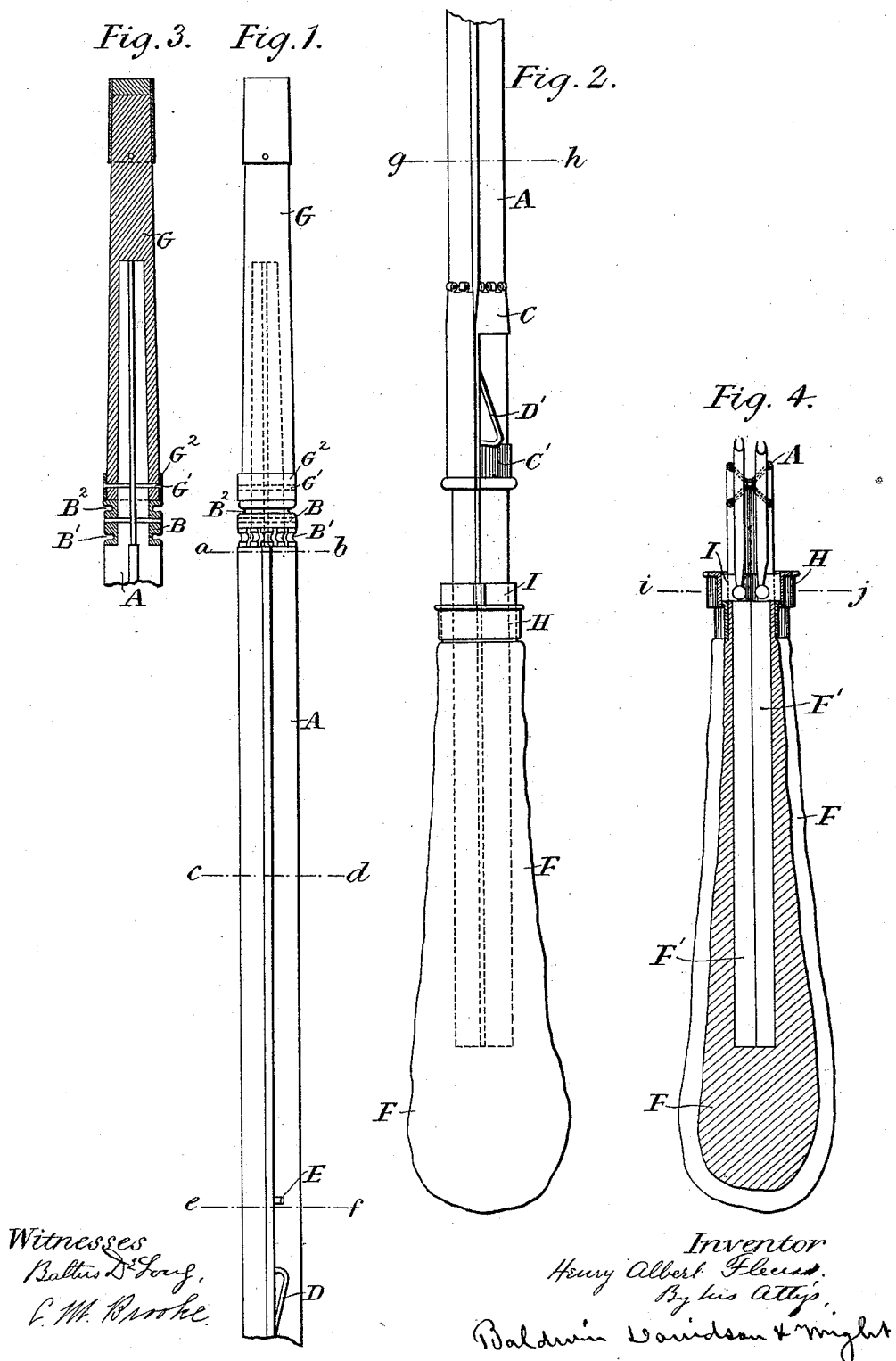


H. A. FLEUSS.
UMBRELLA OR PARASOL.

No. 423,422.

Patented Mar. 18, 1890.



(No Model.)

2 Sheets—Sheet 2.

H. A. FLEUSS.
UMBRELLA OR PARASOL.

No. 423,422.

Patented Mar. 18, 1890.

Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.

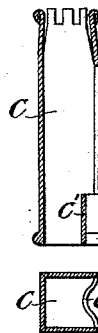
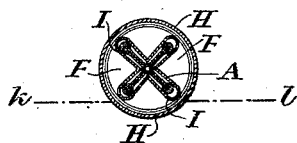


Fig. 11.

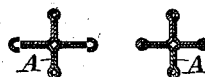


Fig. 12.

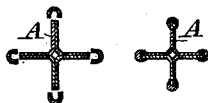


Fig. 13.

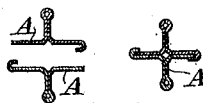


Fig. 14.

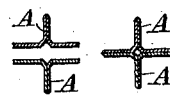


Fig. 16.

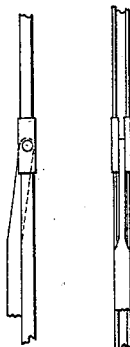


Fig. 17.

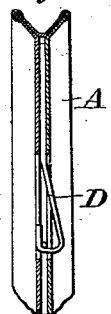
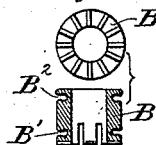


Fig. 15.



Witnesses
Baltus D. Long.
C. M. Woodlee.

Inventor
Henry Albert Fleuss.
By his Attys.
Baldern Davidson & Wright

UNITED STATES PATENT OFFICE.

HENRY ALBERT FLEUSS, OF LONDON, ENGLAND.

UMBRELLA OR PARASOL.

SPECIFICATION forming part of Letters Patent No. 423,422, dated March 18, 1890.

Application filed June 19, 1889. Serial No. 314,821. (No model.)

To all whom it may concern:

Be it known that I, HENRY ALBERT FLEUSS, mechanical engineer, a subject of the Queen of Great Britain, residing at 19 Adelaide Road, Brockley, London, England, have invented certain new and useful Improvements in Umbrellas or Parasols, of which the following is a specification.

This invention has for its object improvements in umbrellas or parasols.

In order to obtain greater compactness, together with other advantages, I employ a metal stick which in section is of a cross-like form—that is to say, the stick has four longitudinal webs and deep channels between the webs. The webs are widened or thickened along their longitudinal outer edges to make the stick stiffer and keep it from twisting and to prevent the umbrella-cover from being cut by the edges of the webs when the umbrella is folded. I make the top notch in such a manner that it may not have to project beyond the webs, and I so arrange that two of the ribs of the umbrella or parasol may lie in each channel of the stick. The ribs may have the usual bits upon them to receive the joint-pins connecting them with the stretchers. The runner is made square to fit the stick, and at its inner end is provided with four lugs, one on each of its sides. Each lug is made to receive two of the stretchers, which are connected to it by a joint-pin. The stick is furnished with end pieces, usually of wood, which are fitted to it. At one end there is the handle and at the other the tip of the stick. In place of the stick being formed of four radial webs and two ribs being made to lie in each of the channels between the webs it might be formed of three radial webs and three ribs be made to lie in each channel. I, however, prefer the above arrangement.

Various ways in which the stick may be formed are hereinafter described.

Figure 1 is a side elevation of the tip end of the stick of an umbrella-frame which is constructed as above described. Fig. 2 is a similar view of the handle end of the stick. Fig. 3 is a section through the tip end, and Fig. 4 is a section through the handle. In this latter view the ends of two of the ribs

are shown held into the stick by an ordinary tip-cap. Fig. 5 is a section through the line *a b*; Fig. 6, a section through the line *c d*, showing the ribs lying in the grooves; and Fig. 7, a section through the line *e f*; Fig. 8, a section through the line *g h*, showing stretchers and ribs lying in the grooves of the stick; Fig. 9, a section through the line *i j*. Figs. 10 are longitudinal and transverse sections of the runner. Figs. 11 are cross-sections showing one way in which the stick may be made. Figs. 12, 13, and 14 are sections showing other ways of forming the stick. Figs. 15 are an end view and longitudinal section of the top notch. Figs. 16 show the way in which I construct the joints which connect the stretchers to the ribs. Fig. 17 shows the way in which the spring is connected to the stick.

In the figures, A is the stick, formed of four radial webs. Preferably I form such a stick of two thin strips of steel bent to the form shown at Figs. 11, and held together by their edges being embraced by two strips of trough-wire, as shown, so that the outer edges of all the radial webs are thicker than the webs nearer to the center of the stick, or a similar stick may be formed of two thin strips bent to the form shown at Fig. 12, or of two thin strips bent to the form shown at Fig. 13. I sometimes, however, make the stick of two thin strips bent to the form shown in Fig. 14, without enlargements on the webs at their outer edges. So far as part of my invention is concerned, the webs need not be thus thickened. The two strips, as shown in Fig. 14, are secured onto each other by rivets. It will be observed that I have shown the ribs thickened at their outer edges either by widening the metal of which the stick is composed at these edges or by applying a wire thereto. In either construction the stick is made stiffer and is kept from twisting, and sharp edges are prevented which would cut the cover of the umbrella when folded.

B is the top notch, formed in such a manner as not to project beyond the radial webs of the stick. Preferably I form it in the manner shown at Figs. 15. It is composed of a metal tube with notches cut across its lower end, as shown at Figs. 1 and 15, to receive the

shouldered ends of the ribs, and with two grooves $B'B^2$ around its circumference. The groove B' is for the joint-wire to lie in, which forms the pin of the hinge-joint by which each rib is jointed to the top notch, and the groove B^2 is for the fabric of the cover to be tied into. At the end of the stick which has the top notch secured to it the stick is reduced in diameter and shouldered, as is shown, and is passed through the interior of the tube B, and the tube is held to it by a rivet, as shown in Figs. 1 and 3.

C is the runner. It is formed of a square tube to fit the stick, as shown. At the top it has slots cut downward for a distance in each of its sides to receive the ends of the stretchers, and the top edges are bent over to form eyes to receive a rivet-pin by which the stretcher ends are to be jointed to the runners. Two stretchers are in this way jointed to each side of the runner. Where the stretchers are jointed to the ribs, each rib is ordinarily embraced by a geat, through which and through the stretcher the joint-pin is passed. The rib is therefore necessarily thicker at the joint than elsewhere, and at this point the two ribs in each channel of the stick could not enter so deeply into the channel as at other parts of their length. It is therefore important that this thickened part of the rib should be as small in depth as is practicable, so that it may not have to extend far into the channel, as the channel gets narrower and narrower toward the center of the stick. I therefore make the joint in the manner shown at Figs. 16. The stretcher end is flattened and bent, as shown, to allow it to enter into the hollow of the rib, and the joint-pin is passed through the geat and through the rib, or it might be through the geat only and as close to the edge of the rib as is practicable.

DD' are spring-catches carried by the stick. The catch D is for retaining the runner from moving along the stick in a direction away from the top notch when the umbrella is open. It is stopped from moving toward the top notch by a short pin-stop E, lying in one of the channels of the stick, as shown at Figs. 1 and 7. The pin is made short, so as not to get in the way of the ribs when the umbrella is closed, and the runner is formed with an inward projection c' , as shown at Figs. 10.

F is the handle, which may be of wood, ivory, or other suitable material. A hole is bored into it for the end of the stick to be passed into. When the end of the stick has been inserted into the hole, it can be retained there by wedge-pieces F' , driven downward into the hole and by gluing or other suitable ways. The tip end G of the stick may be secured in the same way and be further retained by a rivet G' , as shown in Figs. 1 and 3, passed through the stick and through a metal band G^2 , by which the inner end of the tip is surrounded.

H is an ordinary sliding cap for holding the tip ends of the ribs close into the stick when

the umbrella is closed. In order, also, that the ribs which lie in the channels of the stick may at their tip ends be retained in such channels, so that the tip ends may not be twisted aside when rolling up the umbrella-covering, I make the webs of the stick just where the extremities of the tip ends lie between them with extension-pieces I, extending outward to the inner circumference of the cap, as shown at Figs. 2, 4, and 9, so that when the umbrella is closed and the cap has been passed over the tip ends of the ribs these tip ends cannot escape from the channel in which they lie, and the covering of the umbrella can be rolled up without its being possible to bend the ribs out of a straight line, and they remain equidistant around the stick.

In place of making an umbrella or parasol with a stick of cross-like section—that is, with radial webs at right angles to one another—and with two ribs and stretchers to lie in each channel of the stick, when the umbrella or parasol is closed, it might, as previously stated, be made with three radial webs, and with three ribs and stretchers to lie in each channel. I prefer, however, to construct it in the former manner.

Square runners, such as hereinbefore described, with two stretchers jointed to each of its sides may also be used advantageously with solid or tubular sticks which are square in cross-section.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A stick for umbrellas or parasols, formed with longitudinal channels, the webs between the channels being widened or thickened along their longitudinal outer edges.

2. A stick for umbrellas or parasols, formed of sheet metal with longitudinal webs, in combination with stiffening ribs or wires applied longitudinally to the edges of the webs.

3. In an umbrella or parasol, the combination of a stick formed with longitudinal channels, the handle, the projections I on the stick at the junction of the stick with the handle, the ribs and stretchers, and the sliding cap for holding the ends of the ribs within the projections I.

4. The combination, substantially as hereinbefore set forth, of the stick formed with longitudinal webs and with a reduced shouldered upper end, the end piece formed with a socket for the end of the stick, and the ring B, interposed between the stick and the end piece and formed with notches or grooves on its under side to fit the shouldered end of the webbed stick.

HENRY ALBERT FLEUSS.

Witnesses:

G. F. WARREN,
Notary Public, London.

PERCY WOODWARD,
17 Gracechurch Street, London, E. C.