

No. 661,169.

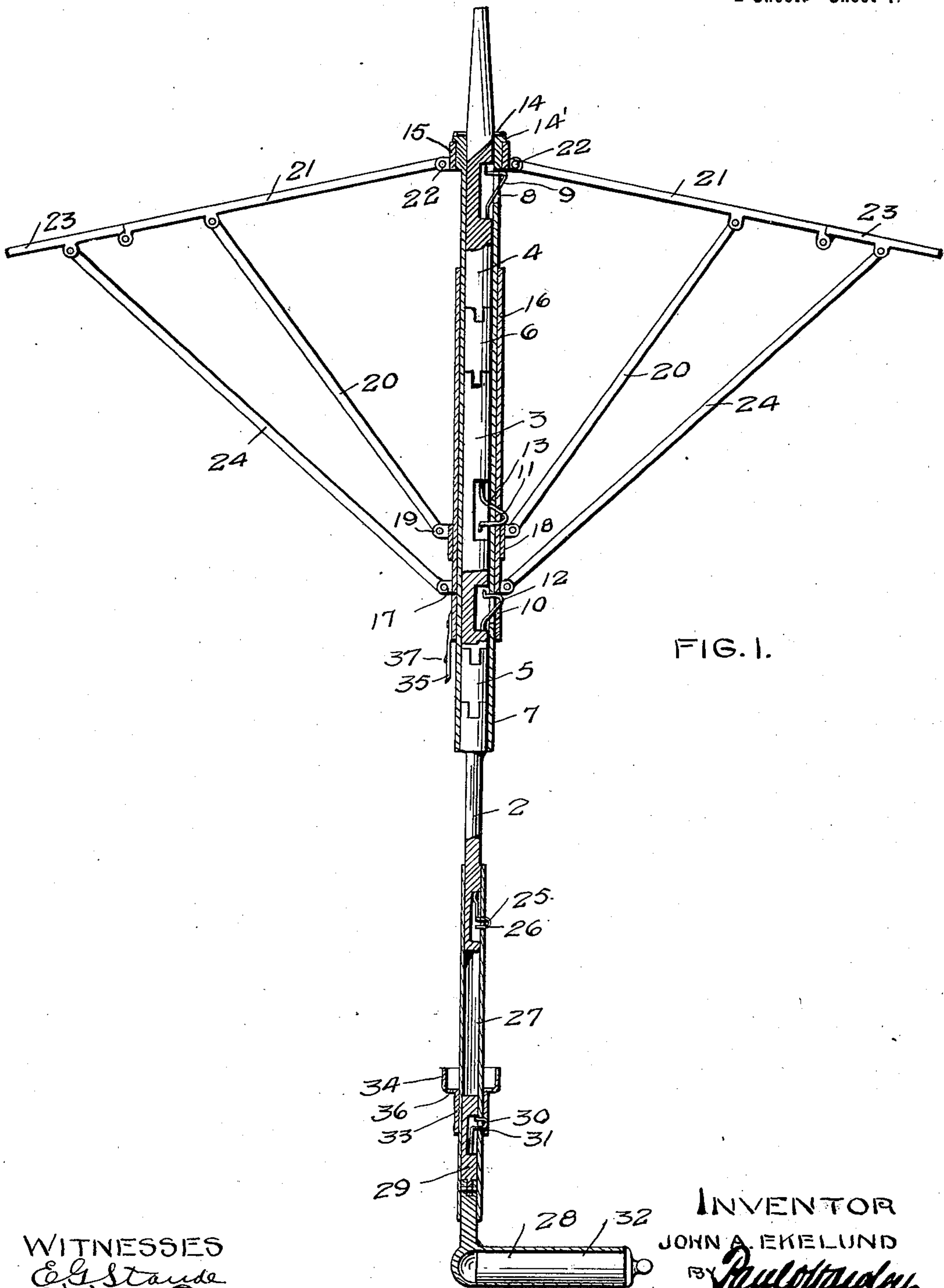
Patented Nov. 6, 1900.

J. A. EKELUND.  
FOLDING UMBRELLA.

(Application filed Feb. 5, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES  
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*Richard Paul*

INVENTOR  
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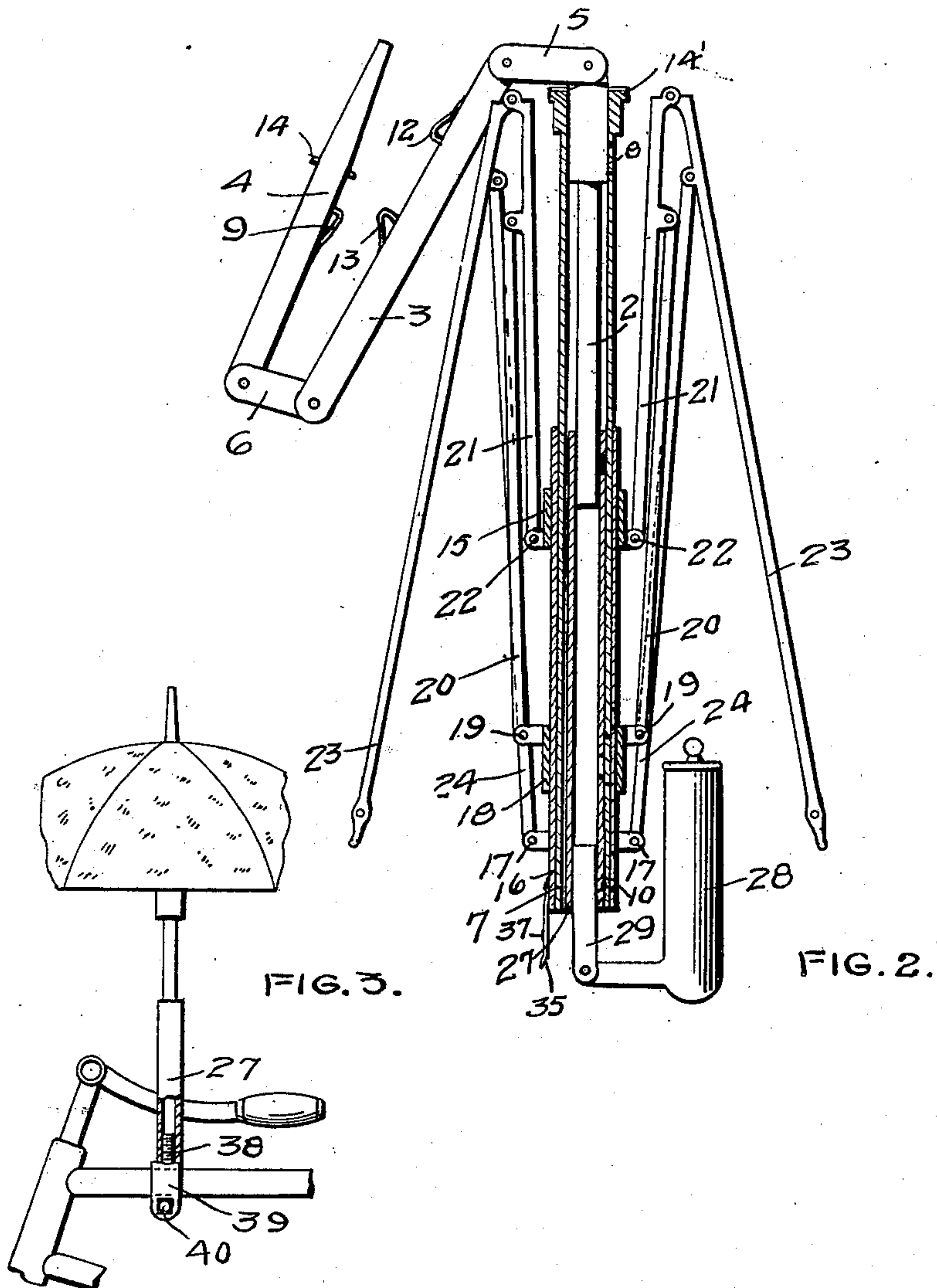
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# UNITED STATES PATENT OFFICE.

JOHN A. EKELUND, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-THIRD TO ALFRED PETERSON, OF SAME PLACE.

## FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 661,169, dated November 6, 1900.

Application filed February 5, 1900. Serial No. 3,975. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. EKELUND, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Folding Umbrellas, of which the following is a specification.

The invention relates to folding umbrellas; and the primary object of the invention is to provide an umbrella that can be readily folded into a small compact bundle and carried in the pocket or other convenient receptacle.

A further object is to provide a folding umbrella which can be shut up on the stick or rod and used as an ordinary umbrella.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a view of an unfolded umbrella embodying my invention. Fig. 2 is a view showing the umbrella folded. Fig. 3 shows the manner of attaching the device to a bicycle-frame.

In the drawings the stick or rod of the umbrella is shown divided into three sections 2, 3, and 4, pivotally connected by links 5 and 6. By providing two joints in the umbrella-stick I am able to fold it more compactly; but, if preferred, the stick may be made in two sections only, which will simplify the construction somewhat, but will not permit folding to such a convenient size to carry in the pocket. Upon the umbrella-stick I provide a tube 7, slidable thereon, having a slot 8 near its upper end to receive a spring 9 in the section 4 and also provided with corresponding slots 10 and 11 near its lower end to receive springs 12 and 13, provided in the sections 3. A pin 14, forming a stop for said tube, is provided near the upper end of the stick-section 4, and the walls of said tube near said stop are thickened and provided with a flange 14'. I provide a notch 15, adapted to slide freely over said tube and fit snugly over the thickened portion of its walls against said flange when the umbrella is opened and held in position thereon by the spring 9. Slidably arranged upon the tube 7 is a runner 16, over which the notch 15 is slidable, having slots

registering with the slots 10 and 11 in said tube to permit the springs 12 and 13 to enter therein and lock both tube and runner against movement in either direction. Near the lower end of the runner I provide a series of lugs 17, and above said lugs I arrange an auxiliary runner 18, having lugs 19. A series of braces 20 are connected to the lugs 19 and to the first joints 21 of the umbrella-ribs, the inner ends of said joints being pivotally connected to lugs 22 on the notch 15, while their outer ends are pivotally connected to the second joints 23 of said ribs, said second joints being supported when the umbrella is raised by a series of brace-rods 24, pivoted on the lugs 17.

The lower end of the section 2 of the umbrella stick or rod is preferably smaller than its upper portion and is provided with a spring 25, adapted to enter a slot 26 in the end of the tube 27, that telescopes with said section and forms an extension upon the lower end of the stick. I prefer to provide a hollow handle 28, having a jointed stem 29 telescoping with the lower end of the tube 27 and provided with a spring 30 to enter a slot 31 in said tube, whereby the handle is held securely in position when the umbrella is in use. The long stem of the handle being jointed permits it to be folded compactly and at the same time provides a long bearing-surface within the tube 27 to aid the spring in holding the handle securely in the end of the umbrella-stick. The handle being hollow any small article, such as the folding fan 32, (shown in Fig. 1,) may be placed in the handle and conveniently carried.

It is sometimes desirable to use the umbrella without folding the umbrella-stick each time the device is shut. I therefore provide a short sleeve 33, held in place on the tube 27 by the spring 31 and provided with a flange 34, forming a cup or cap to receive the end of the runner 16, which is provided with a spring 35, adapted to enter a hole 36 in said flange and held in position therein by a knob 37.

In Fig. 3 I have shown the device attached to the frame of a bicycle, and in order that this attachment may be conveniently made I prefer to interiorly thread the lower end of



the tube 27 to receive a bolt 38, provided on a clamp 39, that is held in position on the horizontal bar of the frame by a bolt 40 or in any other suitable way.

5 To unfold the device, the operator pushes the tube 7 up over the joints in the stick against the stop 14, at the upper end thereof. The notch 15 is then moved up against the shoulder at the upper end of said tube and  
10 is locked there by the spring 9. This movement of the notch 15 carries up the inner ends of the umbrella-ribs, and the operator, grasping the runner 16, can easily push it up over the springs 12 and 13, raising the brace-  
15 rods 20 and 24 and forcing the outer portion of the umbrella-ribs into their proper position. The auxiliary runner 18, as heretofore stated, slides freely over the runner while it is being moved over the umbrella-stick to its  
20 proper position, thus preventing any binding or cramping of the parts during the operation of unfolding the umbrella. The auxiliary runner 18 having been adjusted to its proper position on the runner will be prevented from  
25 slipping farther out thereon by the spring 13. The operator having moved the runner to its proper position will insert the end of the section 2 into the tube 27, and having inserted the stem of the handle into the opposite end  
30 of the tube the umbrella will be ready to use. If it is desired to use the device as an ordinary umbrella without folding, the runner 16 is slid down over the tube into the cap formed by the flange 34, where it will be locked by  
35 the spring 35 until the operator desires to open it again.

In various ways the details of construction may be modified by one skilled in the art without departing from the spirit of my in-  
40 vention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a folding umbrella, the combination  
45 with a stick or rod composed of several jointed sections, of a tube 7 slidable thereon, means for locking said tube over the joints in said stick, the notch 15 slidable on said tube, means for locking said notch at the upper end of said  
50 tube, the ribs composed of sections pivoted together and having their inner sections pivoted to said notch, a runner slidable on said tube, braces pivotally connected to said runner and to the outer sections of said ribs, a  
55 collar 18 slidable on said runner, and a series of braces pivotally connecting said collar and

the inner sections of said ribs, substantially as described.

2. In a folding umbrella, the combination, with a stick composed of several sections piv- 60  
oted together, of a tube slidable on said stick, means for locking said tube over the joints between said sections, the notch 15 slidable on said tube, the jointed ribs pivoted on said notch, a runner slidable on said tube, braces 65  
connecting said runner and the outer sections of said ribs, an auxiliary runner slidable on said runner, braces pivotally connecting said auxiliary runner and the inner sections of  
said ribs, a tube telescoping with the lower 70  
end of said stick, and a handle fitting within the open opposite end of said tube, substantially as described.

3. The combination, with the umbrella stick or rod, of a sleeve 33 fixed thereon, a flange 75  
34 provided on said sleeve and having a hole or opening 36, a runner 16 slidable on said rod, the notch 15 slidable on said rod and runner, the ribs pivoted on said notch, the auxiliary runner 18 also slidable on said run- 80  
ner, the braces 20 connecting said auxiliary runner and said ribs, and the spring 35 provided on said sleeve and adapted to enter the hole 36 in said flange, substantially as de-  
85 scribed.

4. The combination, with an umbrella stick or rod composed of several sections pivotally connected and having a stop 14 near its up-  
per end, of a tube slidable on said rod and having an enlarged upper end to engage said 90  
stop, springs for locking said tube over the joints in said rod, a runner slidable on said tube and locked thereon by said springs, a notch slidable on said tube and runner and fitting over the enlarged upper end of said 95  
tube, a spring locking said notch on said enlarged end, a series of jointed ribs pivotally connected with said notch, an auxiliary runner freely slidable upon said runner and adapted to be locked thereon by one of its 100  
locking-springs, braces pivotally connected with said auxiliary runner and with the inner joints or sections of said ribs, and similar braces pivotally connected with the lower end  
of said runner and the outer joints of said 105  
ribs, substantially as described.

In witness whereof I have hereunto set my hand this 31st day of January, 1900.

JOHN A. EKELUND.

In presence of—

RICHARD PAUL,  
M. C. NOONAN.