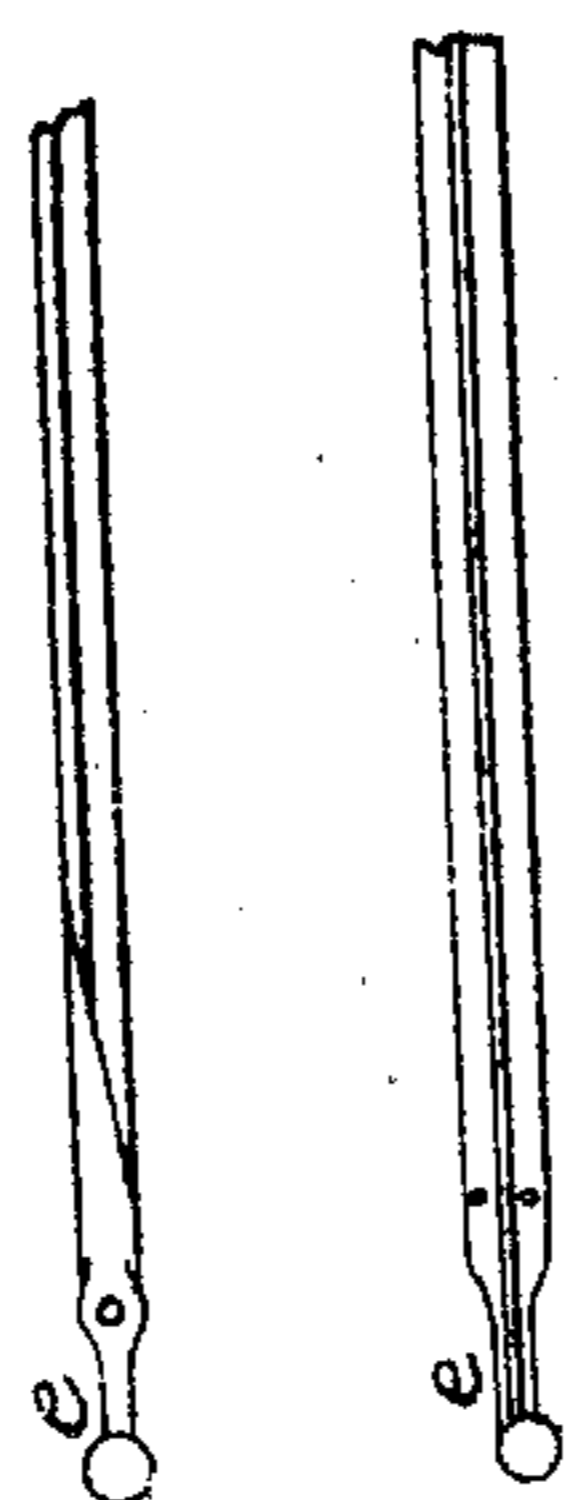
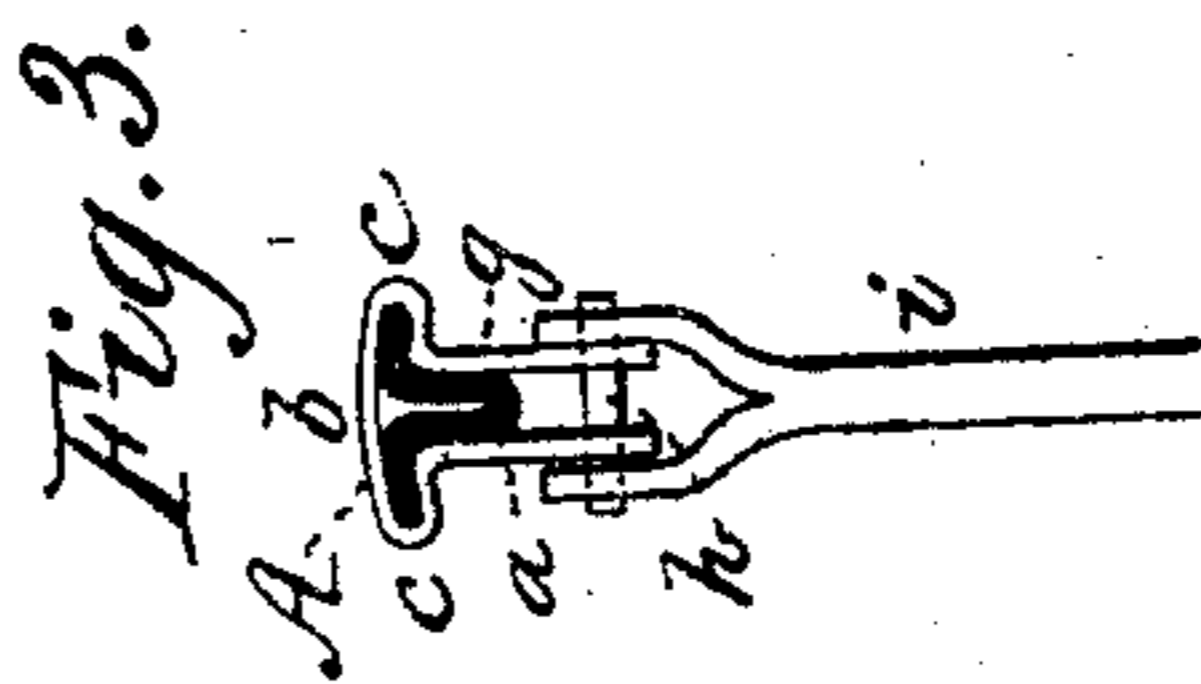
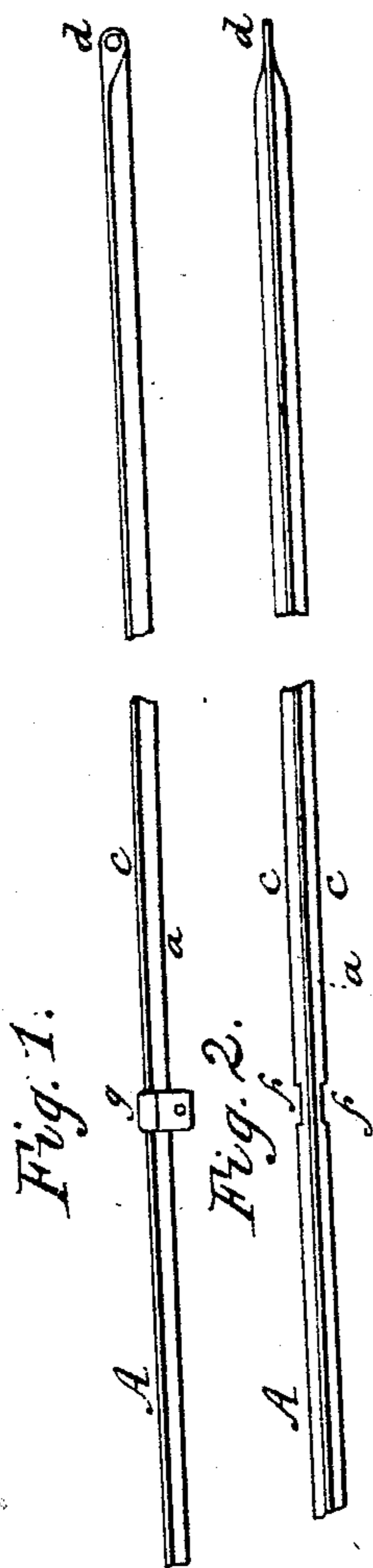


W. Hugo.
Umbrella.

N^o 59735.

Patented Nov. 13. 1866.



Witnesses.
T. A. Jackson.
Wm. Brown.

Inventor.
Wm. Hugo
Per *Wm. Brown*
Attorneys.

UNITED STATES PATENT OFFICE.

WILHELM HUGO, OF CELLE, HANOVER.

IMPROVEMENT IN UMBRELLAS.

Specification forming part of Letters Patent No. 59,735, dated November 13, 1866.

To all whom it may concern:

Be it known that I, WILHELM HUGO, of Celle, in the Kingdom of Hanover, have invented a new and useful Improvement in Ribs of Umbrellas, &c.; and I do hereby declare that the following is a full, clear, and exact description, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side view of this invention. Fig. 2 is an inside elevation thereof. Fig. 3 is a transverse section of the same.

This invention consists in a T-shaped rib for umbrellas, said rib being provided with a longitudinal groove or depression in its outer surface, in such a manner that the same, on account of its peculiar shape, combines strength and lightness, and by the longitudinal groove room is obtained for the seam to lodge in, so that the rib does not injure the fabric which constitutes the covering of the umbrella or parasol.

It is well known that in the manufacture of umbrellas or parasols manifold experiments have been tried to supersede whalebone ribs by ribs made of steel, and such steel ribs are either made solid or hollow.

The solid ribs are too heavy and the hollow or concave ribs are not sufficiently strong to resist the strain of a violent gust of wind, and the ribs must be made thicker and heavier than desirable, or the desired strength is not attained.

These difficulties are avoided by my rib A, which is T-shaped, as shown in Fig. 3 of the drawings. This rib is rolled out of sheet metal, rendering the stem or shank double, and of such a height that the same is capable to

resist a heavy strain without being made very heavy. On the outer surface of this rib, and extending through its entire length, is a cavity or gutter, C, which serves to receive the seam of the covering, and the two side pieces are round, so that the same are not liable to injure the covering, and a rib is obtained which combines great strength with lightness and elasticity.

The ends of the rib are firmly compressed, one end being made flat and perforated in order to secure it to the point. The other end, being rounded, is provided with a hole for the purpose of securing the covering to the rib.

In the middle the ribs connect with the forked ends of the braces, and in order to effect this purpose I provide the ribs with notches to receive a metal piece, *g*, which is firmly wrapped round the rib, and provided with a hole to receive the fulcrum-pin *h*, that forms the connection between the brace *i* and the rib, Fig. 3.

If desired, the piece *g* may be soldered to the rib.

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

1. A T-shaped rib for umbrellas or parasols, as a new article of manufacture.
2. Providing the T-shaped rib with a longitudinal gutter or cavity, substantially as and for the purpose described.

The above specification of my invention signed by me this 11th day of June, A. D. 1866.

WILHELM HUGO.

Witnesses:

AUG. SCHMIDT, [L. S.]
H. M. BROWN. [L. S.]