

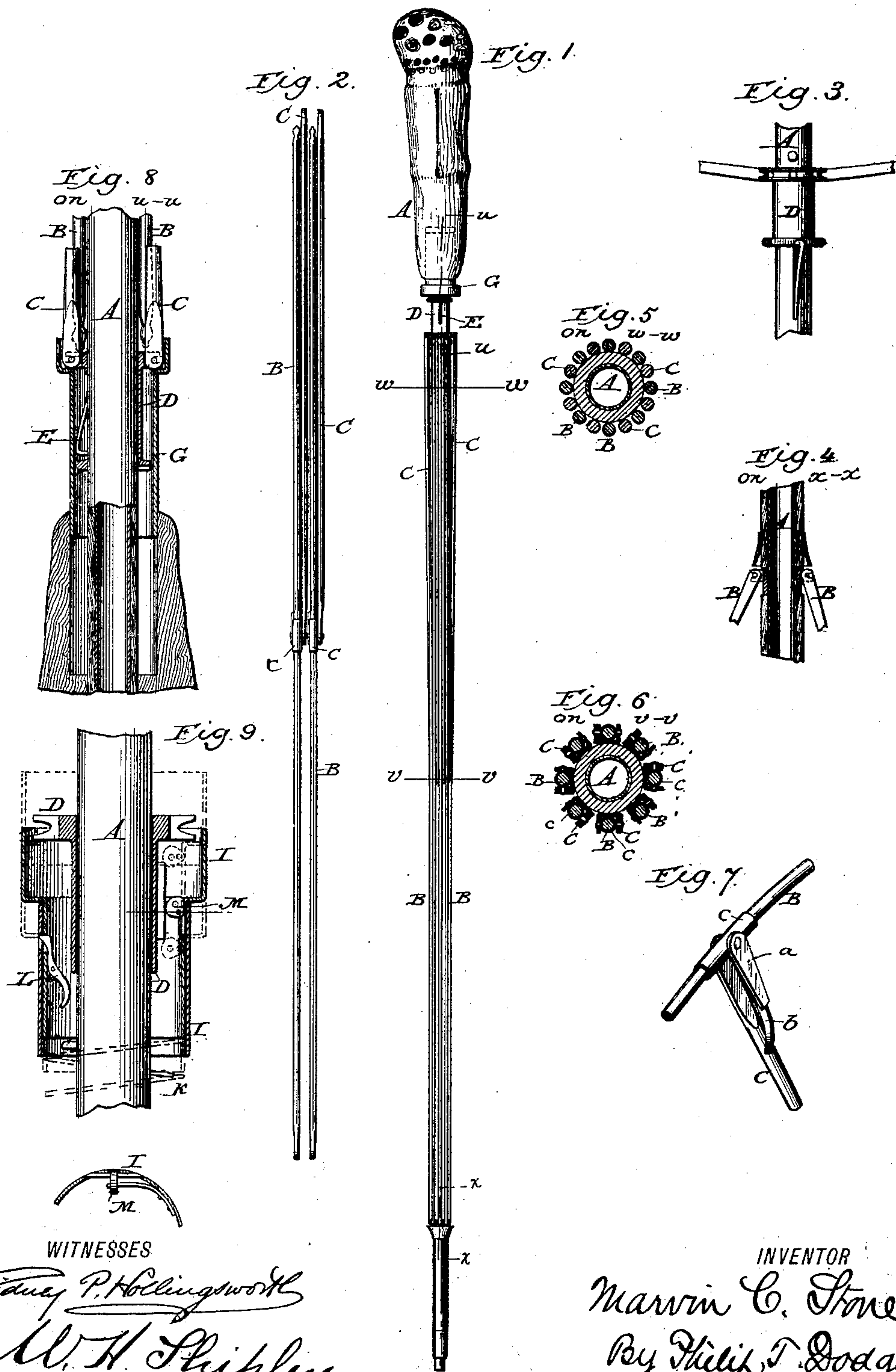
(No Model.)

M. C. STONE.

UMBRELLA.

No. 358,084.

Patented Feb. 22, 1887.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 358,084, dated February 22, 1887.

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*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 provide an umbrella which shall be of exceedingly small size when closed.

To this end it consists, essentially, in combining with the ribs by which the cloth or covering is supported stretchers or braces arranged to close against the staff or handle between the ribs, instead of closing against their outer sides, as usual.

It further consists in various minor features, which will be hereinafter described and claimed in detail.

Figure 1 represents a side elevation of my improved umbrella as it appears when closed, the cloth or covering being removed to expose the other parts. Fig. 2 represents a side view of two ribs and their braces, showing the manner in which they close together side by side. Fig. 3 is a side view of the runner by which the stretchers are operated, and of the catch for preventing its rotation. Fig. 4 is a section through the top or upper end of the umbrella on the line *xx* of Fig. 1. Fig. 5 is a cross-section on the line *ww*. Fig. 6 is a cross-section on the line *vv*. Fig. 7 is a perspective view showing the manner in which the stretchers are attached to the sides of the ribs, and also the spring-lip to assist in the opening of the umbrella. Fig. 8 is a section on the line *uu* of Fig. 1, showing the runner and the collar by which the ribs are locked in a closed position. Fig. 9 is a longitudinal section, in a modified form, of the devices represented in Fig. 8.

Referring to the drawings, A represents the staff or handle of the umbrella; B B, a series of ribs jointed at their upper ends to the staff for the purpose of sustaining the cloth or covering; C C, stretchers or braces jointed at their upper ends to the ribs and at their lower ends to a tubular runner, D, arranged to slide on the staff, as usual. The runner sliding up and down on the staff causes the stretchers to raise and lower the ribs in essentially the same manner as in umbrellas of the ordinary form. The stretchers, however, instead of being applied to close between the ribs and the staff

are jointed, as plainly shown in the several figures, to the sides of the ribs, so that when the latter are closed the stretchers will lie between them against the staff in the manner represented in Figs. 1, 2, and 6. In order to permit this operation of the parts and give control of the stretchers, the latter are extended beyond the ends of the tips and there jointed to the runner D.

For the purpose of holding the parts in a closed position, a spring catch or detent, E, of any ordinary or approved form, is provided on the staff at a suitable point to engage with the runner when it is in its lowest position. As an additional means of confining the parts in a closed position, I propose to provide a sliding collar, G, encircling the staff and arranged to slide over and around the runner D in such manner as to engage over the extremities of the ribs, as plainly represented in Fig. 8. This collar may have its lower end reduced in size, as represented in the drawings. It may be applied in any suitable manner; but it is recommended that it be arranged to slide within an opening formed for the purpose in the end of the handle proper, as shown in Figs. 1 and 8. By thus arranging the ribs and stretchers to close side by side against the staff, instead of arranging them to lie one over the other, as usual, I adapt the frame to close in a much smaller space than is possible under the ordinary construction.

For the purpose of giving firm support to the stretchers at their point of connection to the ribs, I secure to the former, on the end of each stretcher, a lip or cheek, *a*, which is extended to the opposite side of the rib and fitted on the end of the pivot which connects the rib to the stretcher.

It will be observed that the lip B is adapted to pass around or partially encircle the stretcher, as represented in Fig. 6, in order that the stretcher and rib may lie side by side when closed. Each stretcher is provided near its outer end with an elastic lip, *b*, which bears against the inside of the rib when the umbrella is closed, and which tends to throw the ribs outward when released. Owing to this action it enables the operator to open the umbrella easily and quickly.

In order to permit the pivotal connection of the stretchers to the ribs without weakening



the latter, I propose to surround each rib by a small sleeve or tube, *c*, brazed or otherwise secured thereon, and to form the pivots on the sides of this sleeve, as shown in Figs. 6 and 7, or pass the pivot-pin through the sleeve at one side of the rib.

In place of the sliding collar arranged as in Fig. 8, I may employ, when preferred, a collar, *I*, arranged in the manner represented in Fig. 9. In this modification a spring, *K*, is applied to throw the collar forward, and detents *L* and *M* applied, as shown, to prevent the collar from advancing until after the runner *D* has been properly adjusted.

I do not claim herein the manner of connecting the ribs to the staff, as represented in Fig. 4, as it will constitute the subject-matter of a separate application.

Having thus described my invention, what I claim is—

1. In an umbrella, the combination of the staff or handle, the ribs jointed at their upper ends to the staff, the braces jointed at their lower ends to the runner, and joints, substantially as shown, connecting the braces to the sides of the ribs, the parts being constructed and arranged, substantially as described, to admit of the braces and ribs folding directly against the staff side by side throughout their length.

2. In an umbrella, the combination of a staff or handle, cloth-sustaining ribs jointed

thereto at their upper ends, a runner, and braces or stretchers jointed to the sides of and arranged to close between the respective ribs and also extended beyond the ends of the ribs and jointed to the runner.

3. In an umbrella, the combination, with the rib, of the brace jointed to one side thereof and provided with a lip, *a*, extending to the opposite side of the rib, substantially as described.

4. In combination with the ribs and braces, the spring-fingers *b*, substantially as described, to facilitate the opening of the umbrella.

5. In combination with the ribs, the braces extended beyond the ribs, and the runner jointed to the ends of the braces, and the independently-movable collar *I*, adapted to encircle and confine the ends of the ribs.

6. In combination with the staff, the plate or spider fixed against rotation on the upper end of the staff, the ribs jointed thereto, the braces jointed to the ribs, the runner jointed to the braces, and the spring-catch or holding device, the runner provided with the notch or shoulder, and the catch arranged to engage and lock said shoulder and thereby prevent the rotation of the runner on the staff.

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Witnesses:

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