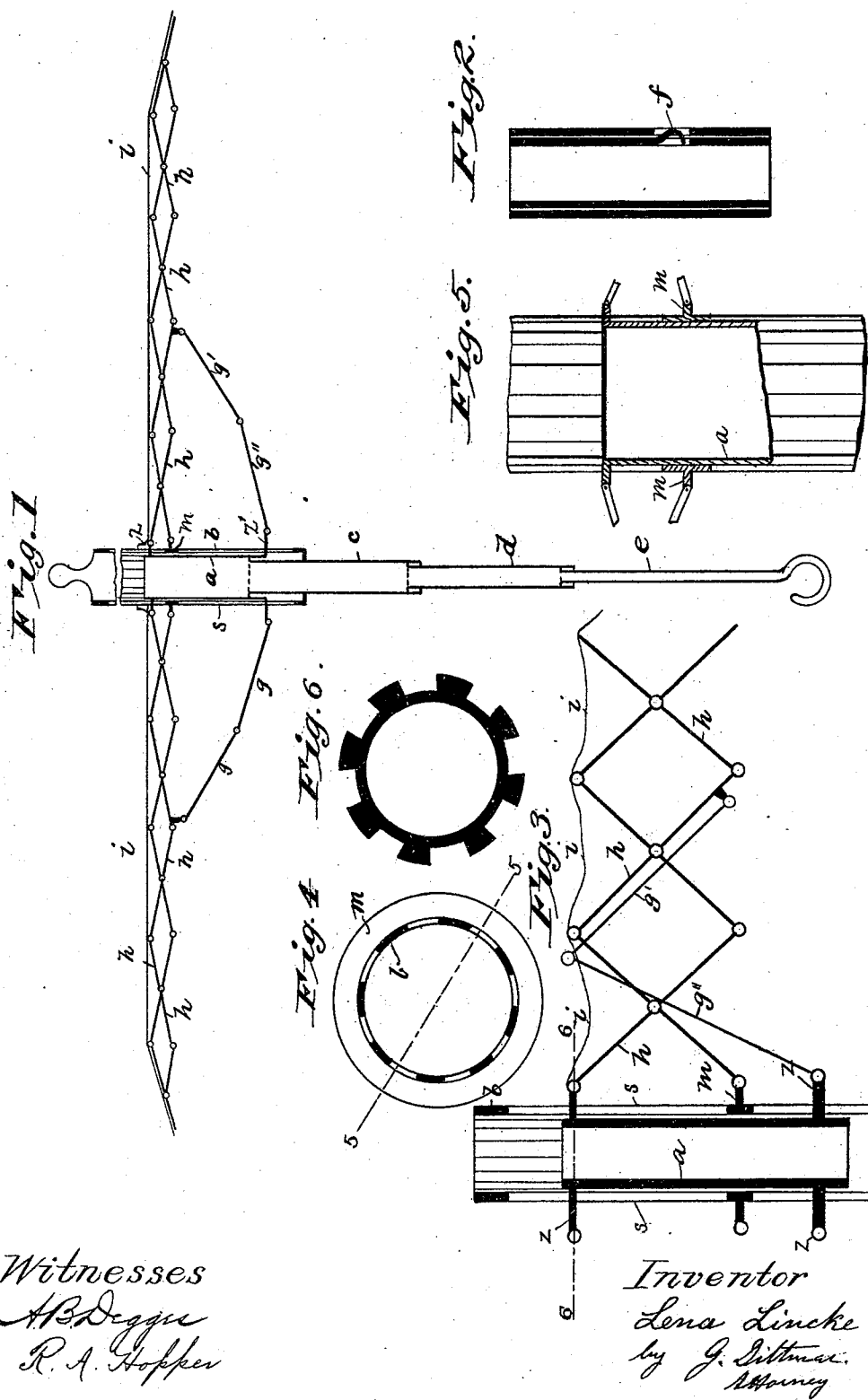


(No Model.)

L. LINCKE.
FOLDING UMBRELLA.

No. 491,805.

Patented Feb. 14, 1893.



UNITED STATES PATENT OFFICE.

LENA LINCKE, OF BERLIN, GERMANY.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 491,805, dated February 14, 1893.

Application filed December 10, 1891. Serial No. 414,600. (No model.)

To all whom it may concern:

Be it known that I, LENA LINCKE, of the city of Berlin, Kingdom of Prussia, in the German Empire, have invented a new and useful Improvement in Umbrellas, of which
5 the following is a specification.

The object of the present invention is to produce an umbrella, which is capable of being folded into a small and short space when
10 not in use.

Figure 1 of the accompanying drawings shows the open umbrella in vertical section. Fig. 2 is a section showing the means of fastening the telescope tubes used as the handle.
15 Fig. 3 shows the connection of the system of levers with the tubes, the umbrella being in half open state. Fig. 4 is a horizontal section through the immovable tube *b*. Fig. 5 is a vertical section on line 5—5 Fig. 4 and Fig. 6
20 is a horizontal section through tube *a* on the line 6—6 of Fig. 3.

The stick or handle of the umbrella is composed of very thin tubes *a b c d e* which slide within another like a telescope and are held
25 open in the ordinary way by springs *f* Fig. 2 the looped ends of which enter into an opening in the adjacent outer tube when brought opposite said opening. The widest tube *b* is immovable and provided with six or eight
30 slots, *s* Fig. 3 which are equi-distant from each other and run parallel to the axis. In these slots the arms *z z'* projecting from the inner tube *a* are guided. The slots *s* are divided in about the middle of their length by a ring
35 *m* which remains full in the metal, forming the tube *b*. A system of levers *h* is hinged together at their ends and in their middles, as shown, which support the fabric *i* of the umbrella. There are six or eight such lever
40 combinations provided, and the inner extremity of one of the inner levers of each system is hinged to arm *z* and the inner end of the other inner lever is pivotally secured to the ring *m*. The arms *z'* are connected to the
45 lever combination by jointed links *g' g''*, pivotally connected at their ends to said arms and the lever system. When the umbrella is closed and the tubes are pulled out till the respective springs *f* fall into their notches, it
50 is evident that the arms *z* by the descent of

tube *a* will approach the ring *m* thereby the systems of levers *h* are thrown out radially, and the fabric *i* is extended. At the same time the arms *z'* by their descent give a slight tension to the levers *g g'*, which slightly bends
55 the surface of the umbrella downward, and prevents its being turned inside out by a strong wind.

Having now described my invention what I believe to be new and desire to secure by Letters Patent, is:—

1. The combination, in an umbrella, of the stick having a movable portion, a series of lever-systems pivotally connected to said stick and links connecting said lever systems and the movable portion of the stick, substantially
65 as described and for the purposes specified.

2. The combination, in an umbrella, of the stick formed of telescopic sections, a plurality of lever-systems each of which is pivotally secured to a movable and an immovable
70 section of said stick, and links connecting said movable section with said lever-systems, substantially as and for the purposes specified.

3. The combination, in an umbrella, of the stick formed of telescopic sections, the upper of which sections is immovable and formed above and below its center with a series of slots and the adjacent movable section formed at its extremities with outwardly extending
80 projections moving in said slots, a plurality of lever-systems one of the inner levers of each of which systems is pivotally secured to the upper projection of said movable section of the stick and the other of the inner levers of
85 each system being secured to about the center of the immovable section of the stick, links pivotally secured at their inner ends to the lower projections of said movable section and at their outer ends to said levers, and
90 means for holding said umbrella in its open position.

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

LENA LINCKE, (GEBR. LESKE.)

Witnesses:

W. H. EDWARDS,
W. HAUPT.