

(No Model.)

B. MOHR.
UMBRELLA.

No. 258,245.

Patented May 23, 1882.

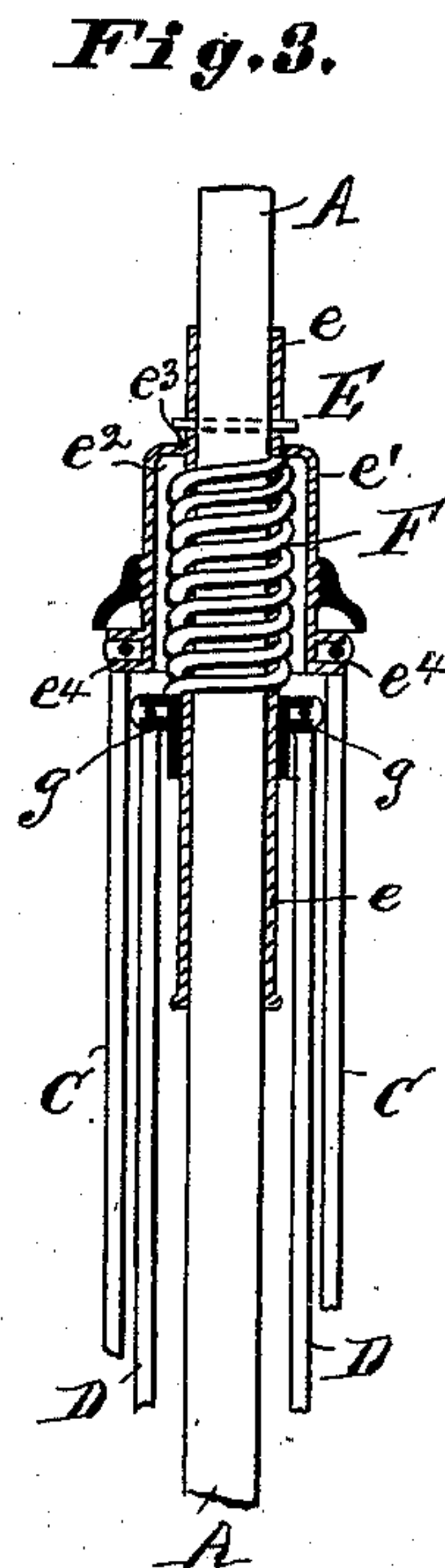
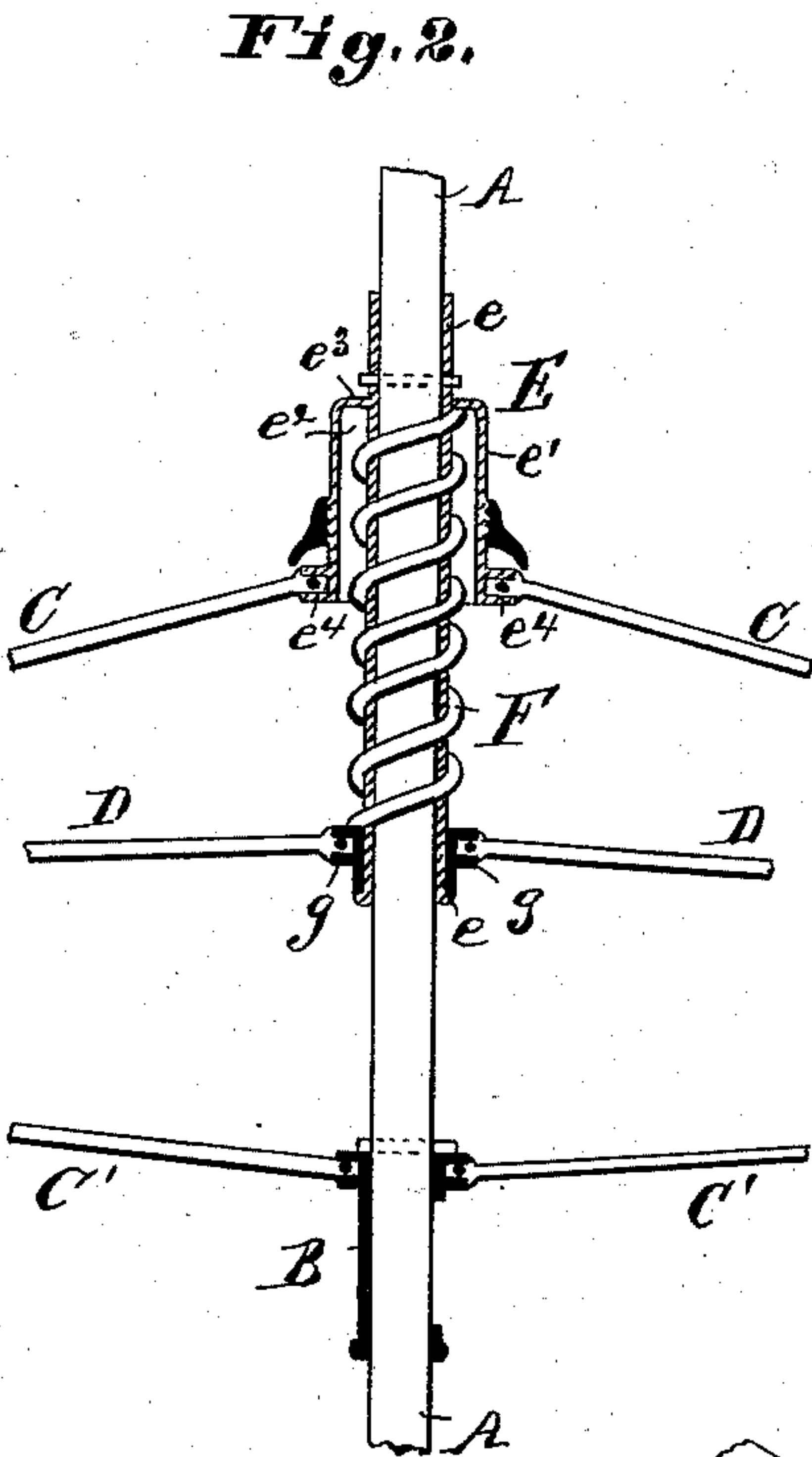
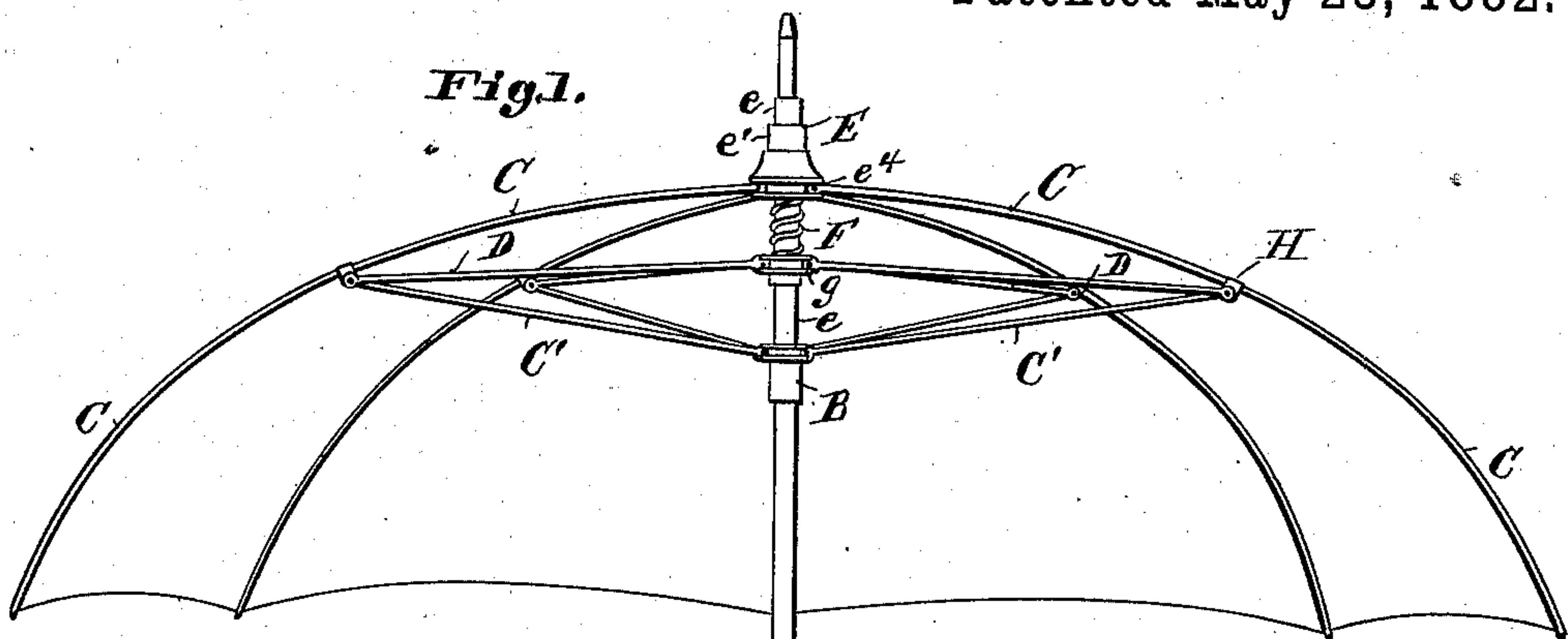
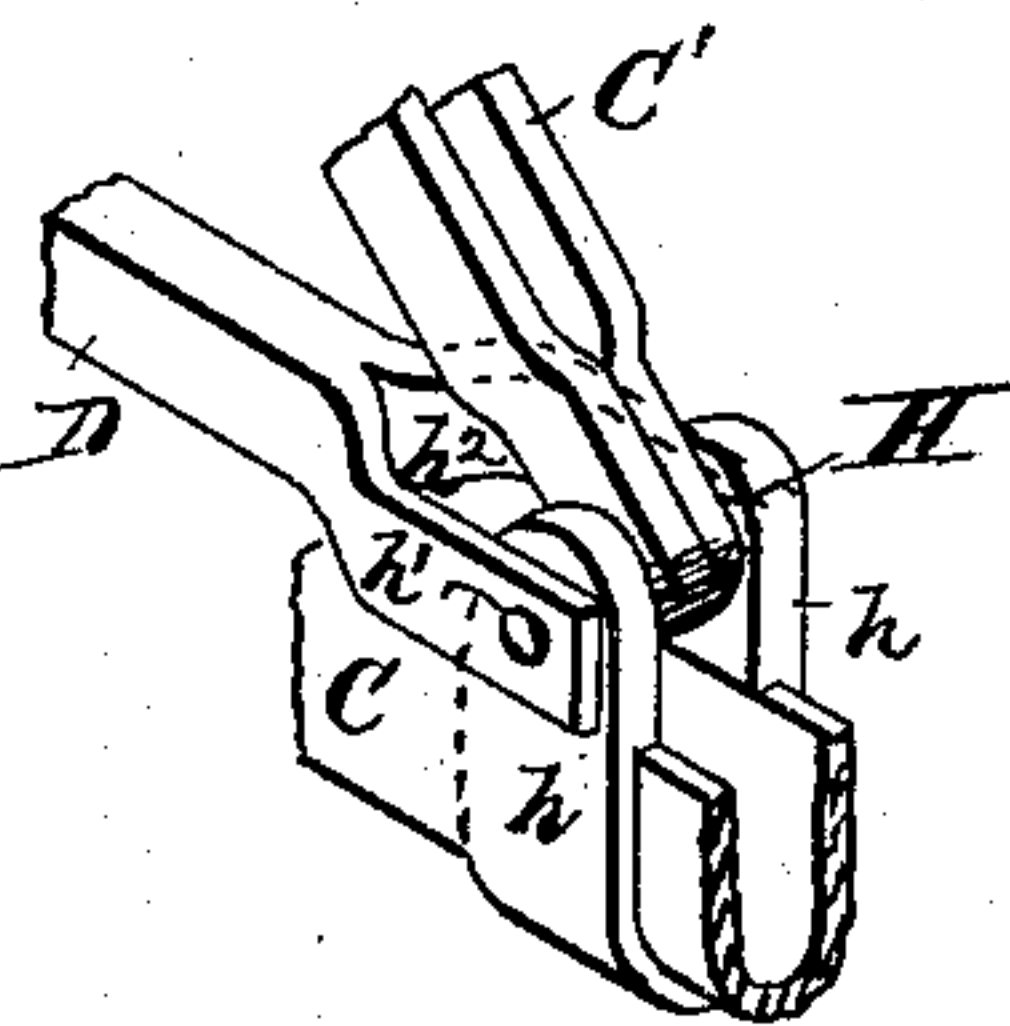


Fig. 4.



Attest.
Charles Pickles
John W. Herthel.

Inventor.
Bernard Mohr
per Herthel and Co
Atty^s

UNITED STATES PATENT OFFICE.

BERNARD MOHR, OF ST. LOUIS, MISSOURI.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 258,245, dated May 23, 1882.

Application filed January 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, BERNARD MOHR, of St. Louis and State of Missouri, have invented a new and useful Umbrella, &c., of which the following is a specification.

This invention relates to improvements in umbrellas, parasols, and the like devices that are self-opening—viz., which dispense with the necessity on part of the user to lift or raise the covering, &c., to open the umbrella and accomplish the said opening action automatically. I attain the said object by mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of an umbrella in open condition and provided and constructed according to my improvements. Figs. 2 and 3 are respective enlarged sectional elevations, chiefly to show the automatic mechanism in connection with the ribs, the said Fig. 2 representing the said parts in "open" condition and Fig. 3 the parts of umbrella in "closed" condition. Fig. 4 is an enlarged and inverted perspective view, to better show the manner in which the several ribs connect at the same joint.

Similar letters refer to similar parts throughout the several views.

A represents the usual handle or stick.

a represents the lower wire spring arranged in a mortise near the handle, so as to engage and release the slide B in order to hold the umbrella in open or closed conditions, in manner usual.

The ordinary umbrella has simply the main or top ribs, C, over which the cloth or covering is stretched, and the brace or lower ribs, C', that by means of the movable slide B open and close the umbrella when said slide is lifted or lowered along the handle. I also employ the top ribs, C, to secure the covering, &c.; also the lower ribs, C', in connection with the movable slide B. I combine with the said last-named parts a third series of ribs, which I shall call "middle," ribs D, together with the automatic-acting mechanism, as follows:

E represents in entirety a sleeve-housing, cast or constructed to consist essentially of the long tube or sleeve e, from which projects the annular housing e', and between said sleeve and housing exists an annular space, e², which is open below, but closed at top by the shoulder e³. (See Figs. 1, 2, 3.) The sleeve-housing

E, by its sleeve e, is fitted on the stick A near its top end, and fastened or made rigid in place. (See Figs. 2, 3.) It is upon the smooth annular face of the sleeve portion e that the spring and the middle slide-collar move or slide easily along when said parts are raised or lowered or when the umbrella is operated. The housing e' serves to hide the spring when same is fully compressed or when the umbrella is closed, (see Fig. 3,) and projecting from the lower edge of said housing is the top collar, e⁴, to which the inner ends of the top ribs are secured. (See Figs. 1, 2, 3.)

F represents the spring arranged on the sleeve portion e, passing up the space e², so that the upper end of said spring shall be held by the shoulder e³, and the lower end of the spring to abut against the middle collar, g. (See Figs. 1, 2, 3.) The purpose of the spring F is to expand and press upon the middle slide-collar, g, and cause same to slide down along the handle or its sleeve e, and by means of the middle ribs, D, to raise and completely lift the umbrella-covering. The closing action of the umbrella compresses the spring F, and in said condition the spring is retained hidden in the sleeve-housing as long as the umbrella is kept shut or closed.

As stated, the inner end of each top rib is fastened to the top collar, e⁴, the like end of each lower rib to the collar forming part of the lower slide, B, while the like end of each middle rib I fasten to the middle slide-collar, g, and in each case the fastening is done in manner usual by simply passing wire through the hole in the rib end, the wire being retained in the peripheral groove and slit of the collar. However, as I employ three series of ribs—viz., the top, the middle, and the lower—and, further, since every three of the said series of ribs are united at one joint, I make said joint as follows: Fig. 4 shows more clearly how the ends of the two lower ribs are united with the top rib at the same joint, H. The joint consists in securing to each top rib—say midway thereof—a U-shaped bearing, h, through the lower ends of which passes a pin, h'. The forked ends h² of a middle rib are secured to the pin ends, and the end of a bottom rib is secured to the same pin h, but in the middle thereof. Thus the end of the bottom rib comes in line under the

top rib, the ends of the middle rib on the outside, and all the ribs by means of the bearing secured to the same pin.

My improved umbrella, parasol, or the like device, thus constructed, is operated in the following manner: When the umbrella is in closed condition (see Fig. 3) the spring F, in a compressed state, is hidden within the sleeve-housing, the middle collar, *g*, being raised to its highest point, the respective ribs and covering 10 folded alongside of the stick, and the slide B is held fast by the lower wire spring, *a*.

To open the umbrella the operator presses inward the spring *a*, which releases the main slide B and permits the full force of the spring F to act—that is to say, the said spring F, in expanding its full length, presses downward the middle collar, *g*, and said pressure, by means of the middle ribs, is imparted to the top ribs in an upward direction, which causes the lower ends of said top ribs to become elevated, carrying at same time the lower ribs and their slide B, until the umbrella is in proper open condition, as shown in Figs. 1 and 2.

25 In closing the umbrella the slide B is pulled downward, carrying with it the lower and top ribs and covering. The middle ribs, however, in said closing action, have their outer end

brought against the stick, while their inner end carries upward the middle collar, *g*, to its highest or first position, hence compresses the spring F and hides same in the sleeve-housing. A simple pressure on the wire spring to release the movable slide B is all that is necessary to permit the automatic mechanism to open the umbrella and keep it open. 35

What I claim, and desire to secure by Letters Patent, is—

In combination with the handle or stick A, having a movable slide, B, and wire spring *a*, the sleeve-housing E, consisting of the sleeve *e*, housing *e'*, having collar *e''*, the top ribs, C, the spring F, the middle slide-collar, *g*, carrying the middle ribs, D, the movable collar or slide B, carrying the lower ribs, C', the outer end of each middle and lower rib being secured to a top rib, all said parts being constructed and arranged to operate in the manner and for the purposes set forth. 45

In testimony of said invention I have hereunto set my hand. 50

BERNARD MOHR.

Witnesses:

WILLIAM W. HERTHEL,
JOHN W. HERTHEL.