

U. G. STEINMETZ.
Folding-Umbrella.

No. 163,821.

Patented May 25, 1875.

Fig. 1.

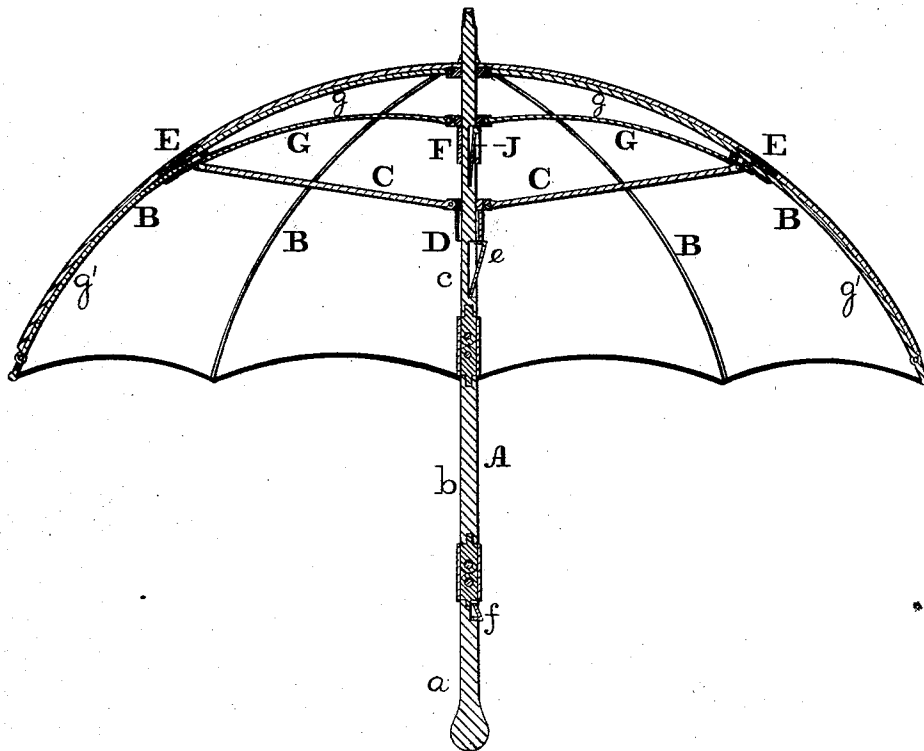


Fig. 2.

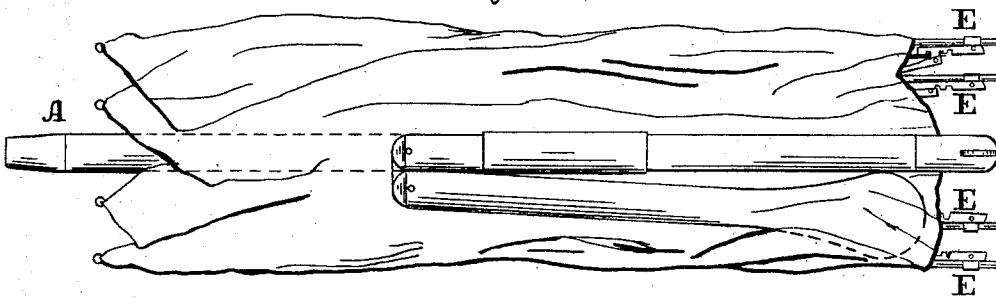
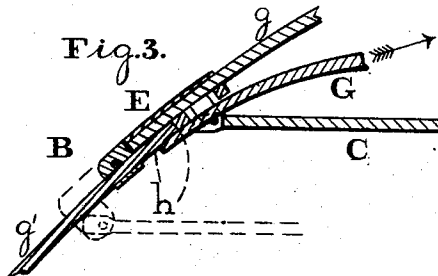


Fig. 3.



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UNITED STATES PATENT OFFICE.

URIAH G. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN FOLDING UMBRELLAS.

Specification forming part of Letters Patent No. **163,821**, dated May 25, 1875; application filed March 3, 1875.

To all whom it may concern:

Be it known that I, URIAH G. STEINMETZ, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Folding Umbrellas; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a transverse vertical section of the device embodying my invention. Fig. 2 is a view of the folded umbrella. Fig. 3 is an enlarged sectional view of a detached part.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to an umbrella which, when in service, may be carried as ordinarily, and is adapted to be folded in compact form, so as to be placed in a traveling-satchel, coat-pocket, or otherwise.

The invention consists in sectional ribs, the end of one section overlapping the end of the other section, and a slide or arm overlapping the first-named section, whereby the firmest connection between the two sections is insured. It also consists in a fastening for the runner, so as to prevent accidental locking or unlocking of the sectional ribs.

Referring to the drawings, A represents the stick or staff of an umbrella; B, the ribs; C, the stretchers, and D the runner thereof, the stick being formed in sections *a b c*, and provided with upper and lower catches *e f*, for holding the frame of the umbrella opened and closed, as usually. The ribs B are formed in sections *g g'*, which are connected to each other through the medium of stocks E, consisting of a body in part, or entirely of tubular form. The upper section *g* is firmly fixed to the stock E, and projects thereinto, and the lower section *g'* is pivoted near its end *h* to the outer end of the stock; but the end *h* is of sufficient length that when the umbrella is opened, the said end *h* will overlap or come in contact with the end of the section *g*—that is, within the stock E, as most readily seen in Fig. 3. The stretchers C are pivoted to the stocks E, the joints

occupying such position that the ends *h* of the lower sections are in no wise interfered with by, or do not interfere with, the stretchers. F represents an auxiliary runner, which is fitted on the stick A above the usual runner D, and to said runner F there are jointed a series of slides or arms, G, one for each rib. These slides are of sufficient length to extend to the stocks E, and project into the stocks through spaces between the ribs B and said stocks, so as to have a sliding motion in and out of the stocks, and are adapted to overlap or come against the ends *h* of the lower sections *g'* of the ribs.

It will be seen that when the end *h* of the lower section bears against the end of the upper section, and the slide G bears against the end *h* of the lower section, the said sections will be most firmly held together or braced, whereby the body or frame of the umbrella will be held reliably extended, and, receiving proper tautness, will be prevented from disengagement or rattling at the joints of the ribs and stretchers. When the auxiliary runner F is drawn down to full extent, it forces the slides G more firmly against the ends *h* of the ribs, and consequently tightens the joints of the sections. J represents a catch, which is fixed to the stick A in proximity to the position occupied by the runner F, so that when the umbrella is opened the runner is prevented from movement, whereby the unlocking of the sectional ribs is also prevented.

When the umbrella is to be folded, the runner D is relieved and moved down, and the auxiliary runner F moved up, the latter being then held by the catch J. Now, invert the umbrella, and the lower or outside ribs *g'* will fall over, the joints of the ribs having been unlocked by the withdrawal of the slides G, due to the previous upward movement of the auxiliary runner. Then slide the runner D toward the top of the umbrella, and the ribs B will move within the body of the umbrella. Disjoin the stick and fold its sections, and the parts will occupy the position shown in Fig. 2.

The operation of unfolding and opening the umbrella will be in reverse order to that stated.

Collars may be attached to the sides, so as

to encircle the ends of the sections of the ribs, and assist in firmly connecting said ends.

If desired, the stretchers G may be jointed to stocks E at the lower or outer portions thereof, as shown by the dotted lines, Fig. 3, but the operation will be the same as that previously described.

I am aware that locking-slides have been jointed to curved springs, which are rigidly connected to the umbrella-stick, and a band is employed to slide over the curved spring, in order to withdraw the slides; but the outward or locking motion of the slides depends on the expansion of the springs. These features are superseded by the auxiliary runner, which both locks and unlocks the slides, and, while utilizing the elasticity of the slides to assist in firmly locking the sectional ribs, it renders separate springs unnecessary.

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

1. The combination, with the stocks E, fixed sections *g*, and hinged sections *g'*, having overlapping ends *h*, of the arms G, sliding in the stocks and overlapping the overlapping ends of the stretchers *g'*, substantially as and for the purpose set forth.

2. The combination, with the sectional ribs B, stocks E, and sliding arms G, of the auxiliary runner F and fastening J, substantially as and for the purpose set forth.

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Witnesses:

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