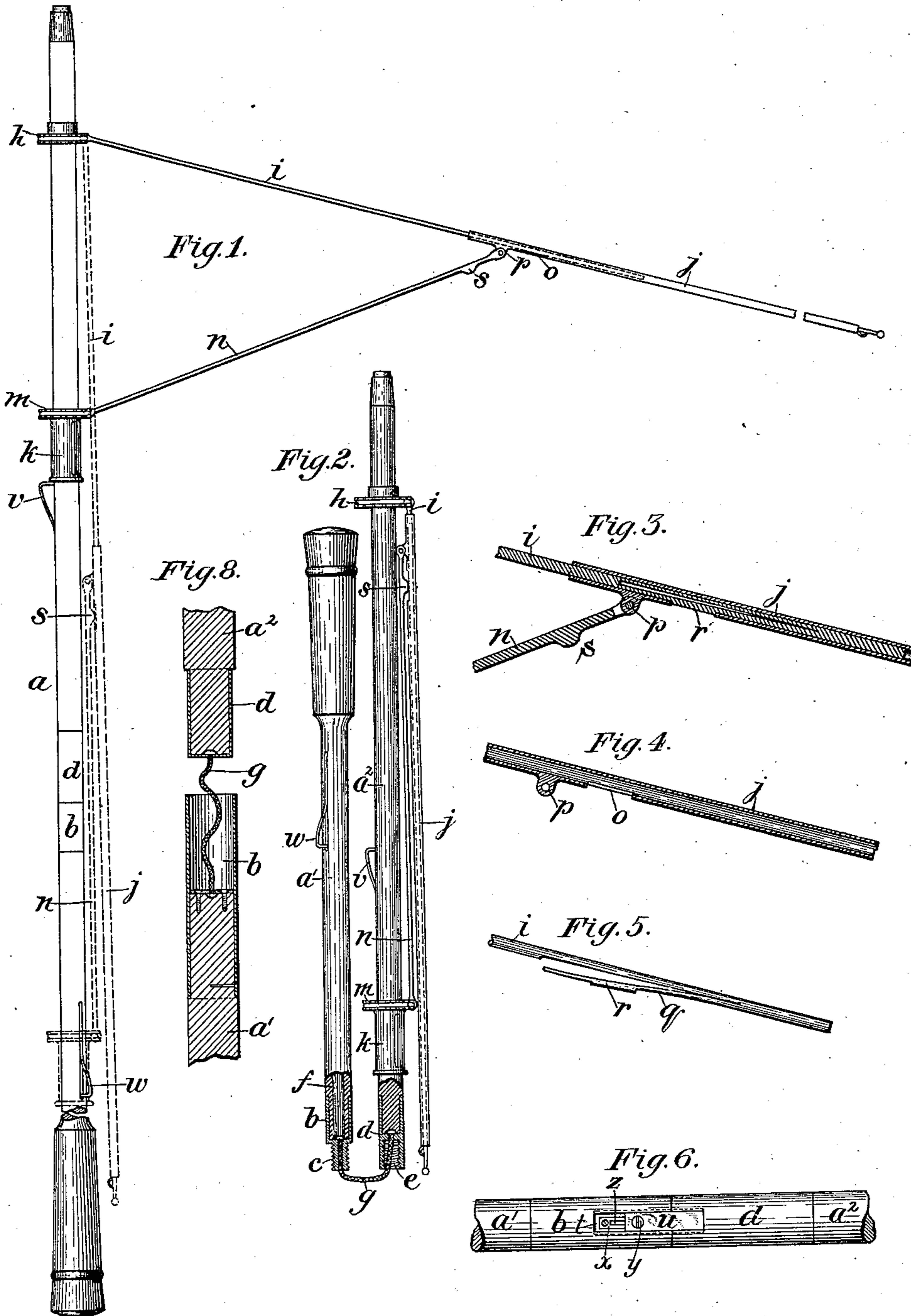


(No Model.)

J. W. RIDDLE.
FOLDING UMBRELLA.

No. 363,850.

Patented May 31, 1887.



Witnesses.

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JAMES W. RIDDLE, OF PITTSBURG, PENNSYLVANIA.

FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 363,850, dated May 31, 1887.

Application filed February 25, 1886. Serial No. 193,205. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. RIDDLE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Folding Umbrellas; and I do hereby declare the following to be a full, clear, and exact description thereof.

My improvement in folding-umbrellas relates particularly to the frame and stick, its object being to simplify and cheapen the construction and improve the operation of the same.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in which--

Figure 1 is an elevation of the stick and a portion of the frame shown in a raised or open position. Fig. 2 is a like view with the parts folded together. Figs. 3, 4, 5, 6, and 7 are details illustrating the construction and operation of the various parts. Fig. 8 is a sectional view of a modified form of joint.

Like letters of reference indicate like parts in each.

The stick or staff *a* is made in two parts, *a'* *a''*, one of which is fitted with a metallic ferrule, *b*, having a threaded pin, *c*, and the other with a metallic ferrule, *d*, having a threaded socket or box, *e*. One of the pieces, preferably the handle-piece *a'*, has a bore or cavity back of the ferrule, and the pin *c* is hollow, so that the two parts *a'* and *a''* may be connected by a flexible wire, chain, or cord, *g*, the ends of which are upset or knotted to form heads, which are retained in place by suitable shoulders or flanges in the ferrules *b d*. This construction prevents the separation of the two pieces *a' a''* when they are unscrewed and the stick is folded together, and the bore or recess *f* affords room for the cord *g* to slide inside when the parts are screwed together, so as not to interfere with such operation. The ribs are composed of two parts, *i j*. The parts *i* are pivoted or hinged to a ring or crown-piece, *h*, near the point of the stick, in the usual way. The parts *j* are tubular and slide on the parts *i*. On the stick *a* is the usual sliding runner, *k*, having a ring, *m*, to which the braces *n* are pivoted. The outer ends of

the braces are pivoted to the lugs *p* on the inner ends of the sliding rib-sections *j*. Outside of the lug *p* the section *j* is provided with a slot, *o*, and the outer end of the rib-section *i* is provided with a spring, *q*, having a thickened portion or projection, *r*, which fits snugly into the slot *o*, and in that position acts as a catch or lock to hold the section *j* in position at the outer end of the section *i*. On the under side of the brace *n* is a lug or projection, *s*; and the lug *s* and slot *o* are equidistant from the pivotal point *p*, so that when the umbrella is closed the projection *s* can be caused to act in contact with the projection *r* and force it back out of the slot *o* into the bore of the rib-section *j*, so that it may be pushed up onto the section *i*, thereby shortening the rib.

In Figs. 6 and 7 I show, respectively, side and cross sectional views of the ferrules *b d* when in a jointed position. In the sides of the ferrules, at their adjacent ends, are dovetailed grooves or recesses *t*, in which is a counterpart slide, *u*. When the parts *a' a''* are connected, the slide *u* is pushed forward until its end enters the other section, as indicated in Fig. 6, and then it will prevent the unscrewing of the sections. The stick *a* is provided with the usual springs, *v w*, one for maintaining the runner *k* in its open position and the other for holding it in its closed position, in the usual manner.

Thus constructed the operation of my improvement is as follows: When the parts are in the condition shown in Fig. 1, they operate and can be used in all respects as in the ordinary umbrella; but when it is desired to fold the umbrella, the ribs are closed, as indicated by dotted lines in Fig. 1, and then they are pressed by hand against the stick. This causes the projections *s* to force the projections *r* into the bore of the tubular sections *j*, and while these parts are held in that position by hand the spring *w* is depressed, and force is applied to the runner *k* to push it in the direction of the point of the stick. This causes the braces *n* to force the tubular sections *j* up on the sections *i* until their ends encounter the crown piece or ring *h*, as indicated in Fig. 2. The handle part *a'* of the stick is then unscrewed and laid alongside of the cover, parallel to the part *a''*, as indicated in Fig. 2. The parts be-

ing secured in that position by a rubber band or suitable cover, the umbrella is in a condition to pack into a trunk or shawl-strap for transportation or to be put away in a suitable receptacle.

The advantages which I claim for my improvement are its great cheapness, simplicity in construction and operation, and durability of the parts.

I do not limit myself to the precise form of the spring *q*, nor to providing said spring with a projection, *r*, because the spring may be used without said projection, the tapering ends of the projections *s* permitting it to clear the ends of the slots when the sliding rib-sections *j* are pushed up on the rib-sections *i*.

A great advantage of the tubular lower section is that the cloth cover can be fastened to it throughout its entire length without interfering with its movement on the upper section, *i*, and thus the cover can be properly and securely fastened. In putting the cover on it is fastened at the top or crown-piece *h*, and at the middle and outer edge to the ends of the telescoping section *j*, and also at various intermediate points throughout the length of the section *j*.

In order to prevent the slide *u* from moving accidentally or becoming loose, I place a flat spring, *x*, under it, one end of the spring being fastened to the stick and the other end bearing up against the under side of the slide *u*. In order to prevent the slide *u* from slipping out of the recess *t* when the stick is unjointed, I provide it with a pin or stop, *y*, which moves in a closed slot, *z*, in the spring *x*. Then, if it is desired to remove the slide, the spring *x* is pressed down flat, so as to release the pin, when the slide can be removed with ease.

I do not limit myself to the use of the joint having the flexible-cord connection with a

threaded box and pin alone, as it may be used with an unthreaded joint, as shown in Fig. 8, and it may be used with jointed canes, fishing-rods, and other jointed sticks and rods. Where a slip-joint like that shown in Fig. 8 is used, the recess *f* may be dispensed with, and the flexible member may be contained in the socket between the ends of the stick, as shown in Fig. 8.

I am aware that umbrellas having jointed sticks are not new, and that umbrellas having sliding rib-sections pivotally connected to the braces of the umbrella, as described in Letters Patent No. 322,227, dated July 14, 1885, are not new, and I do not desire to claim these devices, broadly.

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

1. The combination of the tubular or telescoping sections *j*, having slots *o*, with pivoted braces *n*, having projections *s*, and the hinged rib-sections *i*, having spring-catches *q*, substantially as and for the purposes described.

2. In a folding umbrella, the combination of the tubular or telescoping sections *j*, having slots *o*, pivoted braces *n*, having projections *s*, hinged rib-sections *i*, spring-catches *q*, and projection *r*, arranged to engage with the slot *o*, substantially as and for the purpose specified.

3. The combination of the stick-pieces *a' a'*, united by a threaded box and pin, a slide, *u*, fitting in a recess, *t*, a pin or stop, *y*, and a slotted spring, *x*, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 29th day of January, A. D. 1886.

JAMES W. RIDDLE.

Witnesses:

THOMAS B. KERR,
W. B. CORWIN.