

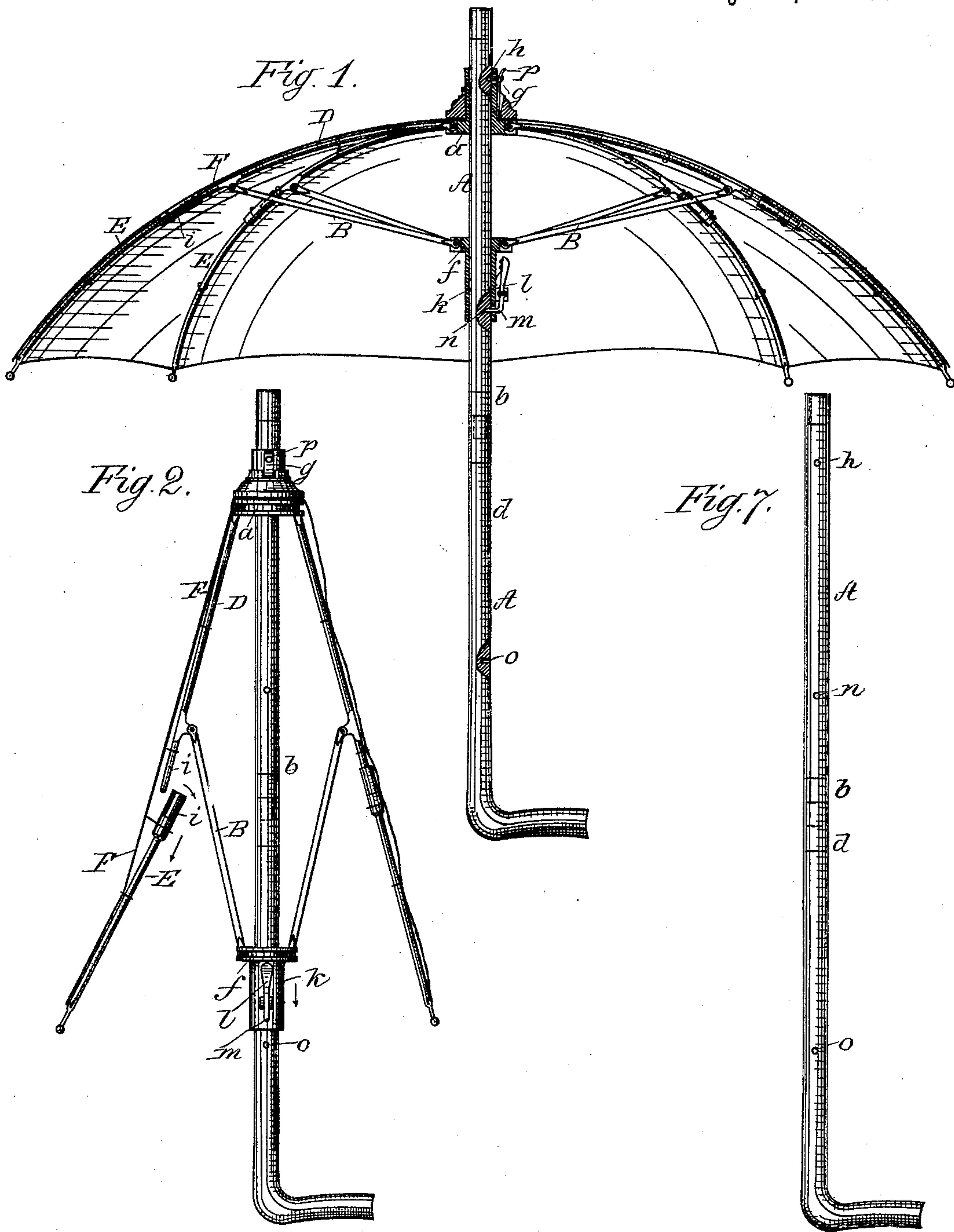
(No Model.)

2 Sheets—Sheet 1.

F. MÜSSEN.
FOLDING UMBRELLA.

No. 432,324.

Patented July 15, 1890.



Witnesses:

E. B. Clark

Arthur A. Erb

Inventor:

Ferdinand Müssen,

by

Max Georgi
his Attorney.

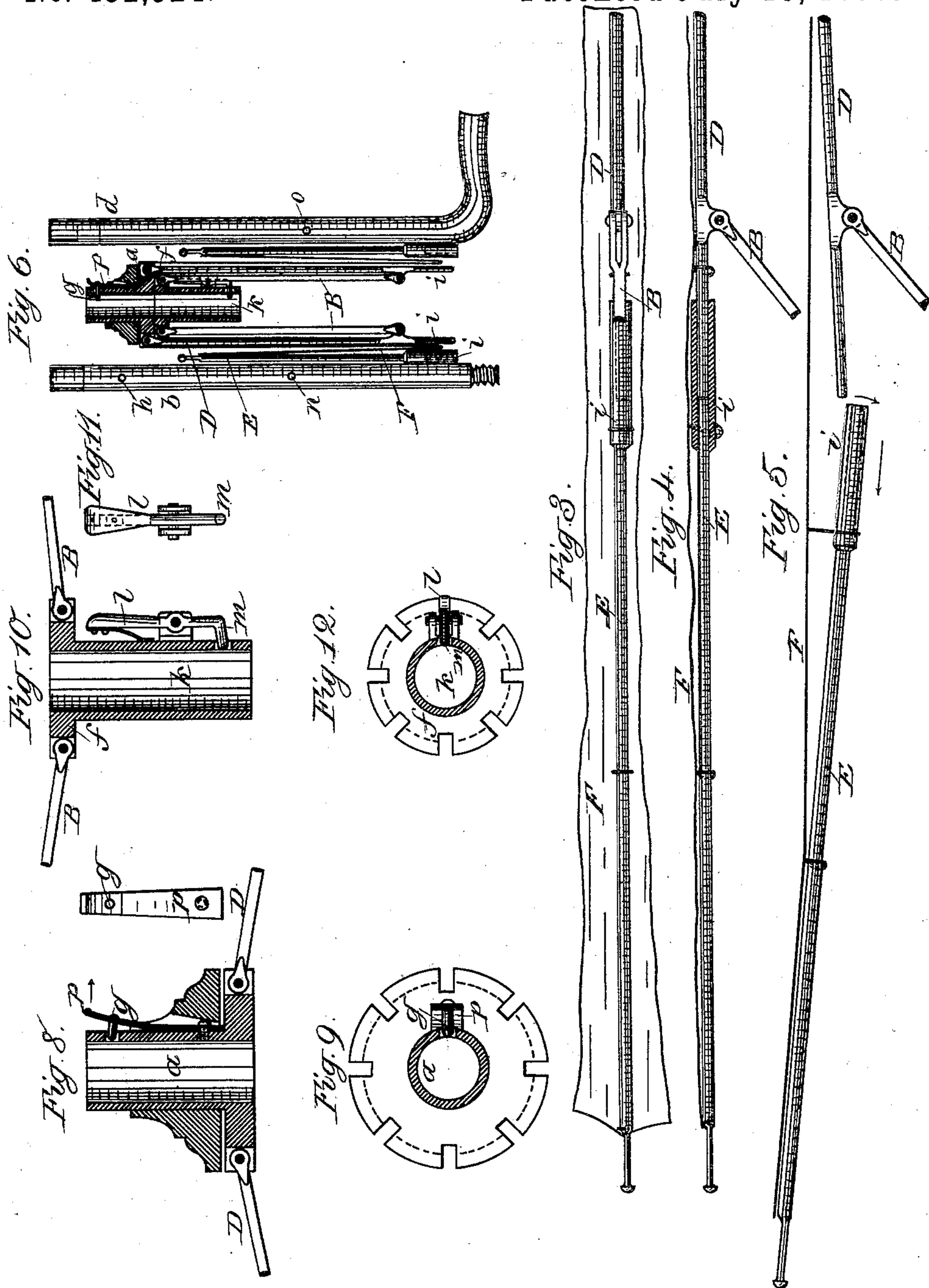
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UNITED STATES PATENT OFFICE.

FERDINAND MÜSSEN, OF WARSTEIN, NEAR ARNSBERG, GERMANY.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 432,324, dated July 15, 1890.

Application filed January 23, 1890. Serial No. 337,838. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND MÜSSEN, a subject of the German Emperor, and a resident of Warstein, near Arnsberg, Germany, have invented a new and useful Folding Umbrella, of which the following is a specification.

The invention (represented in Figures 1 to 12 of the drawings) relates to an umbrella arranged in such a manner that the same may be folded up into small compass, so that it may readily be packed away in a trunk or other luggage for traveling. The invention has also been so designed that the umbrella-stick may be conveniently employed as a cane. To produce these effects, the arrangement of the umbrella in its several parts must have certain characteristics, and the correlation of these parts in opening, closing, and folding up must be of a peculiar nature. This particular construction of the umbrella will now be described, reference being had to the drawings, in which—

Figure 1 represents a sectional view of the umbrella opened; Fig. 2, an elevation of the same nearly closed, in which position it may be folded up. Figs. 3, 4, and 5 are views showing the construction of the ribs for holding the covering material and their connection with the stretchers for spreading the umbrella. Fig. 6 represents an elevation, partly in section, of the umbrella folded up; Fig. 7, an elevation of the umbrella-stick adapted to be used as a cane; Fig. 8, a vertical central section of the upper crown-ring of the umbrella with the device for securing it to the umbrella-stick withdrawn preparatory to the insertion of the stick; Fig. 9, a sectional plan of the same; and Figs. 10, 11, and 12, detail views of the lower crown-ring and runner to which the stretchers are attached, Figs. 10 and 12 showing the latch *l* released preparatory to the insertion of the stick.

The construction of the umbrella and its several parts is as follows: The umbrella consists of a stick *A*, formed of two sections *b* and *d*. These sections are adapted to be so connected together and are painted in such a manner that the stick will have the perfect appearance of a cane as soon as it is removed from the frame of the umbrella. (See Fig. 7.) The umbrella-frame to be connected with the

stick *A* is of peculiar construction, and is provided with the crown-rings *a* and *f*, the ring *a* being of greater diameter than the ring *f*, so that the latter can occupy the position indicated in Fig. 6 with respect to the former when the umbrella is folded up for packing away. From this figure it appears that in this folded position the ring *f* is caused to abut against the crown-ring *a* and lie within the ribs *D E* of the umbrella, the stretchers *B* being folded inwardly. For this purpose they are somewhat shorter than the upper sections *D* of the ribs. The crown-ring *a* is provided with a spring-detent *g*, having a pin engaging with a recess *h* in the stick *A* when it is desired to assemble the parts to form the umbrella. (See Figs. 1 and 6.) The crown-piece *a* carries the ribs *D E*, consisting of the sections *D* and *E*, connected by a socket-joint, as clearly shown in Figs. 1 to 4. To the sections *D* of the ribs are jointed the stretchers or braces *B*, (see Figs. 1, 2, and 4 to 6,) while the lower sections *E*, to which is attached the covering *F*, may be folded outwardly whenever it is desired to fold the umbrella. (See Fig. 6.) The two rib-sections *D* and *E* are connected when the umbrella is in position preparatory to being opened, as indicated in Fig. 2. When assembled, the sections *D* and *E* are held in position by the covering-cloth *F* and the stretchers or braces *B*, as well as the friction existing at the point of connection *i*. The stretchers *b*, which are connected with the upper rib-sections *D*, are also jointed to the ring *f*, adapted to slide on the stick *A*, and provided with the sleeve or runner *k*. On this runner is mounted the pivoted spring-latch *l*, having a pin or detent *m*, adapted to engage either with the upper or lower recess *n* or *o*, according as the umbrella is opened or closed. This latch or lever affords the advantage of providing a firm and secure catch for maintaining the umbrella in its open or closed condition without necessitating the use of any mechanism which would mar the appearance of the stick *A*.

The umbrella so constructed is operated as follows: When it is desired to put the umbrella, folded as in Fig. 6, into condition for use, as in Fig. 1, the section *b* is screwed into the section *d*. The stick so produced is then

passed through the two crown-rings *a* and *f*,
the rib-sections D E, and consequently also the
stretchers B, having been previously spread
out radially in order to transfer the lower
5 crown-ring *f* to a position enabling its sliding
back and forth on the lower section *d*, while
the upper crown-ring *a* is secured to the sec-
tion *b* by the detent *g*. The parts having been
arranged so as to occupy the position indi-
10 cated in Fig. 2, the rib-sections D and E are
connected by slipping the ends of sections D
into the sockets in the sections E at *i*. The
umbrella is now ready for use and may be
held open or closed by the spring-latch *l*. To
15 fold the umbrella, the above operations are
reversed, and this may be effected quite as
simply as the assembling operation.

My invention may be applied to umbrellas,
parasols, and similar structures.

What I claim, and desire to secure by Let- 20
ters Patent, is—

A folding umbrella composed of a two-part
stick A, having the recesses *h n o*, and a frame
consisting of the two-part ribs D E, connected
with the covering F, in combination with 25
stretchers B, connected to the upper sections
D, and crown-rings *a f*, provided with spring-
catches *p l*, whose pins *g m* engage with the
recesses *h n o* for connecting the stick A with
the frame, all substantially as described. 30

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

FERD. MÜSSEN.

Witnesses:

JEAN GRUND,
EMIL HESS.