

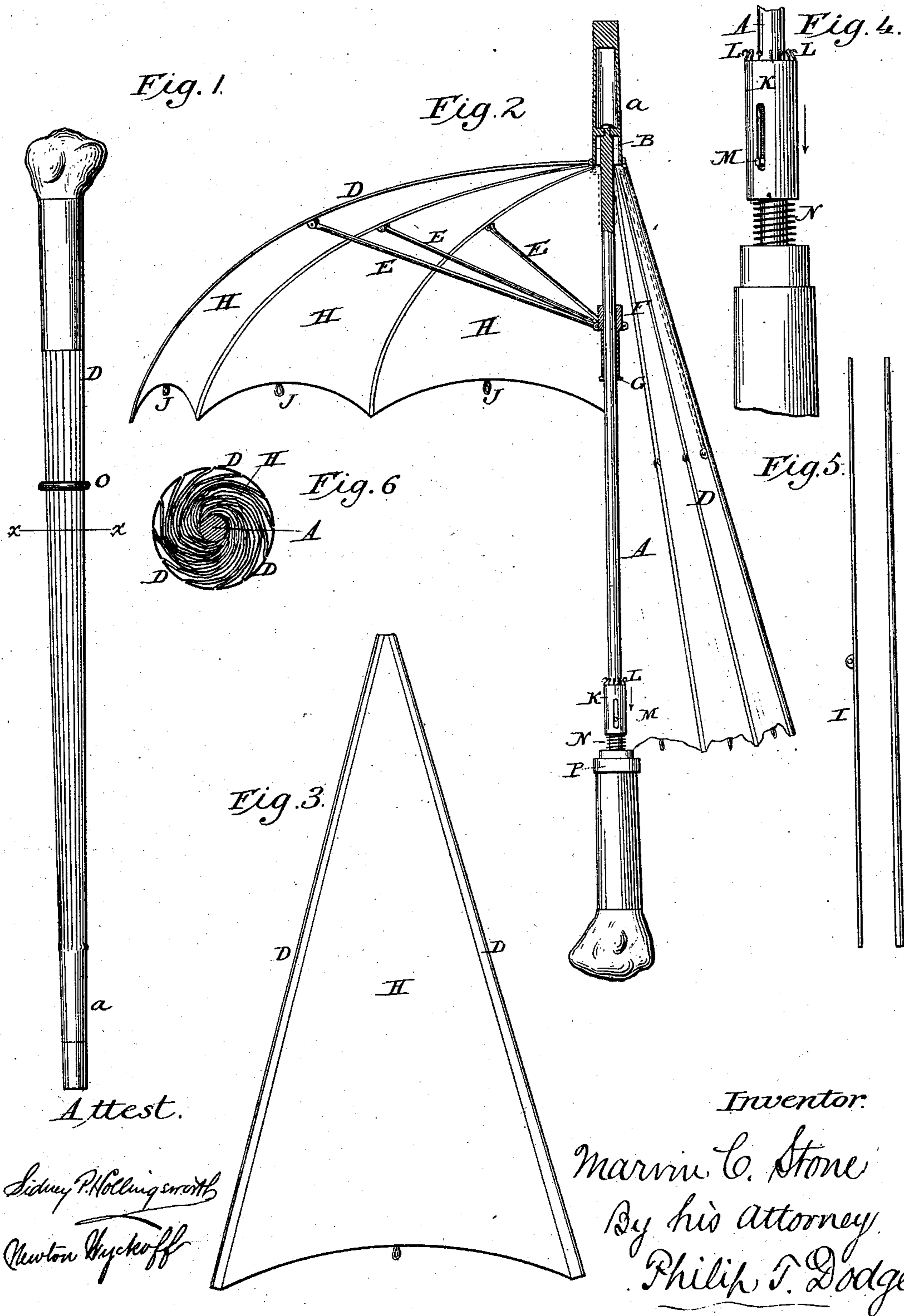
(No Model.)

M. C. STONE.

UMBRELLA.

No. 291,104.

Patented Jan. 1, 1884.



UNITED STATES PATENT OFFICE.

MARVIN C. STONE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO JOHN McCORMICK, OF SAME PLACE.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 291,104, dated January 1, 1884.

Application filed December 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, MARVIN C. STONE, of Washington, in the District of Columbia, have invented certain Improvements in Umbrellas, of which the following is a specification.

The aim of this invention is to produce an umbrella which shall have a neater and more compact appearance than those constructed in the ordinary plan, and which, when not in use, shall have the cloth completely protected against wear.

To this end it consists, mainly, in the combination, with the cloth or cover, of external ribs adapted to serve as guards or shields to cover or protect the cloth upon the outside when the umbrella is closed, and means for effecting the winding of the cloth into compact form therein.

The invention further consists in various details, which will be hereinafter described.

Referring to the accompanying drawings, Figure 1 represents a side view of my umbrella as it appears when closed. Fig. 2 represents a central cross-section of the umbrella, one side being shown in an open, and the opposite side in a partially-closed condition. Fig. 3 is a view of one of the sections or gores of the cloth cover, with the supporting-ribs attached. Fig. 4 is an enlarged view of the lower end of the handle and the devices mounted thereon. Fig. 5 is a view showing one of the ribs and the rod or strip which may be employed for securing the cloth thereto. Fig. 6 is a cross-section on the line *xx*, Fig. 1.

Referring to the drawings, A represents a rigid staff or handle, which is to be made of the smallest size allowable consistent with the strength required. At its upper end the handle A terminates in an enlarged head or point, *a*, to which the upper ends of the ribs D are jointed. The lower end of this point is provided with an annular recess, B, to receive a sliding collar, F, to which the inner end of the braces E are jointed, the collar being represented upon the handle or staff. The staff or handle A is swiveled to the head *a*, as shown, or otherwise connected in such manner that it may revolve independently of the ribs, as hereinafter described. The ribs are each a section of a tapering tube, and are made of such size and number that when closed together side by side

they will form a case or tube to envelop or inclose the cloth. Each rib has pivoted to its inner side, at any suitable point between its ends, a supporting-brace, E, the inner ends of these braces being pivoted, in turn, to sliding collar F, mounted on the staff or handle A. The braces and their supporting-collar F are arranged in such manner that the collar and inner ends of the braces may be moved upward toward the head of the handle, the outer ends of the ribs, when the latter are to be closed, being moved downward, as usual. In other words, the closing of the braces is effected by moving their inner ends upward against the inner ends of the ribs, instead of folding them against the outer ends of the ribs, as usual. This folding or closing of the braces in an upward direction is of special importance in connection with the ribs applied externally for closing purposes, for the reason that it leaves ample room within the lower ends of the closed ribs for the cloth, which would not otherwise be the case. The downward movement of the brace-supporting collar F will be limited by a pin, collar, or equivalent stop, G, upon the handle A, this stop serving to keep the ribs in an extended position when the umbrella is in use.

H represents the cloth or covering, made in sections of the ordinary form, or in any other suitable form, attached to the inner sides of the ribs D in any suitable manner. It is preferred, however, to secure the cloth by means of thin plates or strips I—such as shown in Fig. 5—applied on the inside of the cloth, to hold the same against the ribs upon the outside, the strip being united to the ribs by rivets or other equivalent fastenings. To the outer edge of each of the sections or gores of the cloth I attach, at its middle, a loop, J, and to the lower end of the handle A, I attach a non-rotating collar, K, having upon its upper end a series of hooks or buttons, L, adapted to receive the loops J. The collar K is slotted lengthwise and prevented from rotating by means of a pin, M, passed through said slot into the handle, this slot allowing the collar a limited longitudinal movement upon the handle. Around the lower end of the handle I mount a spiral spring, N, secured at one end to the handle and at the opposite end to the

sliding collar, and tending to draw said sleeve downward to the lower end of the handle.

The operation of my device is as follows: When required for use, it is placed in an upright position, whereupon the collar F will slide downward into a position in which it may be readily grasped by the hand of the operator inserted within the umbrella. The next action of the operator is to draw said collar downward until it is arrested by the stop G, the effect of which is to cause the braces E to expand the ribs and extend the cloth in the ordinary manner, the umbrella being then ready for use. When, on the other hand, the device is to be closed, the operator first moves the collar F upward a sufficient distance to release the braces and ribs and permit them to fold inward. He next places the loops J on the buttons L, after which, grasping the body of the umbrella with one hand, he revolves the handle A with the other, the effect of this action being to turn the collar K and its buttons L, causing the latter, through the loops J, to wind the cloth from the interior compactly and closely around the handle A, at the same time causing the ribs to be drawn inward compactly together, so as to form a tight inclosing body or tube around the cloth, which is thus concealed from view and protected from wear. The spring N allowing the end motion of the collar and buttons, causes a yielding strain to be applied upon the cloth during the act of winding the same, whereby the cloth is caused to fold snugly and compactly without danger of being ruptured. After the umbrella has been closed, an elastic band, O, may be applied to the outside of the ribs, or a sliding ring or collar, P, arranged to slide over the ends of the ribs at or near the butt of the handle. While it is preferred to secure the collar K upon the handle, and to effect the winding of the cloth by rotating the handle, it is manifest that the collar may be arranged to extend beyond the ends of the closed ribs and left free to revolve upon the handle, in which case the winding of the cloth may be effected by turning the collar, the handle remaining at rest.

As before stated, the leading feature of my invention consists in the application of the external ribs, and it is manifest that this feature may be employed in connection with braces differently arranged from those shown in the drawings.

It is also obvious that the form of the ex-

ternal ribs in cross-section may be modified to any extent desired, and that they may be used with good effect when not adapted to wholly inclose the cloth.

I find that an umbrella constructed upon my plan may be made much lighter and of much less size than those of the ordinary style. When the ribs are adapted to completely inclose the cloth, as herein described and shown, the umbrella will present the appearance, when closed, of an ordinary walking-cane of medium size, as represented in Fig. 1.

I do not limit myself to the precise details of construction herein represented, it being manifest to the skilled mechanic that the various details may be modified without changing essentially the mode of action of the parts.

Having thus described my invention, what I claim is—

1. The combination, in an umbrella, of a series of cloth-sustaining ribs, the cloth or covering applied internally upon said ribs, and means, substantially as described, acting at the center to effect the winding or coiling of the cloth.

2. In combination with the handle, the ribs, the internally-applied cloth, the braces, and the brace-supporting collar F, arranged to slide upward toward the inner ends of the ribs as the latter are closed, substantially as shown.

3. In combination with the ribs, the internally-applied cloth, the braces, and the sleeve or collar to sustain said braces, the rotating handle, the sliding collar K, and means, substantially as described, for connecting said collar temporarily with the cloth or cover, whereby the winding of the cloth from the center outward is effected.

4. In combination with the external ribs, the cloth, and the handle, the sliding collar K, a spring, N, tending to urge said collar endwise, and means, substantially as shown, for connecting said collar temporarily to the edges of the cloth or covering, whereby the cloth is subjected to a yielding strain or pressure while being wound from the center.

5. In an umbrella, the combination of the cloth, the external supporting-ribs, and the internal strips or plates, I, applied as described and shown.

MARVIN C. STONE.

Witnesses:

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P. T. DODGE.