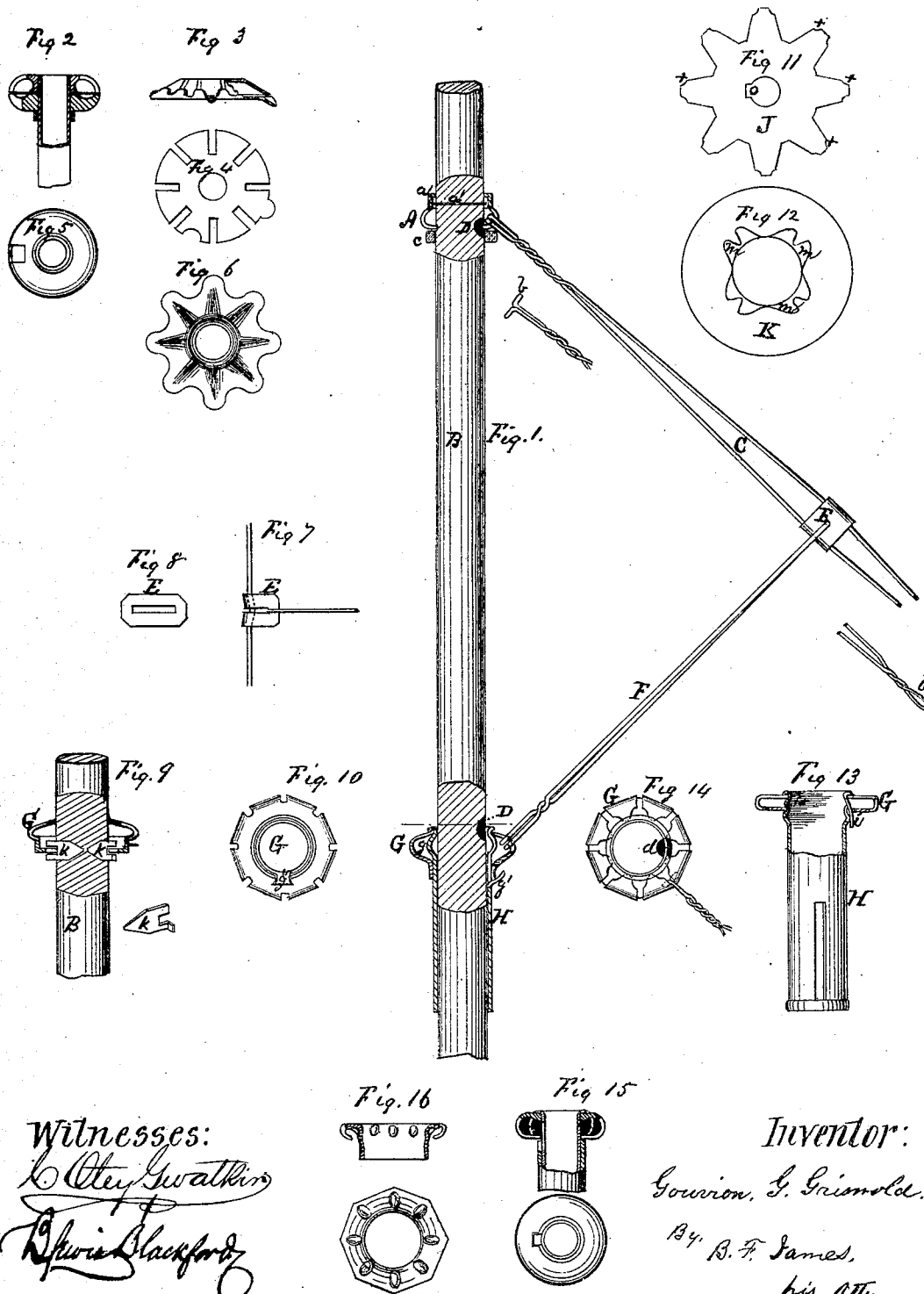


G. G. GRISWOLD.
Umbrellas.

No. 145,733.

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UNITED STATES PATENT OFFICE.

GOUVION G. GRISWOLD, OF NEW YORK, N. Y.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **145,733**, dated December 23, 1873; application filed October 8, 1873.

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 a new and useful Improvement in Umbrellas; and I do hereby declare the following to be a true and correct description of the construction and operation of the same, reference being had to the annexed drawings making part and parcel of this my specification.

The nature of my invention consists in the peculiar construction and arrangement of the notches to which the ribs and stretchers are attached, and also the method of attaching and connecting the same with the umbrella-stick and runner-pipe; the construction of the ribs and stretchers; the indentations or depressions formed upon the umbrella-stick to admit of the proper adjustment of the ribs and stretchers within and to the notches, to which they are connected; the means employed to connect the ribs and stretchers by means of laps.

In order to enable others skilled in the art to make and use my invention, I will describe the construction and operation of the same.

Figure 1 in drawing represents the handle or stick of the umbrella, made of wood, metal, or other suitable material; also, the top and running notches to which the ribs and stretchers are attached; also, the lap that connects the ribs together, at or about their center, and holding them apart, thus furnishing or forming an arch, which tends to strengthen the ribs; and in detail are shown the opposite ends of the ribs, the upper showing the form of its connection with the top notch, and its lower end the twisted loop to which the covering of the umbrella is attached. The top notch may be made in one piece, and has formed upon it a neck, and is held in position by means of a nail, brad, or other suitable device that passes through the stick or handle of the umbrella, the ends of which project within the said neck far enough to secure the same in position, while admitting or allowing the notch to be turned around. The lower portion of the top notch is cut away in such a manner as to form openings or spaces, when bent downward and inward, into which the ribs are adjusted, after which the rubber-spring ring is placed below the notch, and retains the ribs in their proper position, and acts also as a spring to aid in open-

ing the umbrella. An indentation, in the form shown, is made in the stick or handle at the top, as well as the running notch, into which the end of the rib or stretcher is inserted, to allow sufficient space for the same to pass into the spaces formed upon the upper or top, and running notch; and as these ribs and stretchers are thus placed, the top and running notches are turned to the next space or spaces therein, and the other ribs and stretchers are in like manner inserted. Each end of the ribs is twisted and made of the best and most elastic wire (preferably); the upper ends of the rib of T-shape, so that, when adjusted within the top notch, they shall retain their position; and the construction of the stretcher at its lower end is of the same form and shape as the ribs above described at its point of connection with the running notch.

In Fig. 1, the letter A represents the top notch; *a*, the neck thereof; *a'*, the wire brad or nail passing through the stick and holding the notch in position; *c*, the india-rubber spring and protector; B, the stick or handle; D, the depressions or indentations made therein; C, the ribs; *b*, the T-shape form of the upper ends of the same, by which the ribs are secured within the notch; *b'*, the loop formed in the end of the ribs, to which the covering may be attached; E, the lap which secures the two portions of the ribs together; F, the stretcher, passing through the lap, with its lower end twisted and attached to the running notch G; and H, the runner. The running notch G is, in form, substantially like the top notch, but its position is reversed, when placed upon the runner H. A swell, *g*, is formed upon the runner H, to prevent the runner-notch G from moving up and down upon it, while it is allowed to revolve freely around the same, to admit of the adjustment of the stretchers F within the spaces upon its upper side. After the stretchers are so adjusted, in order to prevent its turning, a dovetail connection is made between the runner and the notch by means of the lip *g'* formed upon the runner being pressed into an opening, corresponding in shape, in the runner-notch, as seen at *g''*, Fig. 10. E are metallic laps or clasps, made in the form shown in Fig. 8, and applied to the ribs, as hereinbefore described. In order to prevent slipping, the ribs are bent, as seen in Fig. 7. These laps have a central slot, so that they may ad-

mit through them the stretchers F, Figs. 1 and 7, with their T-shaped ends.

Fig. 13 also shows the mode of connection of the notch, attached and secured to the runner H. It may be fastened so as to prevent turning, by the small plate *i* passing through an opening in the runner and underneath the notch upward, and the end of the plate bent forward, and adjusted within a cut or opening formed in the top of the runner, and between the points formed on the notch, and the upper end of the pipe or runner is bent outward, as shown in said figure, so that the ends of the notch project beyond the points of the notch, and thus secure it in position and prevent its displacement.

Fig. 14 shows a modification of the notch with the runner, with an opening formed in the runner, through which the ribs or stretchers may be inserted, and the same secured in any suitable manner.

Fig. 9 shows another method of securing the notch to the stick by means of the forked nails *k*, which are driven into the stick, and are adjusted within the neck formed upon the notch G.

Figs. 11 and 12 illustrate the form of the notches, as blocked out before bending the same into position for use. In Fig. 11 the method of construction of the points is shown, as at *x x x*, being scalloped out in order to give them the necessary form to admit the reception of the ribs and stretchers when bent. In Fig. 12 is also shown a mode of fastening the disk or upper portion of the notch to the stick by means of the projections *m m*, &c. These projections may be bent in such a manner as to drive them into the stick, or can be allowed to rest flat upon the same and riveted thereto.

The disks employed in the construction of the notches, whether made of one or two pieces, may be corrugated radially, spirally, or in any other manner, to impart greater strength thereto, as shown in Fig. 6.

When the top notch and runner notch are formed of two parts or disks, they are formed as shown in Figs. 3 and 4, the covering-disk, Fig. 3, having a point or points formed upon it that may be pressed into the channels formed upon the lower disk, Fig. 4, in order to strengthen the same, and affording a ready means of locking the same together. A channel is also formed in one or either of said disks through which the ends of the ribs or stretchers are introduced and withdrawn, which channel is closed by means of the lip formed upon the disk.

The remaining figures show details and modifications of construction of the parts herein referred to, and are substantial equivalents of the parts herein described.

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

1. The top notch A, with its neck *a*, constructed as herein described, and adjusted upon and secured to the umbrella-stick B, in

the manner and for the purpose herein described.

2. The double ribs C, constructed as described, and strengthened and secured together at or near their center by the lap E, the upper and lower ends of said ribs being twisted so as to form, at the lower end *b'*, a loop, to which the cover may be sewed or attached, and T-shaped projections, as at *b*, upon the upper ends of said ribs to connect with and be secured to the top notch A, in the manner and for the purpose herein set forth.

3. The indentations or depressions D formed upon the umbrella-stick, combined with the top and runner notches, to admit of the adjustment of the ribs and stretchers, in the manner and for the purpose herein described.

4. The combination of the lap E with the ribs C, in the manner and for the purpose herein described.

5. The combination of the top notch A, ribs C, and stick or handle B, constructed substantially as described, with the india-rubber spring or protector *c*, in the manner and for the purpose herein described.

6. The combination of the runner-notch G with the runner-pipe H, when secured together, in the manner and for the purpose herein described.

7. The disk K, provided with the raised projections *m*, substantially as described, so that when bent inward they may be driven into the stick B and secured thereto, in the manner and for the purpose herein described.

8. The disk J, forming either the top or running notch, constructed as herein described, so that the circular hole at its center has cut within it the dovetail opening *o*, and with the ends of each of the projections *x x x* scalloped or cut away, so that when bent inward they may form spaces into which the ribs and stretchers are inserted, in the manner and for the purpose herein described.

9. The disks forming the top and runner-notches, to receive the ribs and stretchers of an umbrella with circular, spiral, or radial corrugations, as shown in Fig. 6 of drawing, in the manner and for the purpose herein described.

10. The within-described method of securing the notches G upon the stick and runner by means of the forked nail *k* and metal plate *i*, in the manner and for the purpose herein described.

11. The top and running notches, when constructed as described, in combination with depression D and nail *a'* in the stick, so that they may be rotated, and the spaces cut in said notches for the reception of the ribs and stretchers can, at will, be brought opposite said hole or depression D, in the manner and for the purpose herein set forth.

GOUVION GHOLSON GRISWOLD.

Witnesses:

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