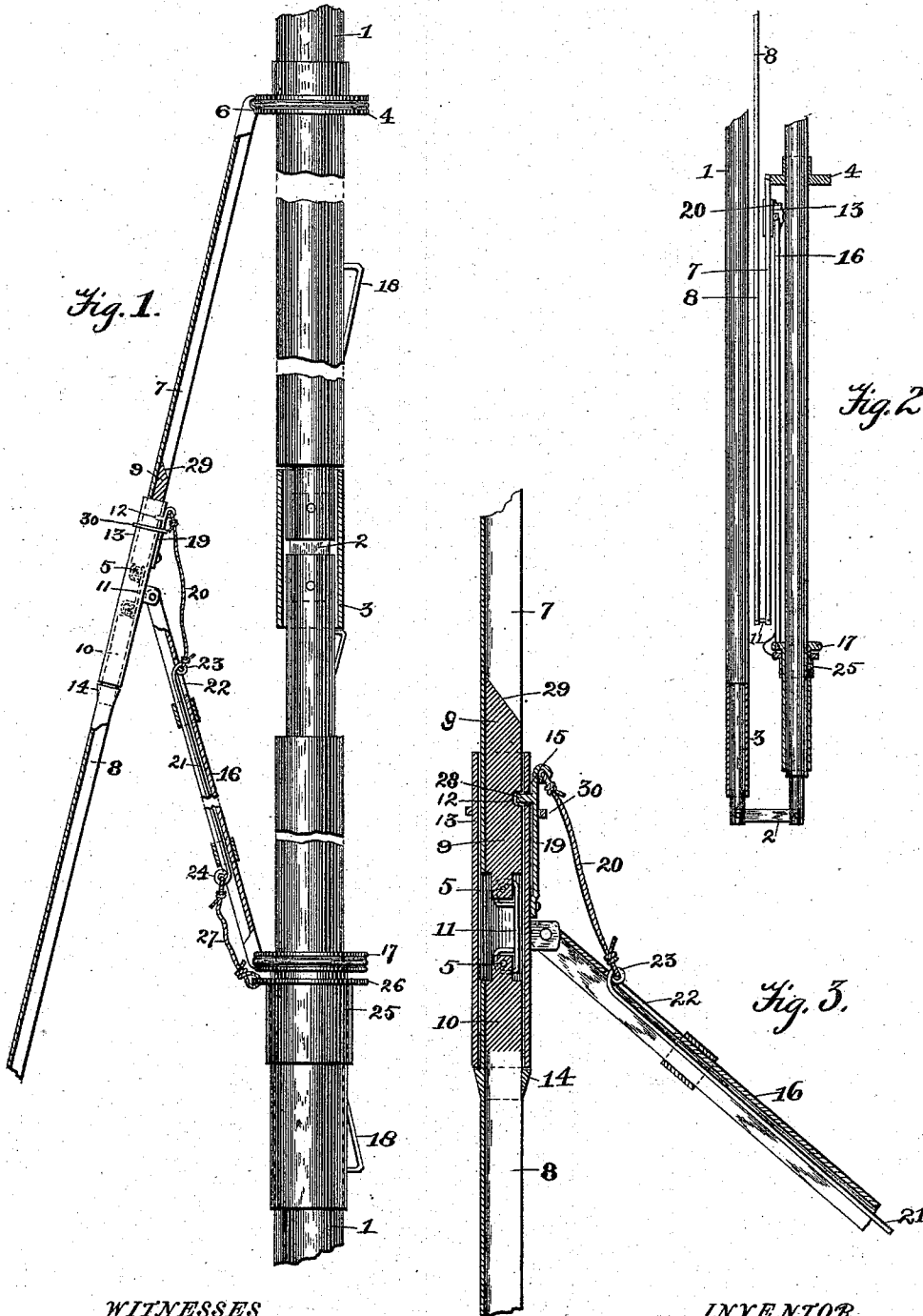


(No Model.)

D. A. SMITH, Jr.
FOLDING UMBRELLA.

No. 528,212.

Patented Oct. 30, 1894.



WITNESSES
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DANIEL A. SMITH, JR., OF WASHINGTON, DISTRICT OF COLUMBIA.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 528,212, dated October 30, 1894.

Application filed April 30, 1894. Serial No. 509,586. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. SMITH, JR., a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Umbrellas; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a new and useful improvement in umbrellas and consists in the construction and arrangement of parts hereinafter described and definitely pointed out in the claims.

The aim and purpose of this invention are to provide an umbrella which can be folded into a small space, the handle folded upon itself and be readily placed in a trunk or other receptacle and which when open all the parts will be securely locked in position and when desired can be used as a walking stick and which also unites simplicity and cheapness in construction. These objects are obtained by the construction illustrated in the accompanying drawings wherein similar numbers of reference indicate corresponding parts in the several views, and in which—

Figure 1 is a view partly in section, showing my improved umbrella frame partly shut. Fig. 2 is a view, partly in section, showing the umbrella frame and stick folded. Fig. 3 is a sectional view showing the jointed ribs, sleeve over the rib and spring lock for holding the sleeve in position and a portion of the brace.

In the drawings 1 represents the handle or stick made in two parts, hinged together by the link 2. Adjacent to the link 2 the handle is countersunk or cut away and on this countersunk portion a sleeve 3 is adapted to slide over the link when the handle is unfolded or straightened out and thus make a rigid joint. Near the upper end of the stick a notched block 4 is rigidly secured and pivoted to this block in any suitable manner are the ribs 6. The ribs are made in two sections 7 and 8. The ribs are of the usual U shape

in cross section and at their adjacent ends are provided with the blocks 9 and 10. Secured to the adjacent ends of these blocks are eyes 5 and pivotally secured to these eyes are links 11 thus making a hinge connection between the portions 7, 8 of the ribs. The block 9 is provided with an aperture 12.

13 is a sleeve adapted to loosely slide over the ribs. The downward and outward movement of the sleeve is prevented beyond the hinge point of the two sections by means of the projection or collar 14 on the lower section 8. The sleeve is provided with an aperture 15. When the sleeve is down over the adjacent ends of the ribs it makes a rigid joint between the two sections and in this position the apertures 12 and 15 register.

Pivotally secured to the sleeves 13 are the braces 16. The lower ends of these braces are pivotally secured to the runner 17 on the stick. 18 are springs of the ordinary construction adapted to hold the runner in position when the umbrella is either shut or in an open position.

19 are leaf springs having their lower ends rigidly secured to the sleeves 13 slightly above the pivotal points of the sleeves and braces. To the upper and free ends of the springs 19 are secured the cords or wires 20. In the braces 16 are slidably secured the rods 21. The braces near their upper or outer ends are provided with the elongated slots 22 through which the projections or eyes 23 of the rods 21 extend. To these eyes 23 the lower ends of the wires or cords 20 are secured. The lower ends of the rods 21 are provided with eyes 24.

On the runner 17 is secured the sleeve 25 the upper end of which is provided with an annular flange 26. Secured to the flange 26 are wires or cords 27 the opposite ends of which are secured to the eyes 24 on the rods 21.

28 is a lateral pin on the spring 19 adapted to enter the apertures 15 and 12 in the sleeve and block 9, respectively. The upper end of the block 9 is provided with a bevel 29 as shown in Fig. 3 and for a purpose hereinafter described.

30 is a ring on the sleeve 13 adapted to prevent an undue outward movement of the spring when the spring is moved to withdraw the pin from the apertures.

5 By providing the stick with a countersunk portion adjacent to its hinged point and placing the sleeve thereon I am enabled to slide the runner 17 over the sleeve 3 in opening or lowering the umbrella and it will be seen that
10 when the umbrella is lowered it can be used as a walking stick as umbrellas of the usual construction.

When the umbrella is folded ready to be placed in a trunk or other receptacle, it will
15 be seen by referring to Fig. 2 that the runner 17 is above the hinge point of the stick and when it is desired to unfold the umbrella the two portions of the stick are brought parallel and the sleeve 3 slid up over the joint and the
20 runner 17 drawn down, the ribs assuming the position shown in Fig. 1. By drawing the runner farther down the stick, the runner will engage the lower spring 18 on the stick as in umbrellas of the ordinary construction
25 and the sleeve 13 will be slid down over the hinge joint of the ribs thereby making a rigid joint. When the sleeve 13 is being slid down, the pin on the leaf spring will strike the bevel 29 on the block 9 and when the sleeve is over
30 the joint the spring will force the pin through the apertures 15 and 12, the apertures 15 and 12 registering as hereinbefore described.

It will readily be seen by this construction that the sleeve 13 is rigidly locked in position
35 and cannot move in either direction and when the umbrella is opened it will be impossible for the sleeve to slide up the ribs thereby breaking the joints and that the umbrella will then open as an ordinary umbrella; or when the
40 umbrella is in an open position the sleeve will be held against sudden gusts of wind and that it will be impossible to turn the umbrella wrong side out.

The umbrella is closed in the usual manner and when it is desired to fold the same
45 for packing, the operator slightly opens the same and drawing down the sleeve 25 on the runner 17 the leaf springs 19 will be drawn back by means of the connecting wires 27, rods 21 and wires 20 releasing the pins on the
50 springs from the apertures 15 and 12, and unlocking the sleeve from the ribs. Now by grasping the braces 16 the braces will be forced toward the stick and the sleeve slid up the
55 ribs thereby releasing the joints. The runner is then forced up the stick and the ends 8 of the ribs are thrown back. The handle is now folded as before described and the umbrella is ready for packing as shown in Fig. 2.

60 By providing the ribs with the collars or projections 14 on the outer sections 8, if the lateral pins 28 on the springs would fail to enter the apertures 15 and 12, the collars will prevent the movement of the sleeves 13 on
65 the ribs farther than the hinged joints.

Having thus described my invention, what

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

1. In an umbrella, the combination with a stick, of ribs pivoted to the stick formed of
70 two sections, hinge connections for the sections, sleeves slidably secured on the ribs adapted to slide over the hinges and adjacent ends of the sections, automatic locks on the sleeve for preventing the movement of the
75 sleeve in either direction when the sleeves are over the hinges, a runner on the stick, braces connecting the runner and sleeves, means on the stick for releasing the locks and connections between the locks and said
80 means, substantially as described.

2. In an umbrella the combination with a stick, of ribs pivoted to the stick made in two sections, hinge connections for the sections, blocks in the outer ends of the inner sections
85 having apertures therein, sleeves on the ribs adapted to slide over the hinges connecting the sections having apertures therein registering with the apertures in the blocks when the sleeves are over the hinges, spring actu-
90 ated pins adapted to normally engage the apertures when the apertures register, a runner on the stick, braces connecting the runner and sleeves, means on the stick for disengaging the pins from the apertures against the
95 tension of the springs and connections between said means and pins, substantially as described.

3. In an umbrella, the combination with a stick, ribs pivoted to the stick formed of two
100 sections, a hinge connecting the sections, a sleeve slidably secured on the ribs and adapted to slide over the hinge and adjacent ends of the sections, a projection on the outer section adapted to prevent the outward movement
105 of the sleeve beyond the hinge, a lock on the sleeve for preventing the movement of the sleeve in either direction a runner on the stick, braces connecting the runner and sleeves means on the stick for actuating the
110 locks and a connection between the locks and said means, substantially as described.

4. In an umbrella, the combination with a stick, of ribs pivoted to the stick made in two sections, a hinge connection for the sections,
115 a block in the outer end of the inner section having an aperture therein, a sleeve on the ribs adapted to slide over the hinge connecting the sections having an aperture therein registering with the aperture in the block in
120 the inner section when the sleeve is over the hinge leaf spring on the sleeve, a lateral pin on the free end of the spring adapted to engage the apertures, a runner on the stick, braces connecting the runner and sleeves a
125 sleeve on the runner and connections between the sleeve and springs, substantially as described.

5. In an umbrella, the combination with a stick, of ribs pivoted to the stick made in two sections, hinge connections for the sections,
130 sleeves slidably secured on the ribs adapted

to slide over the hinges and adjacent ends of
the sections, a runner on the sticks, braces
connecting the runner and sleeves, locks for
rigidly locking the sleeves in position when
5 over the ends of the sections and hinge con-
nections and means for releasing said locks,
substantially as described.

In testimony whereof I affix my signature in
presence of two witnesses.

DANIEL A. SMITH, JR.

Witnesses:

G. ARTHUR PENNINGTON,
D. G. STUART.