

(No Model.)

E. FLUDE.
UMBRELLA.

No. 540,304.

Patented June 4, 1895.

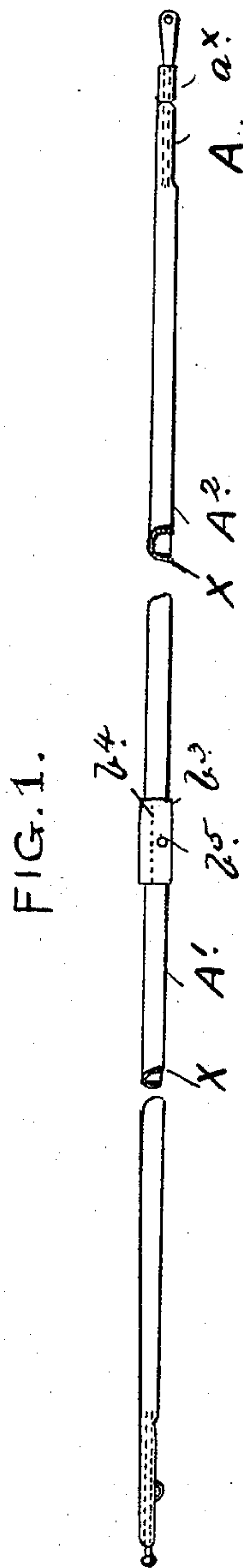
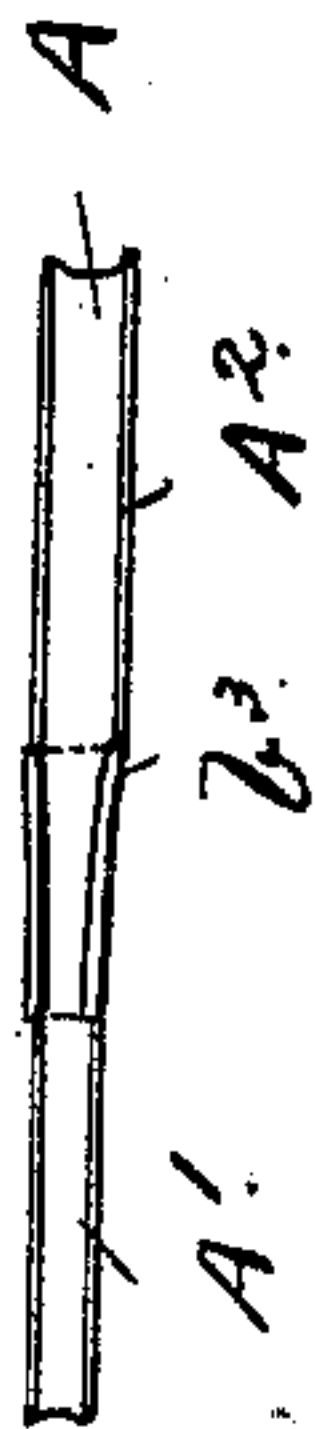
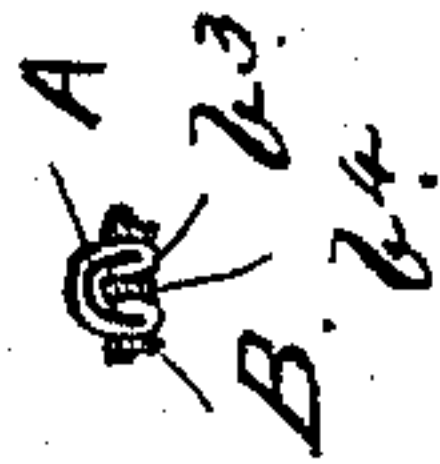


FIG. 1.



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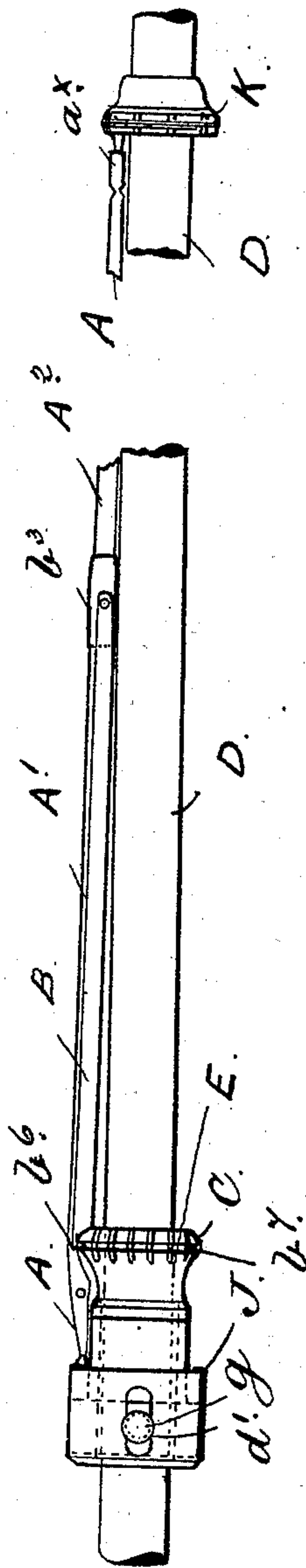


FIG. 5.

WITNESSES.

Fred Fellowes Wiggins.....
Walter Samuel Savage.....

INVENTOR.

Ernest ^{vs} Glude.
per W. D. Macfield
Attorney in fact.

UNITED STATES PATENT OFFICE.

ERNEST FLUDE, OF LEICESTER, ENGLAND.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 540,304, dated June 4, 1895.

Application filed March 25, 1893. Serial No. 467,663. (No model.) Patented in England February 28, 1891, No. 3,630, and in France July 25, 1892, No. 223,210.

To all whom it may concern:

Be it known that I, ERNEST FLUDE, umbrella-manufacturer, a subject of Her Britannic Majesty Queen Victoria, residing at 55 Charles Street, Leicester, in the county of Leicester, England, have invented certain new and useful Improvements in or Relating to Umbrellas, Parasols, or the Like, (for which I have obtained a patent in Great Britain, No. 3,630, bearing date February 28, 1891, and in France, No. 223,210, bearing date July 25, 1892,) of which the following is a specification.

This invention has reference to improvements relating to umbrellas, parasols or the like whereby the rib (of which a number forms the frame) is strengthened at a point most essential and desirable, that is to say, at the point where the sections unite protected by a tapered band to which is pivoted a three tined fork stretcher U shaped in cross section so that said stretcher may be closed upon the smaller section of the rib, said rib at this point being rolled or drawn to the smaller section by the well known means. I also employ a spring bolt in place of a wire spring (commonly inserted in grooves made in the stick which weakens the stick) and secure the ends of the stretchers by a sliding sleeve fitting over said spring bolt, and over a notch and runner of solid tube.

I will now proceed to refer to the sheet of drawings accompanying this specification, in which—

Figure 1 shows a side elevation of my improved rib A, comprising two sections, the smaller one A' being the lower portion of said rib, the larger section A² the upper portion. At the point where such sections unite I pivot a stretcher B, (see Fig. 3,) U-shaped in cross-section, whereby said stretcher may be closed upon the smaller section of the rib, the cross-sections being shown at X in the parts A' and A². Fig. 2 represents in an under side view the smaller section A' and larger section A² of the rib and strengthening metal band b³, turned up and clamped round the rib, as seen in dotted line b⁴, Fig. 1. Fig. 3 shows the larger and smaller sections of the rib A, with the three-tined forked stretcher B attached to the strengthening-band b³ at the point in the rib where the sections unite. Fig. 4 is a cross-section of Fig. 3; and Fig. 5 is a view of the

frame of an umbrella or the like, showing my improvements therein and in accordance with this invention.

Similar letters of reference are used to represent similar parts in all the views.

In my improved umbrella rib A the lower portion is of a smaller section than the upper portion as before stated by rolling or otherwise from said larger section of trough wire and tapering at the junction covered by the strengthening band b³ and to which is pivoted the three tined forked stretcher B, U shaped in cross section—whereby said stretcher may be closed upon the smaller section of the rib, and will with said smaller section form a continuous contour. The metal band b³ is folded and clamped round the said rib at the point where the two sections meet, and turned up to dotted line b⁴, Fig. 1, such thickened and strengthened part being pierced to receive the pivot of the stretcher B. It will be well understood that said stretchers are forked at both ends, the lower end b⁶, Fig. 5, fitting in the grooves b⁷, in the solid tube runner C. The upper end of stretcher is strengthened by a center bit b⁸, Fig. 3, being put inside thereof. If wooden sticks D are employed I have metal collars E put on and sunk flush with said sticks at the opening and closing points, each having a hole therein to receive bolt g, dotted line, Fig. 5, attached to lower end of a solid ring to which the spring button d', is attached, the projecting knob d' carrying the sliding sleeve J to hold and secure the ends of the ribs A. by moving it forward upon the spring box of the sliding runner C. The upper part of the stick D carries a feather edged tapered notch K in the radial grooves of which are secured the tapered ends a⁴ of the ribs A, which are made solid by pieces of wire secured therein. See dotted line, Fig. 1. Stops are used so that the sliding tube runner C does not get too high up the stick.

Umbrella ribs made from one section of trough wire or what is known as ordinary "paragon" section fail in a very material respect, in that no additional strength can be obtained to offer a better resistance to the wind, also for smaller folding purposes, but both these are entirely overcome by making a rib and utilizing a wide or much larger section of wire rib than is ordinarily employed, un-

til the point where the sections unite, then strengthening the rib by rolling or otherwise drawing to a smaller section. This is even larger than the ordinary "paragon rib."
5 When the ribs are completed to form the frame and the cover twisted and folded thereon, there is also less danger of cutting the covering material, because they form merely an unbroken circle, and it is impossible for
10 the stretchers to be bent back to the top lip of the rib.

Having now explained the nature of my invention and the means of carrying it into effect, I desire to secure by Letters Patent and
15 claim—

The herein described umbrella rib comprising two sections, the one section being similar in cross section to the other, having at their points of junction a metal band to which is pivoted a stretcher, U-shaped in cross sec- 20 tion, the cross section of said stretcher being approximately equal to the cross section of the larger section of the rib whereby when the stretcher is folded upon the smaller section of the rib, the entire rib and stretcher 25 will be of approximately uniform diameter.

ERNEST FLUDE.

Witnesses:

FRED FELLOWES WIGGINS,
WALTER SAMUEL SAVIGE.