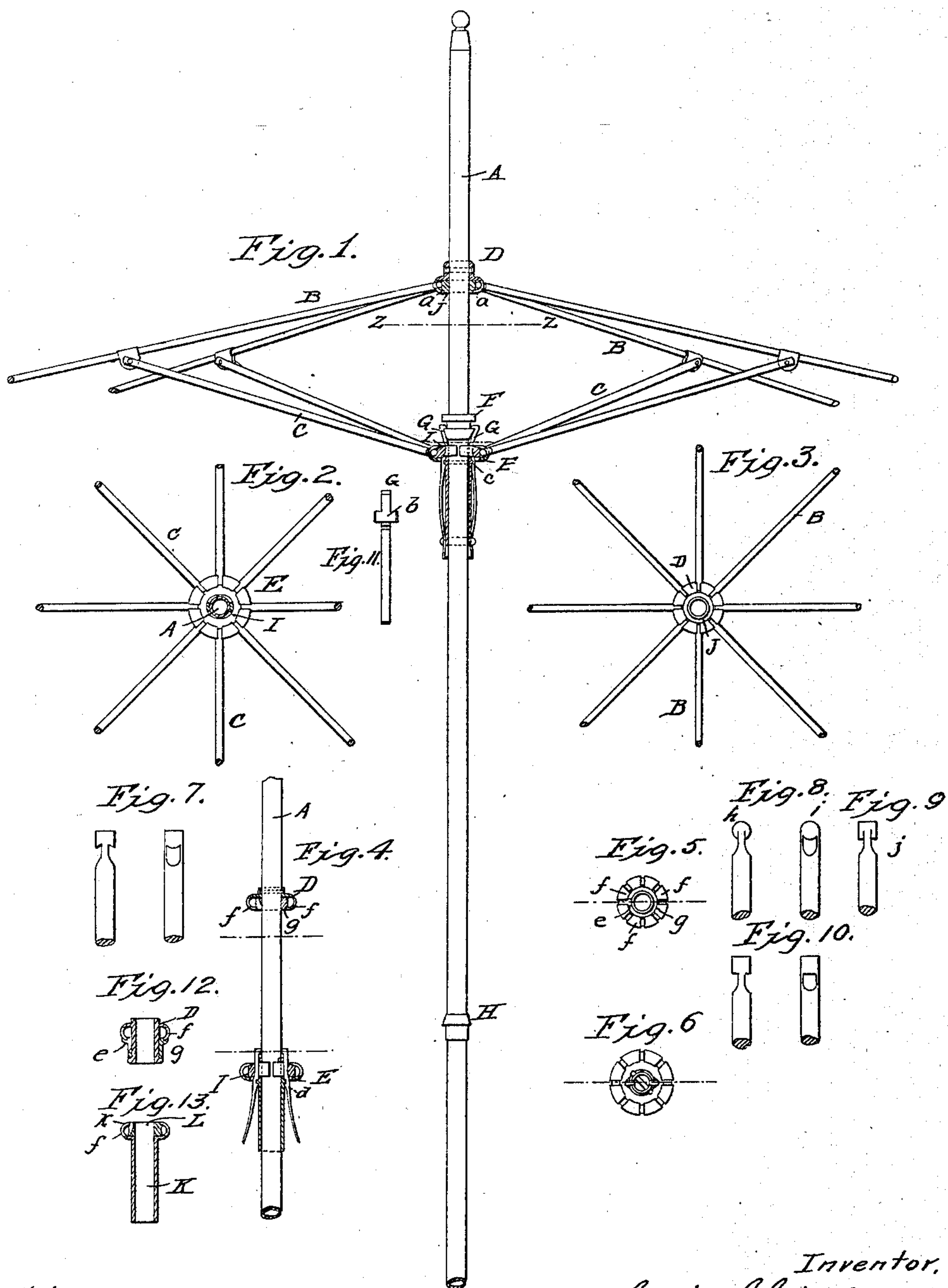


G. G. GRISWOLD.  
UMBRELLA.

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# United States Patent Office.

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*Letters Patent No. 77,975, dated May 19, 1868; antedated March 12, 1868.*

## IMPROVEMENT IN UMBRELLAS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, GOUVION G. GRISWOLD, of the city, county, and State of New York, have invented certain new and useful Improvements in Umbrellas; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to the construction of the notch or crown-piece and runner to be used in umbrellas; the devices which secure the ribs and stretchers to or in the notch or crown-piece and runner respectively; to the spring-catch which fastens the umbrella either open or shut; and to the construction of the inner ends of the ribs and stretchers, to adapt them to be used with the notch or crown-piece and runner as improved.

My object is to produce an umbrella cheaply, which shall be neat and durable, and the notch or crown-piece and runner of which shall be so constructed and arranged with reference to the ribs and stretchers that a rib or a stretcher may easily be removed when broken and its place supplied by another.

My invention consists—

First, of a notch or crown-piece, made with an annular groove in the inside of one end of it, and slots cut through into said groove, through which the ends of the ribs pass, which ends are made T-shaped, so as to bear against the walls of the said groove at each side of the said slot, and thus hold the said ribs from drawing out radially, and in the combination therewith of an annular piece of rubber, or other flexible yielding substance, which is placed between the inner edge of the wall surrounding the said annular groove and the tube or staff of the umbrella, and partly within the said groove, to secure the ends of the said ribs from coming out, substantially as hereinafter set forth. That portion of the runner which receives the ends of the stretchers is made similar to the notch or crown-piece, as above described.

Second, in the combination with the notch or crown-piece, made as above set forth, of a metal or leather ring, having a notch or crown-piece cut into it, or a piece or portion removed from it, so that the said notch or crown-piece may be moved opposite each or either of the slots in the wall of the said annular groove, so as to admit of the insertion or withdrawal of one or more of the ribs when desired, for repairs, &c., the said metal ring being set within the groove, or against the opening, and serving to close the opening between the walls of the annular groove and the tube or staff, substantially as hereinafter more fully set forth.

Third, in the combination with the runner, made as above set forth, of suitable spring-catches, which pass down through the walls of the annular groove in the said runner, and are supported in slots made therein, and which are held down in position by the rubber ring within the runner, substantially as hereinafter more fully set forth.

Figure 3 is a section showing the parts above the line *x x*, fig. 1.

Figure 4 is a detail view of a tube or staff, with a notch or crown-piece having a metal ring in it, and a runner with spring-catches, different in form from those shown in fig. 1.

Figure 5 is an under side view of the notch or crown-piece seen in fig. 4.

Figure 6 is a top view of the runner seen in fig. 4.

Figures 7, 8, 9, and 10 show in detail different forms which may be given to the ends of the ribs and stretchers, to fit them for the notch or crown-piece and runner.

Figure 11 is a side elevation in detail of one of the spring-catches seen in fig. 1.

Figure 12 is another form or modification of the notch or crown-piece with metal ring.

Figure 13 is a radial section of a runner in which a metal ring is used with the slotted groove.

A is the staff of the umbrella; B B are the ribs; C C are the stretchers; D, the notch or crown-piece, and E the runner. F is a sleeve, having a groove and shoulder in its surface for the spring-catches G G to hook into when the umbrella is raised or spread, and H is a similar sleeve, for the said catches to hook under when the umbrella is closed. I is a rubber ring, which serves in the runner to hold the ends of the stretchers from slipping out of their seats, and also to spring the catches G G into their places, and to hold them there. J is a ring of rubber, or other sufficiently yielding substance, which being thrust into the opening between the sec-



tions *a a* of the walls of the groove in the notch or crown-piece *D*, and the staff *A*, prevents the ribs from working out, while it may be either compressed or removed sufficiently to permit of the withdrawing of a rib or the inserting of another in place of the one removed for repairs, &c.

The spring-catches *G G* are made in the form shown in figs. 1 and 11, having hooks at each end, to hook into the sleeves above and below, for the purpose of fastening the umbrella either open or shut, as may be desired. Near their upper ends they are both made semi-cylindrical in form for a short distance, just at that portion which comes under the rubber spring *I*, (as seen at *b*, fig. 11,) for the purpose of furnishing a suitable bearing for the spring *I*, and to prevent it from rubbing against the shaft as the runner is moved up or down. The spring-catches *G G* are kept from slipping up or down by a groove on the inner side of each, which fits snugly over a projecting fillet or bead on the runner, as seen at *c*, fig. 1, and *d*, fig. 4. This fillet also serves as a fulcrum for the spring-catches *G G*.

The ordinary form of spring-catches may be used, and the rubber ring *I* dispensed with, using instead thereof a metal or other suitable ring, as seen in fig. 13, in which *K* is the runner, and *L* the ring, which has a notch or crown-piece, *k*, in one side of it. Whenever the notched ring *g* or *L* is used, it may have one or more notches in it, but I prefer to have but one, as that is sufficient.

In order to remove a broken or damaged rib or stretcher from the notch or crown-piece or runner shown in figs. 1, 2, and 3, or from the runner shown in fig. 4, the centre ring, *I* or *J*, as the case may be, is forced up out of the groove far enough to admit of the insertion or withdrawal of the rib or stretcher, and the ring is afterwards returned to its original position.

In figs. 4, 5, 12, and 13 the centre ring, *g* or *L*, of the notch or crown-piece or runner is made of metal, leather, or other suitable material, and a slot or notch or crown-piece, *e* or *k*, is cut into or through it. By bringing this slot *e* opposite one of the slots in the notch or crown-piece *D*, or runner *E* or *K*, a rib may easily be inserted or withdrawn, and by turning the ring around until the notch or crown-piece *e* or *k* is opposite one of the leaves which compose the wall of the annular groove in the notch or crown-piece or runner, the ribs are fastened into position. The ring may be secured from turning by dotting it at its junction with the leaves *f* with a punch, or it may be secured in any other way deemed best. The notch or crown-piece or runner may also be extended downward or upward, and the metal or other ring put on below, as seen in fig. 12, a slot being made in the ring as before, and the ring, when adjusted, and the ribs in, secured in a similar manner from turning around, so as to release the ribs.

In fig. 4, the spring-catches *G G* are shown in a somewhat modified form. They have hooks on the upper ends only, and these hooks shut or catch into holes in the staff or tube, though they could be made to catch into a groove in a sleeve, as in fig. 1. I prefer, however, to use the catch shown in fig. 1, as the sleeve strengthened instead of weakens the staff, and the groove or shoulder extending entirely around the sleeve, there can be no trouble or delay in making the hooks catch.

Sufficient shoulders or projections may be made in the ends of the ribs and stretchers in a variety of ways, some of which are shown. *h* and *i* show a globe or sphere struck up on the end of the rib or stretcher, and *j* a cylinder, whose axis is perpendicular to the stretcher or rib. These, especially the sphere, I consider the best.

Figs. 7 and 10 show other forms which may be used.

Having thus fully described my invention, I claim—

1. The combination, with a notch or crown-piece or runner for umbrellas or parasols, having an annular groove and radial slots in it for the ends of the ribs or stretchers to work in, of a ring of rubber, or other suitable elastic yielding material, for fastening said ribs or stretchers in said groove, while at the same time one or more of the said ribs or stretchers may readily be removed for repairs, substantially as set forth.

2. The combination, with a notch or crown-piece or runner of an umbrella or parasol, having an annular groove and radial slots in it for the ends of the ribs or stretchers to work in, of a metal, leather, or other suitable ring, for fastening said ribs or stretchers in said groove, said ring having one or more slots in its side, to permit of the introduction or withdrawal of one or more of the ribs or stretchers, substantially as set forth.

3. The combination, with the runner *E*, of the spring-catches *G G*, operated in part or wholly by the India-rubber or other elastic ring *I*, substantially as set forth.

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Witnesses:

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