

U. G. STEINMETZ.

UMBRELLA.

No. 175,194.

Patented March 21, 1876.

Fig. 1.

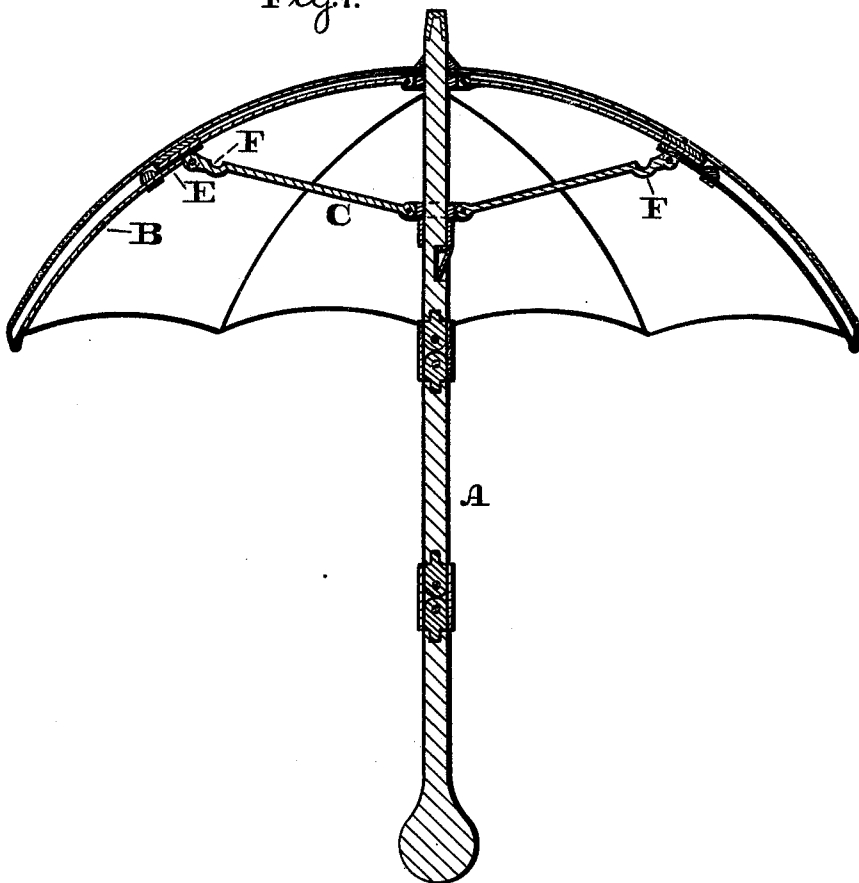


Fig. 2.

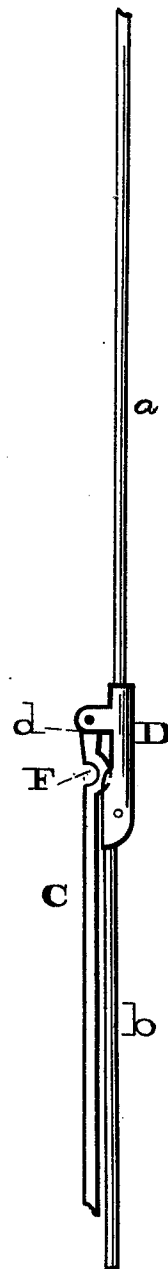


Fig. 3.

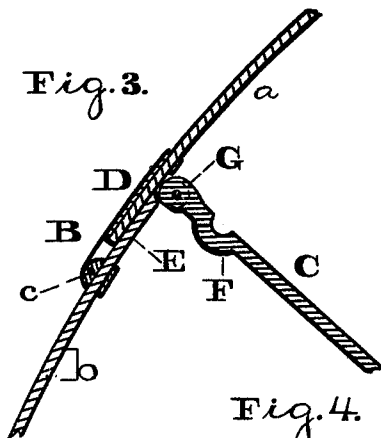
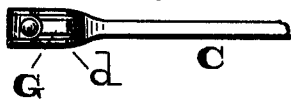


Fig. 4.



Witnesses:

Lewis F. Brown,
A. P. Grant.

Inventor:

U. G. Steinmetz.

by

John A. Diederichs,
Attorney.

UNITED STATES PATENT OFFICE.

URIAH G. STEINMETZ, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. **175,194**, dated March 21, 1876; application filed March 2, 1876.

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 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 section of an umbrella embodying my invention. Fig. 2 is a detached view of one of the ribs and stretchers, showing how they appear when the umbrella is closed. Fig. 3 is an enlarged sectional view of a detached portion. Fig. 4 is a bottom view of a portion thereof.

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

My invention consists of sectional ribs, the end of one section overlapping the end of the other section, the extent of overlap corresponding with the opening or space of the fork of the stretcher, so as to admit of its being drawn in with the shoulder of the fork in the stretcher at an angle corresponding with the length of the overlap of the ribs and extent of the fork, whereby, when the umbrella is closed, the two sections will be held extended as one and locked by the stretcher.

The invention also consists in forming the stretchers with arches near their outer ends, the crowns of which are on the outside so as to come adjacent to the ribs and contiguous therewith, for bringing the ribs closely to the stick when the umbrella is closed, and for throwing out the ribs when they are relieved from the tip-cups or other fastenings, so that the ribs will be cleared of the runner, and the hand may freely reach the runner. It also consists of auxiliary fastenings secured to or formed with the stretchers and located in the forks thereof, for securely and conveniently locking the sections of the ribs when the umbrella is extended or open for use.

Referring to the drawings, A represents the stick or staff of an umbrella, B the ribs, and C the stretchers thereof. Each rib is formed in sections *a b*, of which the upper section *a* is

fixed to a stock, D, and the lower section *b* is pivoted to said stock, whereby the said section *b* may be swung over and folded against the section *a*.

The hinged section *b* is extended beyond its axis *c*, so as to form a portion, E, which overlaps the end of the section *b*, which is fixed to the stock, and the extent of overlap corresponds with the space or opening of the fork *d* of the stretcher, so that said fork will not interfere with the end of the hinged section during the folding motion of the latter.

It will be seen that when the umbrella is opened each rib will be bent inwardly at its two ends, due to the strain of the fabric or covering, and thus the hinged sections will be held firmly to bearings against the fixed sections, or the stocks, and the ribs will act to all intents and purposes the same as an umbrella each of whose ribs is formed in one piece. When the umbrella is closed the sections will be held extended and the stretchers rest against the hinged sections of the ribs, and the result is the same as in an ordinary umbrella. When, however, it is desired to fold the umbrella, the runner of the stretchers is moved upward beyond the place where it usually rests when the umbrella is closed. Then the umbrella is inverted and the hinged sections fall over against the fixed sections, the fabric of the hinged sections being gathered against the fabric of the fixed sections; then the runner is moved clear up to the top, and the stick or staff, being likewise in sections, is also folded, and thus the umbrella will be in compact form in small compass.

F represents an arch which is formed in the stretcher in proximity to the fork *d* thereof, and the crowns of the arch are on the side adjacent to the ribs. When the umbrella is closed the lower or tip ends of the ribs are thrown out by the action of the arches F, but they are subsequently drawn in so as to be fastened by the tip-cup or other fastenings, and thus the tip-ends of the ribs are held in without swelling out the portion of the rib at the point of connection with the stretcher. By this construction the ribs may be brought closely to the stick, and the bulging of the umbrella is prevented, the umbrella thus presenting a more slender appearance than where the style of formed stretcher now in use is applied.

Moreover, as soon as the tip-cup or fastening is released, the tip-ends of the ribs fly out or away from the stick, and thus the runner is cleared of the ribs, whereby the hand may freely reach the runner without interference of the ribs.

G represents an auxiliary fastening for the sectional ribs, and it consists of a head which is formed with or secured to the stretcher, and projects into the space or opening of the fork thereof, so that when the umbrella is opened said head comes in contact with the end of the overlapping portion of the hinged section *b* of the rib, and bears firmly there-against, so as to prevent accidental disengagement of the two sections of the rib. When, however, the umbrella is to be folded, the runner of the stretcher will be moved so that the head clears the aforesaid end of the overlapping portion of the hinged section; then, by inverting the umbrella, the hinged sections fall over against the fixed section, and the operation and result will be similar to that previously stated.

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

1. The sectional rib formed with a fixed section, *a*, and a hinged section, *b*, having an overlapping portion, *E*, in combination with the fork *d* of the stretcher, the extent of overlap corresponding with the opening or space of the fork, so that the stretcher will lock the sections when the umbrella is closed, substantially as and for the purpose set forth.

2. The stretcher of an umbrella formed with arches in proximity to the outer ends thereof, the crowns of which face outward, substantially as and for the purpose set forth.

3. The auxiliary fastening for the sectional ribs, consisting of heads secured to or formed on the stretchers, substantially as and for the purpose set forth.

U. G. STEINMETZ.

Witnesses:

JOHN A. WIEDERSHEIM,
H. E. HINDMARSH.