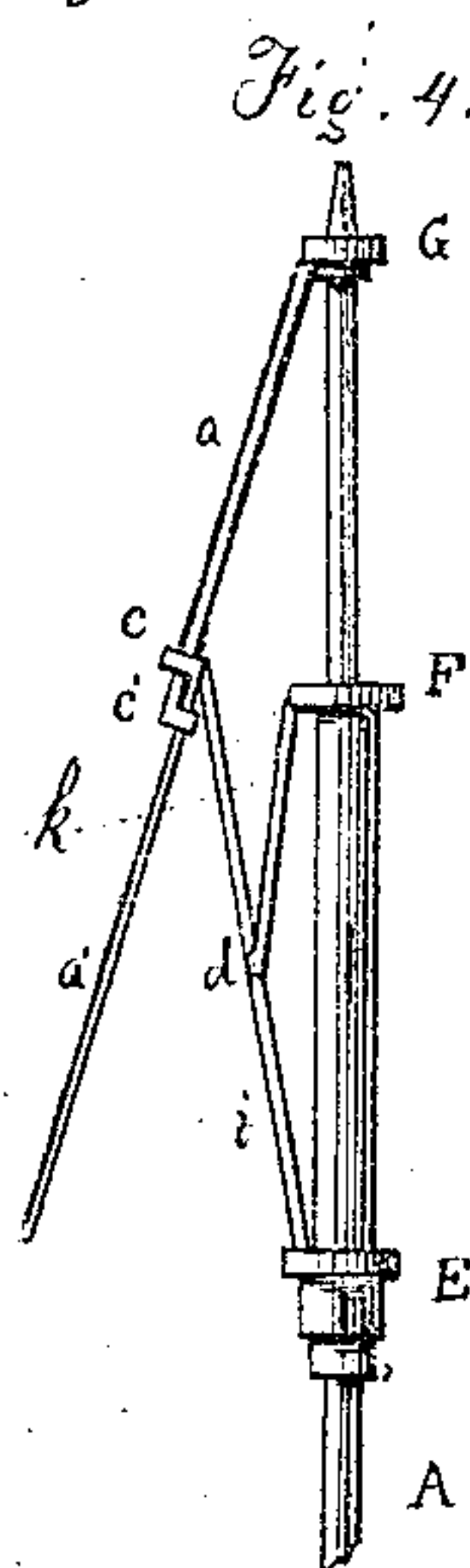
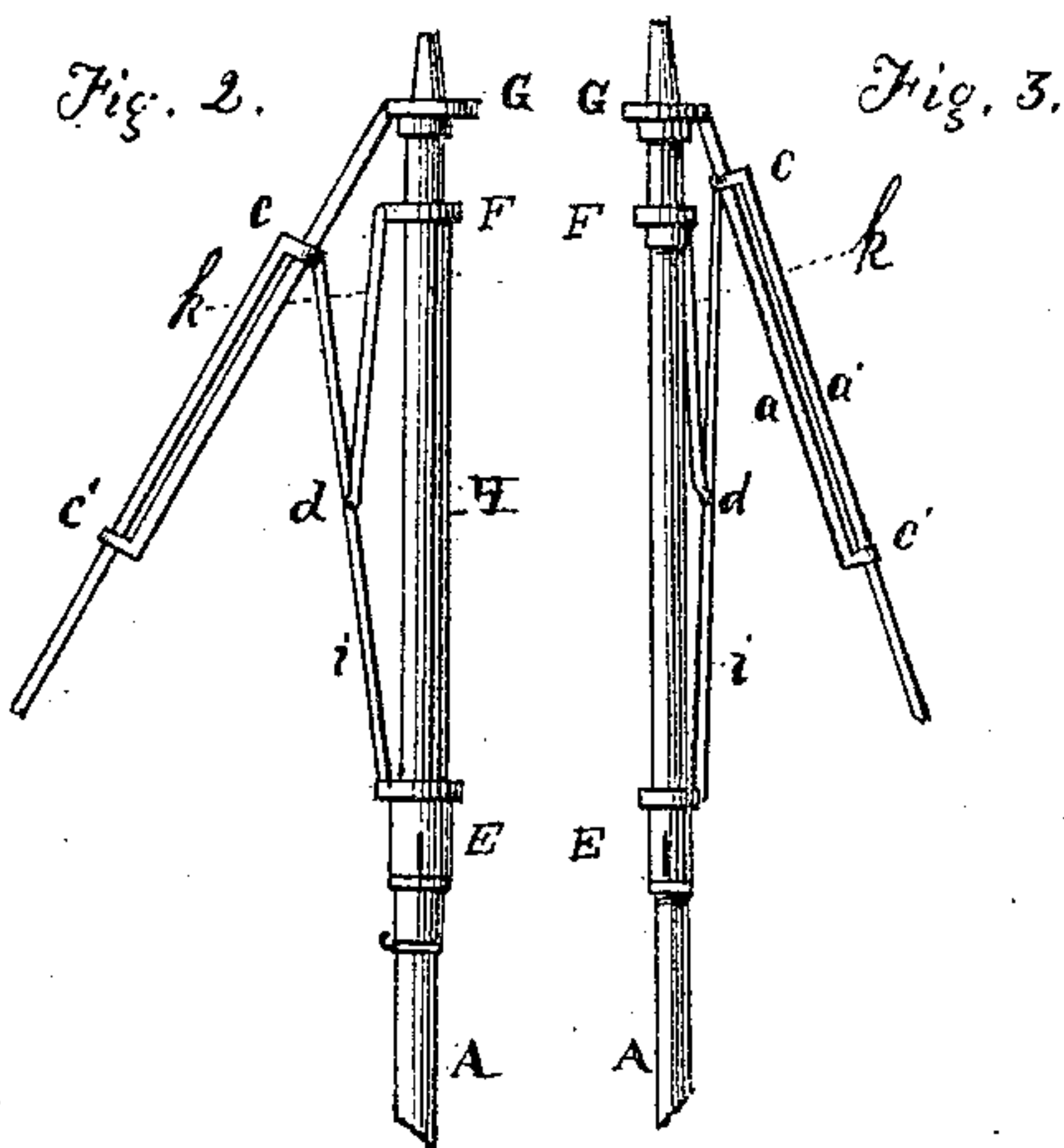
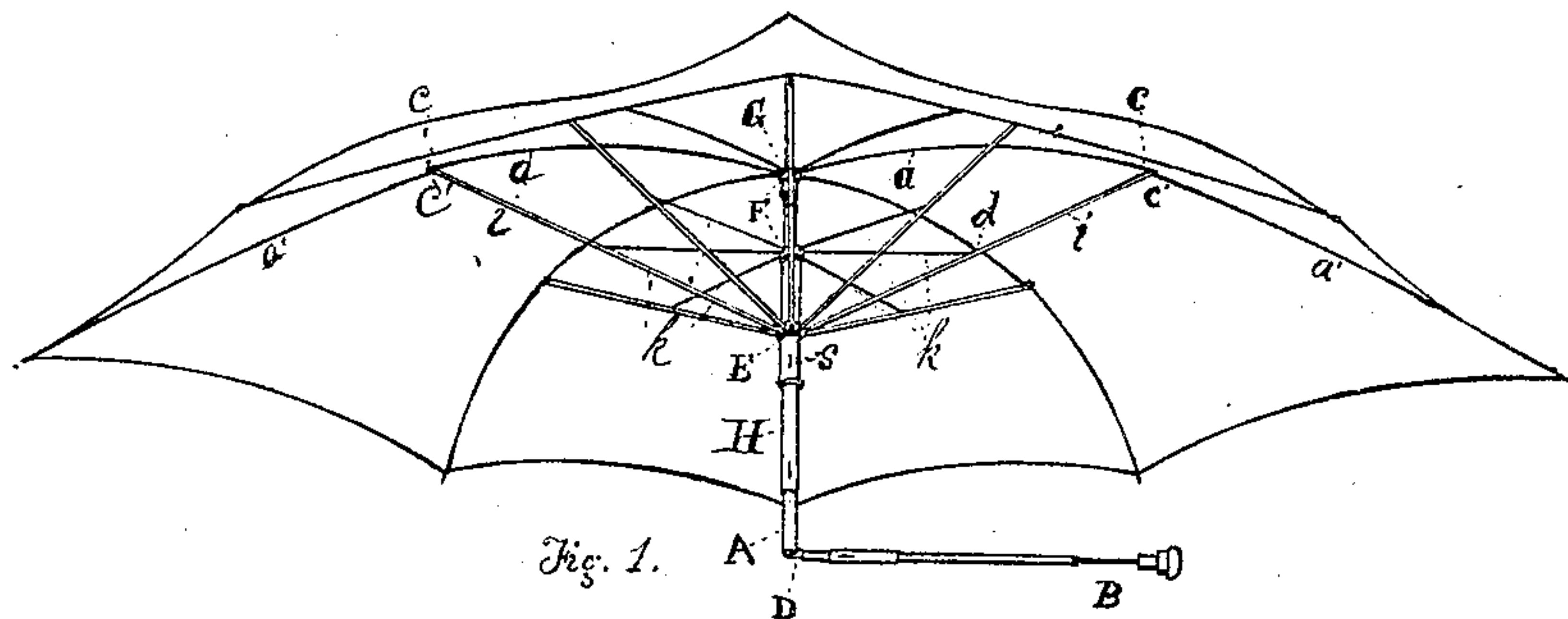


L. SAWYER.
Umbrellas.

No. 145,904.

Patented Dec. 23, 1873.



Witnesses.
Henry C. Burr
Laura S. Tower

Inventor.
Langdon Sawyer

UNITED STATES PATENT OFFICE.

LANGDON SAWYER, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **145,904**, dated December 23, 1873; application filed May 2, 1873.

To all whom it may concern:

Be it known that I, LANGDON SAWYER, of Springfield, in the county of Windsor and State of Vermont, have invented an Umbrella, of which the following is a specification:

The object of my invention is to lengthen or shorten the arms of an umbrella as they are carried out from or drawn down around the stick when it is spread or folded, and for lengthening the arms when it is folded, thereby rendering it more substantial, convenient, and portable than umbrellas now in use.

The umbrella is illustrated in detail in the view presented in Figure 1. Fig. 2 represents the collar F, connected with the tube H, one of its arms being folded and shortened. Fig. 3 shows the collar F fixed to the stick A, without the tube H, with one arm folded and shortened. Fig. 4 represents the joints *c c'*, by which the arms *a a'* are united and permitted to slide one upon the other. Fig. 5 represents the tube H moved down on the stick, with one arm folded and elongated.

The construction of my improved umbrella is as follows: A is the stick; B, the sliding handle drawn down out of the stick A. D is the joint, which enables the stick to be doubled up and packed in a condensed form. This may be accomplished by constructing the stick A with joints, like those of a telescope, which slide into each other. E is a sliding collar, made in the usual manner, surrounding the tube H, and readily moves over it, around which are hinged its long braces *i i*, in the usual way; the other end of the braces are fastened to the lower section of the arms *a a'*, and aid in lengthening and shortening them, as well as extending and folding them. H is a movable tube, which surrounds, and will readily move up and down on, the stick A. It is connected to the collar F with its braces *k k*. By this device the arms *a a'* can be extended at full length after they are folded. The collar F, connected to the tube H, has hinged around it the braces *k k*, the other end of which is attached to the braces *i i* by the pin or pivot *d*. G is a collar, fastened to the stick A near its top, around which are hinged the jointed arms *a a'*, in their usual way. *a a'* are the jointed arms, fastened to-

gether by the hinges *c c'* in such a manner that the lower half will move easily up and down on the upper half as the umbrella is folded or spread. The hinges *c c'* may be constructed, as shown in Fig. 4, by coiling the ends of the arms *a a'* around each other, or by fastening loops to them in such a manner that the arms *a a'* will slide readily upon each other, as shown in Fig. 5. As above constructed, the umbrella is spread, in the usual way, by moving up the collar E. This movement carries out from the stick the ends of the braces *k k*, fastened to the braces *i i* by the pivot *d*, which act, in conjunction with the collar E, upon the braces *i i*; these, in their turn, not only carry out the arms *a a'* from the stick, but move the lower section of them down on the upper by the use of the hinges *c c'*, as shown by Fig. 1. The reversed action of the collar E causes the reversed action of the parts connected with it, as before mentioned, and the arms are folded and shortened, as shown in Figs. 2 and 3. The umbrella can be used in its lengthened form, if desired, when folded. By pressing on the catch *s*, the tube H can readily be moved down on the stick, carrying with it the collars E and F with their braces *i* and *k*, also the lower half of the arms *a a'*, thereby causing the elongation of the arms *a a'*. The tube H now covers the joint D in the stick, which converts the umbrella into its usual form, with the stick firm and unbending, that can be used in walking, if desired. If the umbrella is to be used only when folded in its compact form, with its arms shortened, it can be constructed without the tube H, the collar F being fastened to the stick A, or the braces *k k* made long enough to be hinged around the fixed collar G, that being made double. The operation of lengthening and shortening the arms, as the umbrella is spread or folded, will be the same as before described, as shown in Fig. 3.

By the device above described, the cover, being fastened at the lower and upper ends of the arms *a a'* and around the collar G, when the umbrella is folded, will obviously be carried up by the arms, leaving the upper part to fall in a plait or fold over the lower part, like a tuck in a lady's dress-skirt. When the umbrella is folded and the stick shortened, in the

manner above described, the length will be about one-half of the common umbrella, and it can readily be carried in a traveling-bag or valise.

I claim as my invention—

1. The collar F, braces *k k*, sliding collar E, the braces *i i*, and the jointed arms *a a'*, when combined substantially as and for the purposes herein set forth.

2. The sliding tube H, collar F, braces *k k*, sliding collar E, and the braces *i i*, in combination with the stick A, the fixed collar G, and the jointed arms *a a'*, substantially as and for the purposes herein set forth.

LANGDON SAWYER.

Witnesses:

HENRY C. BURR,
LAURA S. TOWER.