F. HODGES & G. A. HEALEY.

Umbrella.

No. 217,108. Patented July 1, 1879.

Fig. 1.

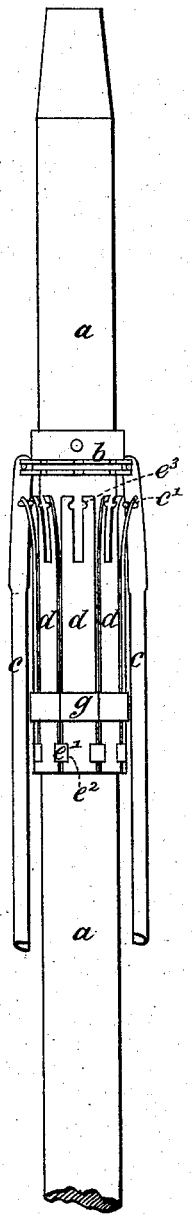

Fig. 2.

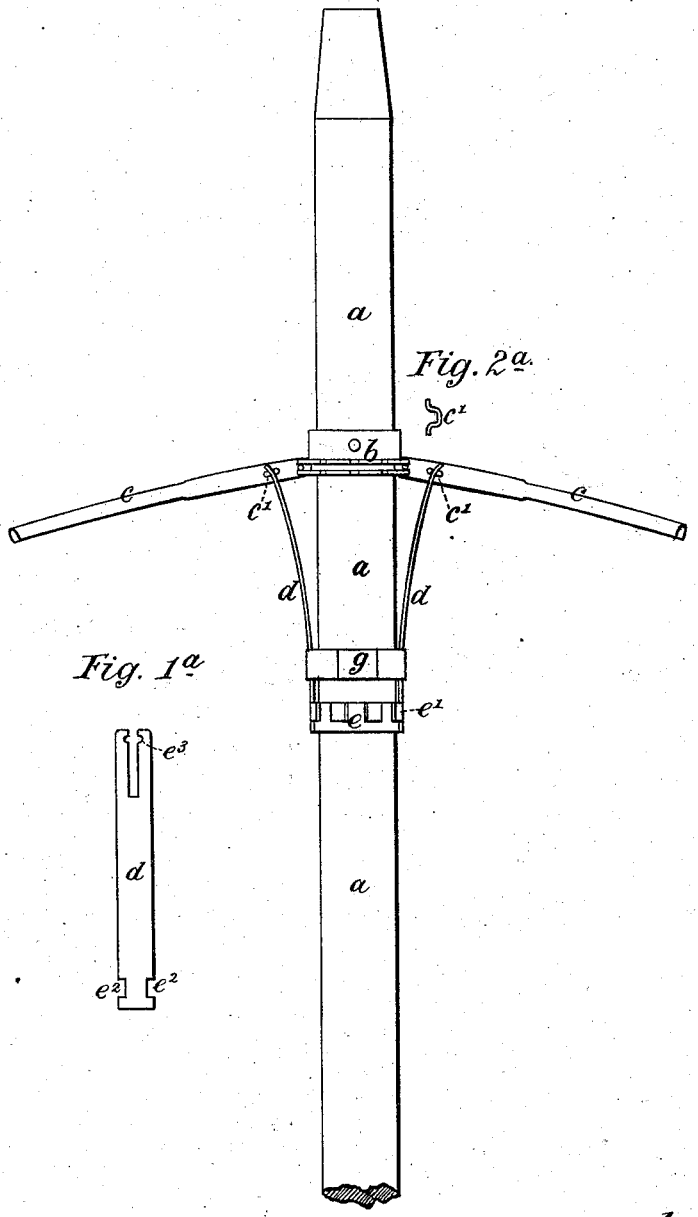

Fig. 2ª.

Fig. 1ª.

Witnesses

John Becker

Fred K Haynes

Inventor

Frank Hodges

George A. Healey

by their Attorneys

Brown & Brown

UNITED STATES PATENT OFFICE.

FRANK HODGES AND GEORGE A. HEALEY, OF LEICESTER, COUNTY OF LEICESTER, ENGLAND.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **217,108**, dated July 1, 1879; application filed May 1, 1879; patented in England, September 20, 1878.

To all whom it may concern:

Be it known that we, FRANK HODGES, of Leicester, in the county of Leicester, England, manufacturer, and GEORGE ALFRED HEALEY, of the same place, mechanic, have invented certain Improvements in Umbrellas, Parasols, or other analogous articles, of which the following is a specification.

The object of this invention is to keep the ribs of the umbrella or other analogous article close to the stick when the article is closed, and to retain them in that position without the use of a tip-cup or india-rubber ring, as heretofore.

To this end our invention consists in an umbrella or parasol comprising the combination, with a stick, a top notch or wheel fitted to said stick, and ribs secured in said top notch or wheel, of springs secured to said stick independent of the runner and bearing upon said ribs near their connection with said top notch or wheel in such manner that when the umbrella or parasol is opened the springs will be distended, and when it is closed the ribs will be kept in position close to the stick by the action of said springs.

It also consists in a novel means of securing the springs to the stick of the umbrella or parasol. These springs may be placed either below the wheel or top notch, and thus be within the frame and surrounded by the ribs, or they may be placed above the top notch and outside the frame.

In order that the invention may be more clearly understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is an elevation of the upper part of an umbrella-frame in which the springs are adapted to the ribs below the top notch or wheel, (the arrangement we prefer,) and showing the ribs closed against the stick. Fig. 2 is an elevation of the umbrella-frame open—that is to say, with the ribs expanded or extended in a horizontal direction. Only two ribs are shown in Figs. 1 and 2, and two springs only in Fig. 2, in order to avoid an unnecessary complication of parts in the drawings.

In these figures, *a* is the stick; *b*, the top notch or wheel, to which the ribs *c c* are connected in the ordinary manner. The ribs *c c* are provided near their connections with the top notch or wheel *b* with cross pins or studs *c' c'*, against which the ends of the springs *d d* are made to bear, and thereby press the ribs inward against the stick *a*, as shown in Fig. 1.

The springs *d d* may be made separate, as shown detached in Fig. 1ª, and secured in any convenient manner to a ring, *e*, which is capable of a slight vertical motion on the stick *a*, or they may be stamped out of one piece of sheet-steel, which is afterward bent round in the form of a cylinder, so as to surround the stick *a*.

One mode of securing the separate springs *d d* to the ring *e* is shown in Figs. 1 and 2.

The ring *e* is formed with projections e^1, which fit into the recesses e^2 in the lower ends of the springs *d d*, and serve to keep the springs steady when in position. A ring or band, *g*, is then placed over the springs, and is held in its place by the elasticity of the springs, which are thus held firmly.

The cross pins or studs *c' c'* we prefer to make in the form shown in the detached view, Fig. 2ª—viz., cranked—which allows of room for the springs *d* to lie alongside of the ribs without projecting above them, and so rub against and cut the covering material when the umbrella is closed. The sides of the crank fit into the recesses e^3 made in the upper ends of the springs *d*, which are thereby retained in place and prevented from slipping away from the studs *c'* when the umbrella is opened.

When the umbrella is opened, by pushing up the runner, (not shown in the drawings,) the ribs *c* will be extended in a horizontal direction, and the cross-studs *c'* will force back the ends of the springs *d*, as shown in Fig. 2, at the same time drawing up the springs *d*, and with them the rings *e* and *g*.

When the umbrella is closed, by pulling down the runner in the usual way, the springs *d d*, by bearing against the cross-studs *c' c'* of the ribs, will force the latter against the stick and will hold them there without the necessity for using any other fastening.

Having now set forth the nature of our in-

vention and explained the mode of carrying the same into effect, we wish it to be understood that we claim—

1. In an umbrella or parasol, the combination, with a stick, a top notch or wheel fitted to said stick, and ribs secured in said top notch or wheel, of springs secured to said stick independently of the runner and bearing upon said ribs near their connection with said top notch or wheel in such manner that when the umbrella or parasol is opened the springs will be distended, and when it is closed the ribs will be kept in position close to said stick by the action of said springs, substantially as specified.

2. The combination, with the stick *a*, top notch or wheel *b*, ribs *c*, and springs *d*, provided near their ends with rectangular notches, of the ring *e*, provided with projections e^1, fitting the rectangular notches in the springs, and the ring *g*, fitting over said springs and holding them in engagement with the ring *e*, substantially as specified.

Dated the 3d day of April, 1879.

FRANK HODGES.
GEORGE ALFRED HEALEY.

Witnesses:

STEPHEN PEAKE,
87 *Chester Street, Leicester, Solicitor's Clerk.*
ROBERT BEAUMONT BURTON JOHNSON,
95 *Buckingham Street, Leicester, Solicitor's Clerk.*