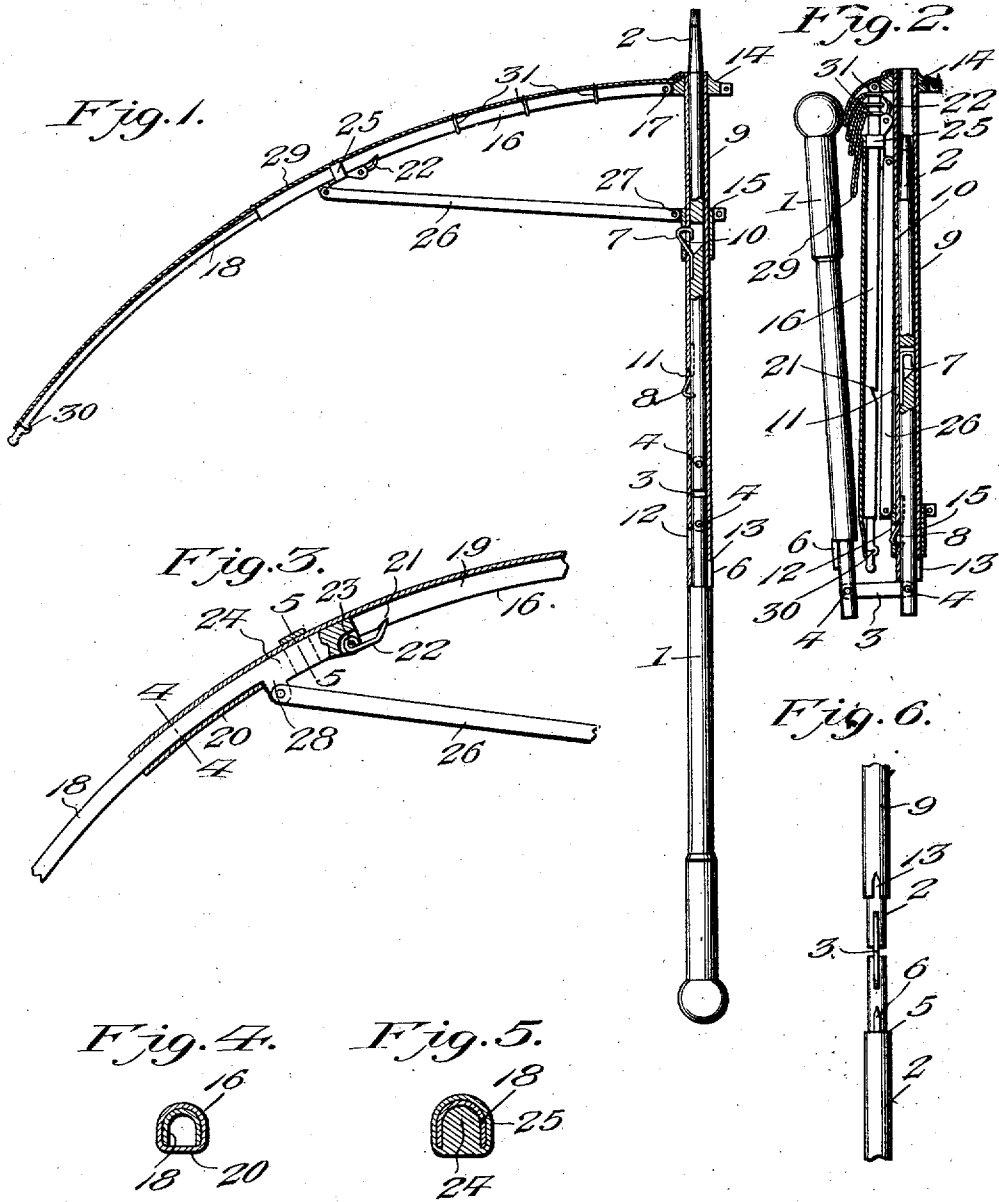


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UMBRELLA.

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Witnesses

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UMBRELLA.

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To all whom it may concern:

Be it known that I, KATHRYN CONNORS, a citizen of the United States, residing at Sioux Falls, in the county of Minnehaha and State of South Dakota, have invented new and useful Improvements in Umbrellas, of which the following is a specification.

This invention relates to improvements in umbrellas and parasols, particularly with reference to the provision of means whereby the same, when not in use, may be compactly folded so as to occupy but little space and be thereby enabled to be carried in a valise or the like, and the said invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawing,—Figure 1 is partly an elevation and partly a sectional view, illustrating the construction of my improved umbrella, showing the same extended. Fig. 2 is a similar view showing the same folded. Fig. 3 is a detail sectional view showing a portion of the jointed rib, and also showing the base connected to the rib. Fig. 4 is a detail sectional view taken on the plane indicated by the line 4—4 of Fig. 3. Fig. 5 is a similar view taken on the plane indicated by the line 5—5 of Fig. 3. Fig. 6 is a detail elevation showing the joined portions of the staff or the rod and also showing the lower portion of the tubular guide and coupling staff element.

The staff or rod of my improved umbrella, parasol or the like is foldable and is composed of a plurality of flexibly jointed members. The lower member 1 is here shown as having its upper end connected to the lower end of the upper member 2 by a link 3, which link has its end portions disposed in transverse slots or kerfs in the meeting ends of the said members and pivotally connected to such members, as at 4. The lower member 1 is provided at a suitable distance from its upper end with a shoulder 5 and with a locking tongue 6 which projects from such shoulder. The upper member 2 is here shown as provided near its upper and lower ends, respectively, with spring catches 7, 8.

In connection with the flexibly jointed members of the staff or rod I also employ an element which in the embodiment of my invention here shown performs certain of the functions of a staff and also serves as a guide and coupling for the flexibly jointed members of the staff or rod proper to lock

such members in extended alining position and effect a rigid coupling between such members when the umbrella is in use. Such guiding and coupling staff element is here shown as a tube 9, of suitable length and diameter, and in which the upper member of the staff proper is adapted to slide longitudinally, the lower member of the staff proper having its upper portion also adapted to slide longitudinally in such tubular guide and coupling staff element 9. The upper member 2 of the staff proper is disposed in and is slidably related to such staff element 9, and the latter is provided at suitable distance from its upper end with a locking opening 10, at a point near its center with another opening 11, and near its lower end with a similar opening 12. In the lower end of the said staff element 9 is a slot 13 adapted to receive the tongue 6 of the lower staff member 1 when the rod or staff is in extended position and its joint incased by the tubular staff element 9 to prevent such staff proper from turning in such tubular staff element. Such tubular staff element has a notch 14 at its upper end for the pivotal attachment of the ribs.

A runner 15 slides upon the tubular element 9 and has the usual opening which, when the runner is raised, is engaged by the spring catch 7 which projects also through the opening 10 in the element 9 to hold the member 2 from movement in one direction, while the spring catch 8 engages the opening 11 to hold the member 2 from movement in the other direction, all as shown in Fig. 1. When the umbrella is folded and the runner descends, it is engaged by the spring catch 8 which also engages the opening 12 in the element 9, the openings 10 and 11 are then idle, and the catch 7 is idle and compressed, all as shown in Fig. 2. For the purposes of this specification, only one rib is illustrated in the drawings. Such rib is longitudinally extensible and comprises a plurality of jointed members. The rib is here shown as comprising an upper member 16, the upper end of which is pivotally connected to the notch 14, as at 17, and a lower member 18 which is slidably connected to such upper member. The upper member is channel-shaped in transverse section to provide a groove or guideway 19 in its lower side for the reception of the lower member 18. Such channeled upper rib member 16 has at its outer end a stop and bottom band

20 which closes the lower side of such channel. In the sides of such upper rib member at a suitable distance from its outer end and at its lower edges are stop notches 21 for engagement by a pawl or other suitable form of catch 22, which is here shown as pivoted to the upper portion of the lower rib member 18, as at 23. Such lower rib member is channel-shaped transversely for the major portion of its length. Its upper portion is here shown as solid, at 24, and is provided with a band 25 which extends around the outer surface of the upper rib member 16, such band coacting with the lower or outer tubular portion 20 of the upper rib member to prevent the lower rib member from becoming casually detached from the upper rib member, while permitting such lower rib member to be moved longitudinally with respect to the upper rib member, so that the rib may be longitudinally extended or retracted. Each brace 26 has its inner end pivotally connected to the runner 15, as at 27, and its outer end pivotally connected to a lug or ear 28 of one of the lower rib members, on the underside and near the upper end of such lower rib member.

The cover 29 of the umbrella or parasol, which may be made of any suitable fabric, has its outer edge connected to the outer ends of the lower rib members, as at 30. The upper or central portion of the cover is connected slidably to the upper rib member, as by means of slides shown in the form of rings or loops 31, which are slidable on such upper rib members.

When the umbrella is open for use, the upper end of the upper member 2 of the rod or staff projects beyond the upper end of the tubular staff element 9 so that the latter at its lower portion covers the flexible joint between the rod members 1, 2 and serves to stiffen the rod or staff and these parts are so held by the catch 8 engaging the opening 11. In this position of the umbrella the runner 15 is near the upper end of the staff element 9, and the catch 22 of each lower rib member is in engagement with the notches 21 of each upper rib member so that the ribs are extended and subjected to tension which serves to stiffen the umbrella cover and hold the same in shape. In order to close the umbrella the spring catch 7 must be disengaged from the runner and the latter moved downwardly on the tubular staff element 9, to cause the ribs to be drawn downwardly by the braces 26. The initial movement of such braces causes the tension between the lower rib members and the upper rib members to be relaxed so that the

catches 22 drop from the notches 21, and as the runner moves toward the lower end of the staff element the angular movement of the rib sections causes the lower members of the ribs to slide upwardly into the upper members thereof so that the ribs become shortened. During such movement of the ribs the lower members thereof cause the central portion of the umbrella cover to be disposed in folds, as shown in Fig. 2, by the movement of the rings or hoops 31 on the upper rib members. After disengaging the spring catch 7 from the runner, the thumb of the operator's hand which is moving the runner will also disengage the spring catch 8 from the opening 11 (as all openings are in alinement) to unhook the upper member 2 of the rod from the tubular staff element 9 so that as the ribs are shortened and folded against the tubular staff element the upper member 2 of the staff proper may be moved downwardly to some extent in such tubular staff element to cause the catch 8 to engage the opening 12 of such tubular staff element and thereby expose the flexible joint between the members of the staff proper and permit the member 1 to be folded toward the member 2, as shown in Fig. 2, so that the entire umbrella may be folded into the least possible space.

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

An umbrella whose staff comprises two members and a link connecting them pivotally with each other, the upper member having two alined spring catches facing away from each other, a tubular element surrounding said staff and slidable thereon from a position covering the link to a position on the upper member wholly above the link, said element having three alined openings of which the lowermost is idle and the others engage said catches when the umbrella is open and the staff members alined with the tubular element, and the lowermost catch engages the lowermost opening and the link stands across the lower end of said tubular element when the umbrella is closed; the ribs, the braces, and a runner sliding on said element and having an opening engaged by the uppermost catch when the umbrella is open and by the lowermost when it is closed and the staff members folded on their link.

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

KATHRYN CONNORS.

Witnesses:

ADOLPH J. HILGENDORF,
GEORGIA HILGENDORF.