W. H. OGILVIE.
Umbrella-Frame.

No. 208,260. Patented Sept. 24, 1878.

Fig. 2.

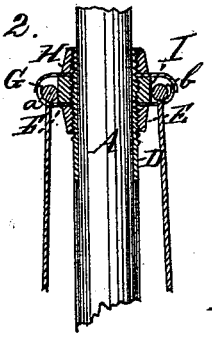

Fig. 1.

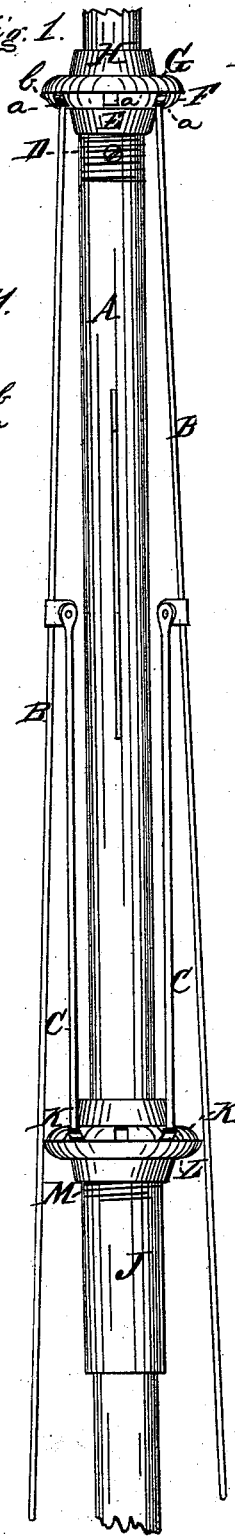

Fig. 3

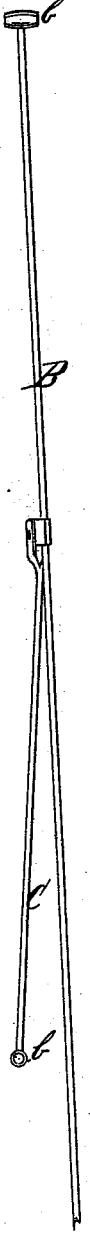

Fig. 4.

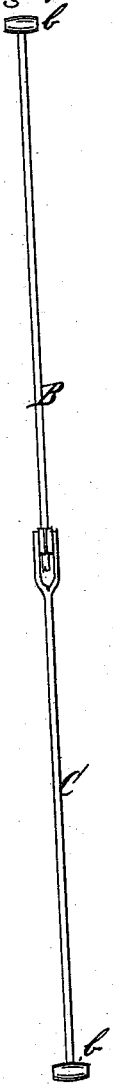

Fig. 5.

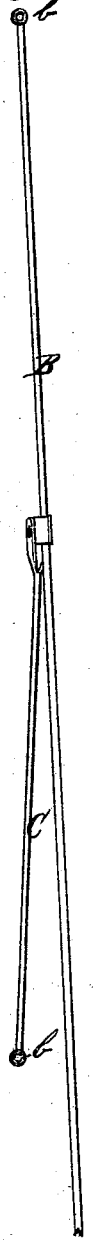

Fig. 11.

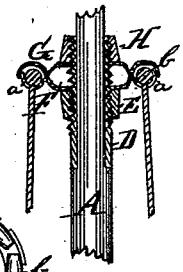

Fig. 7.

Fig. 8.

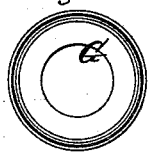

Fig. 6.

Fig. 9.

Fig. 10.

Witnesses
Wm. C. Hicks
Da's. S. Wightman.

Inventor
William Henry Ogilvie
by his Atty.
W. C. Bennett.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY OGILVIE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN UMBRELLA-FRAMES.

Specification forming part of Letters Patent No. **208,260**, dated September 24, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, WILLIAM HENRY OGILVIE, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Umbrella and Parasol Frames, of which the following is a specification:

This improvement relates to the mode of securing the ribs and braces in the notch and runner, and is intended to so secure them that they shall be less liable to be detached from their fastenings at the upper ends of the ribs and the lower ends of the braces, and also so as to facilitate the removal and replacement of a broken or damaged rib or brace.

A part of the invention is also designed to give a snug and elastic joint at the points of fastening above mentioned.

One part of the said invention consists in the combination, with two plates forming together sockets to receive the enlarged or laterally-projecting ends of the ribs or stretchers, of a separate nut capable of being rotated independently of either of these plates, by which the two plates can be brought together so as to fit snugly upon each other and upon the ends of the ribs or stretchers without being rotated upon each other, or upon the ends of the ribs and stretchers, or upon any packing which may be between the plates, substantially as hereinafter set forth.

Another part of the said invention consists in the combination, with two plates forming together sockets for the enlarged or laterally-projecting ends of the ribs or stretchers, of a rubber ring arranged between the said plates and there secured by the said plates being brought in contact with or proximity to each other, substantially as hereinafter described.

Another part of the said invention consists in the combination, with one plate forming a portion of sockets to receive the ends of the ribs or stretchers, and having notches therein for the said ribs or stretchers, of another plate, also forming a portion of the said sockets, and having a rim fitting over and supporting the edge of the said notched plate, substantially as hereinafter described.

Figure 1 of the accompanying drawings is a side view of a portion of the staff of an umbrella, the notch and runner and the ribs and braces constructed and combined according to my invention. Fig. 2 is a detail view, showing the notch in section, with a portion of the staff in elevation. Fig. 3 is a partial outside view of one of the ribs with a T-head, and also showing a brace with a ball-shaped end to enter the runner. Fig. 4 is an inside view of a rib and a brace, both with T-heads. Fig. 5 is a partially outside view of a rib and brace, both with ball-heads. Fig. 6 is a plan or top view of the lower cup or basin of the notch, and also an under-side view of the upper and similar plate of the runner. Fig. 7 is a similar view of the same with the T-heads of the ribs or braces (as the case may be) inserted in place. Fig. 8 is an under-side view of the cap of the notch and a plan or top view of the corresponding part, or under basin of the runner. Fig. 9 is a plan of the elastic ring which secures snugness and elasticity of the joints. Fig. 10 is a side view of the nut which secures the cap of the notch in place, and the nut which secures parts of the runner together is of similar construction. Fig. 11 is a sectional view, showing a modified construction of the notch when the rubber ring above mentioned is omitted.

A is the staff of the umbrella or parasol, which staff may be constructed in the usual manner. B B are the ribs, and C C are the braces. These are made in the usual manner, with the exception that they are formed with an enlargement or lateral projection at the end which enters the notch or runner, said enlargement or projection being intended and adapted to secure their ends in position in the notch or runner.

In the drawings these ribs and braces are shown as formed with either T-shaped or ball-shaped heads or ends; but I suppose that a sharp bend at the end of the rib or brace might answer the same purpose, though probably less perfectly. D is a thimble, which is attached to the upper part of the staff, and fastened to it by means of a screw below the collar or nut. Said thimble has an enlargement, E, upon it for the lower basin or plate, F, of the notch to rest upon. This enlargement E is shown in the drawings as being screwed upon the said thimble; but it may be a fixed piece soldered to it or formed with it.

The plate F is struck up or formed some-

what in the shape of a cup or basin, with the notches *a a* in its edges to admit the stems of the ribs, the heads *b b* of the ribs resting inside of these notches in the bowl of the plate F. G is a cap, struck up or formed to fit over the outer edge of the plate F, and also having a hole in it of the proper size to admit the thimble D. This cap is made without notches, and its form is sufficiently indicated in the drawings. By fitting over the plate F, as shown and described, it very much strengthens the latter, and aids materially in making a substantial and reliable joint.

H is a nut, fitting upon a screw-thread on the outside of the thimble D, and screwed down upon the cap G to hold it in place. I is a soft-rubber ring, which rests inside of the cavity formed between the cup or plate F and the cap G, nearly filling such space, so that, when the upper ends of the ribs are inserted in the notch, it will press against them, keeping them out to the edge of the notch, and prevent these joints from becoming loose. This ring, being elastic, will yield to the pressure of the heads of the ribs, thus giving an elastic as well as snug joint.

The construction of the runner J is quite similar to that of the notch before described, the only important differences being that the notched plate K, corresponding to the plate F in the notch, is inverted and placed above the plate L, corresponding to the cap G (also inverted) of the notch, to adapt the runner to the direction of the braces; and the runner has, of course, a longer bearing of the thimble M upon the staff than that of the thimble D.

I have described my invention as provided with a rubber ring, I, to keep the heads of the ribs and braces out against the notched plate F, and secure an elastic as well as snug joint at that point; but if, for reduction of cost or for any other purpose, it is deemed desirable to dispense with this rubber ring, I should then prefer to make the plates F and G in the form shown in Fig. 11; but I regard the combination of the elastic ring with the other parts as an important and valuable improvement, and do not recommend that it should be dispensed with.

The construction which I have described gives great strength to the upper and lower joints of the umbrella or parasol, as the strain at those ends of the ribs and braces, instead of being all thrown upon a slim wire, which has to support the entire set of ends, is thrown upon and divided between the stronger plates F and G, supported as they are by each other and by the shoulders and nuts by which they are held in place.

There is also the further and very great advantage resulting from this invention that, if a rib or brace should by accident be broken or should be worn out, it can be readily replaced with a whole one by simply backing off the nut which holds the cup in place, and taking out the defective rib or brace and inserting a new one, without the necessity of taking the parasol or umbrella entirely apart.

I have described the ribs and braces as being made with T-shaped or ball-shaped ends, and it is the intention to so form them by upsetting the ends, or by some other appropriate device; but the ordinary ribs and braces may be adapted to form a part or parts of my improved construction by inserting short pins in the holes at their ends, and securing these pins in place by means of solder, screw-threads, or otherwise.

By the construction before described I produce an efficient wireless umbrella or parasol, and avoid the serious evils attending the use of wire in such structures.

I am aware that previous to my invention umbrella-frames have been devised in which the ends of the ribs and stretchers were to be secured between two plates, one of which was to be notched for their reception, and that one of these plates was to be screwed down upon or up against the other by being turned round upon a screw-threaded surface; but my invention differs from such device in that in my structure these plates are made to approach each other by an independent nut, which avoids the necessity of rotating one of the plates forming the runner or notch, as the case may be, upon the other, or upon any packing which may be between them, or upon the ends of the ribs or stretchers.

I am also aware that previous to my invention an umbrella or parasol frame has been devised in which an india-rubber ring was proposed to be used to keep the ends of the ribs and stretchers from slipping out of the sockets prepared for their reception in the notch and runner, a single notched plate being used to form such sockets in the runner as well as in the notch, the rubber ring being designed to be held in place by its own elasticity and friction upon other parts, and not by being interposed between upper and lower plates brought together to compress it between them, and hold it from working out of place by plates bearing upon both sides thereof, as in my invention.

While I am aware that previous to my invention sockets for ends of ribs and stretchers have been devised to be made of two separable plates, one or both of which were to be notched, I am not aware that in any such case a continuous rim or flange was made to extend from one of them to inclose and support the notched portion of the other.

The devices above alluded to as preceding my invention I do not claim.

I am aware that it is not new to provide ribs or stretchers with enlarged or laterally-projecting ends to lie in groove in the runner or notch-ring, and such I do not claim.

I claim as my invention—

1. The combination of the plates F and G and the independent nut H, the said parts being constructed, combined, and adapted to operate as hereinbefore described, whereby the

said nut is adapted to bring the said plates together to secure the ends of the ribs or stretchers, or, by its withdrawal, to allow said plates to be eloigned from or started back from each other to allow one or more ends of ribs or stretchers to be withdrawn, substantially as herein before set forth.

2. The combination of the plates F and G and the elastic ring I in the manner hereinbefore described, whereby the said ring is secured between the said plates by their approach to each other, as set forth.

3. The combination, with each other, of the plates F and G, the former being formed with notches in the outer rim or flange thereof to admit the ends of the ribs or stretchers, and the latter being formed with a continuous rim or flange to inclose and support notched flange of the former, substantially as hereinbefore set forth.

Witness my hand this 16th day of March, A. D. 1878.

WILLIAM HENRY OGILVIE.

Witnesses:

W. L. BENNEM,

JAS. S. WIGHTMAN.