(No Model.)

J. B. LOGAN.

UMBRELLA.

No. 348,223. Patented Aug. 31, 1886.

Fig. 1.

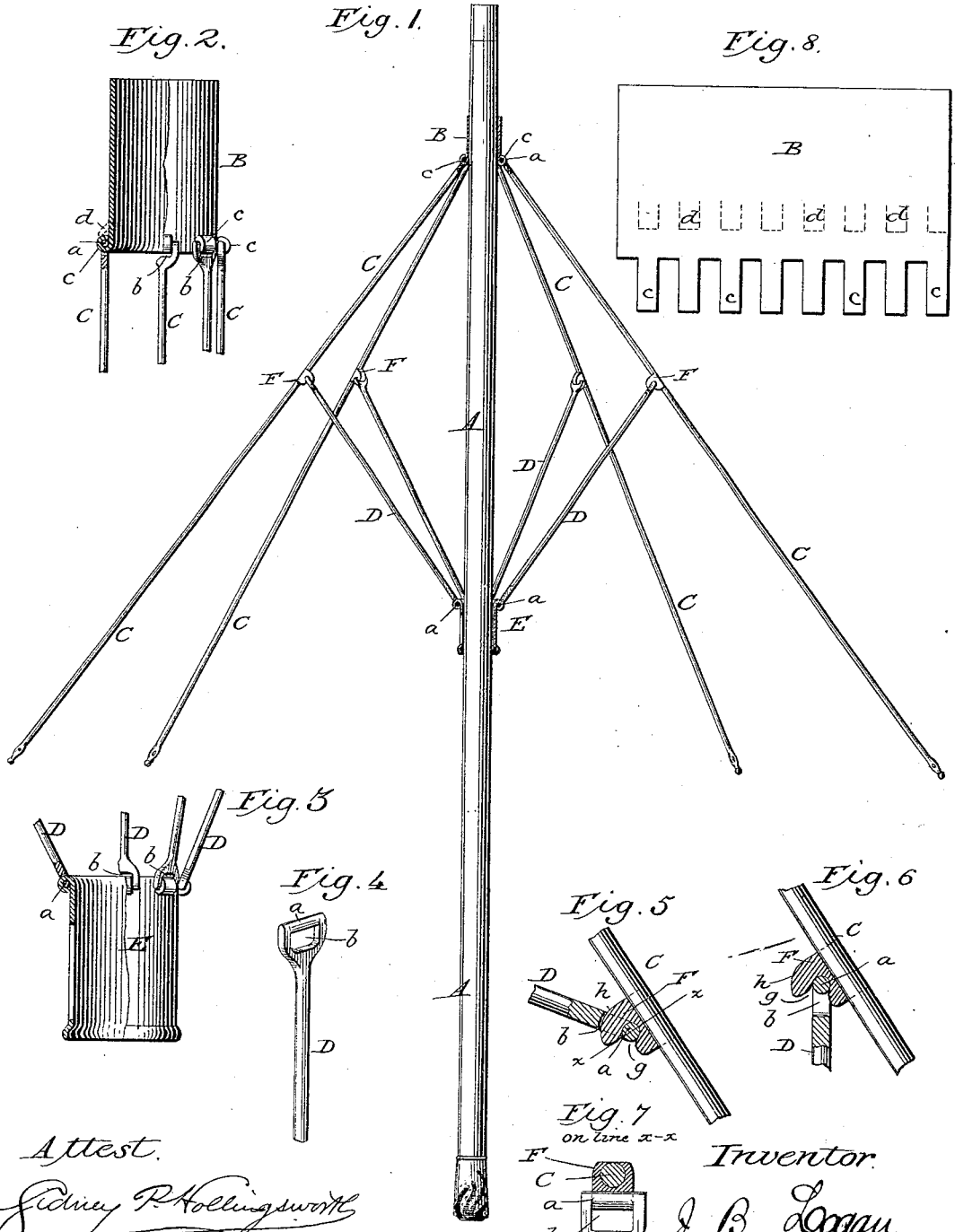


Fig. 2.

Fig. 8.

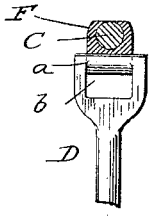
Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7
on line x-x



Attest.

Sidney R. Hollingsworth

Wm. L. Kennedy.

Inventor.

J. B. Logan.

By his Atty.

P. T. Dodge.

UNITED STATES PATENT OFFICE.

JOHN BERNARD LOGAN, OF BALTIMORE, MARYLAND.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 348,223, dated August 31, 1886.

Application filed March 1, 1886. Serial No. 193,572. (No model.)

To all whom it may concern:

Be it known that I, JOHN BERNARD LOGAN, of the city of Baltimore and State of Maryland, have invented certain Improvements in Umbrellas, of which the following is a specification.

The aim of this invention is to produce an umbrella of greater strength and durability than those now in general use, and to adapt its several parts to provide a construction which may be rapidly and cheaply embodied by machinery, and to permit the several ribs and braces to be removed and replaced without interfering in any manner with one another.

To this end it consists in improvements in the construction of the notch, the runner, the ribs and braces, and in the joints for connecting the ribs and braces.

In the accompanying drawings, Figure 1 represents a vertical section through the frame of an umbrella constructed on my plan. Fig. 2 is an elevation, partly in section, of the notch or device for connecting the upper ends of the ribs to the handle. Fig. 3 is a similar view of the runner by which the movable ends of the braces are connected with the handle. Fig. 4 is a perspective view showing the manner in which the ends of the braces and ribs are formed. Fig. 5 is a sectional view through the joint connecting one of the braces with a rib. Fig. 6 is a similar view illustrating the manner in which the ribs are applied or attached. Fig. 7 is a cross-section on the line *x x* of Fig. 5.

Referring to the several figures, A represents the staff or handle, of ordinary construction. B is the device by which the upper ends of the ribs are connected to the handle, commonly known in the art as the "notch." C are the ribs, jointed at their upper ends to the notch; D, the braces, jointed at their outer ends to the ribs, and E the runner, arranged to slide on the handle and jointed to the inner ends of the braces.

Instead of constructing the ribs in the ordinary manner, I form them as represented in Fig. 4, the end being forked or divided into two arms, which are connected by a round transverse wrist or journal, *a*. This end may be made in a separate piece and attached to the rib; but I prefer to widen and flatten the end of the rib by upsetting the metal in a suitable die, and subsequently punching the opening *b* through the widened portion, leaving the wrist at the end. The braces D have their two ends widened and provided with wrists identical or substantially identical with those on the ends of the ribs, as plainly shown in the drawings. The notch B is made usually of a tubular form; but, instead of being constructed as usual at the lower end, it is provided with a series of lips, *c*, which are passed through the ends of the respective ribs and folded snugly around the wrists *a*, as shown in the several figures, each brace connecting its rib to the notch independently of the others, so that each rib may be applied or disconnected without disturbing its companions.

I propose to construct the notch of sheet metal be first punching or cutting from a flat sheet a plate such as shown in Fig. 8, with the projecting lip *c* at the lower edge. The plate thus constructed is bent into a tubular form and its two edges united, after which the lips *c* are bent or curled upward in the form of hooks, so that they may be slipped through the ends of the ribs, after which they are closed down snugly and permanently at their ends against the outside of the tubular portion. The ends of the lips may be secured by inserting them beneath secondary lips, *d*, punched up from the body of the plate, as shown in Figs. 2 and 8, or they may be soldered or otherwise fastened; but under ordinary circumstances, when metal of sufficient thickness is employed, no fastening is necessary. The runner E is constructed, in the same manner as the notch of sheet metal, with lips, which are passed through the lower ends of the braces D. The outer ends of the braces may be connected to the ribs in any appropriate manner; but I recommend as the simplest and best construction at present known to me that represented in Figs. 5, 6, and 7. A metal block, F, is grooved in its back or outer edge to receive the rib, around which it is forcibly clasped, and secured, if necessary, by bracing or otherwise. At its inner edge this block F is provided with a notch, *g*, to receive the wrist *a* of the brace. The upper edge of the block *h* is grooved in the arc of a circle concentric with the opening *g*, while the lower edge is cut away, as shown. In assembling the parts the brace is turned to the position

shown in Fig. 6, its wrist inserted into the notch, as there shown, and then the brace turned upward to its operative position, as shown in Fig. 5. When this is turned, the upper edge, *h*, passes within the eye or hole bearing thereon, as shown in Fig. 5, and prevents the brace from being disconnected.

It will be perceived that under my construction the parts may be cheaply and rapidly produced by machinery; that they may be assembled with great facility, and that when connected they are held with great security. The long wrists *a* and the lips clasping the same form a connection which prevents the ribs or the staff from twisting or turning, and thus the umbrella is given stiffness and rigidity not attained under ordinary constructions.

Having thus described my invention, what I claim is—

1. In an umbrella, the rib having a perforated upper end with a wrist or journal, *a*, thereon, in combination with a notch having lips extended through and clasped around said wrist.

2. The ribs having the perforated upper end and the journal *a*, in combination with the runner having the lips *c* and secondary lips, *d*, substantially as described.

3. As a new article of manufacture, an umbrella-rib having its upper end widened horizontally and formed with an opening, and the horizontal wrist or journal *a*.

4. In an umbrella, the braces D, having their lower ends widened, perforated, and formed with a horizontal wrist, in combination with a runner having lips which clasp said wrist, as described and shown.

5. As a new article of manufacture, a brace for an umbrella, having its two ends widened, perforated, and formed with horizontal wrists or journals, as described and shown.

6. The combination of an umbrella-rib, a brace therefor having its upper end provided with an opening, a horizontal wrist, and a connecting-plate on the rib to clasp the wrist of the brace, as described.

7. The combination, with the brace having its upper end provided with the opening and the horizontal wrist, of the plates G, provided with the notch *g*, and surface *h*, to retain the brace in connection therewith.

In testimony whereof I hereunto set my hand, this 17th day of February, 1886, in the presence of two attesting witnesses.

JOHN BERNARD LOGAN.

Witnesses:

EMORY J. MULLEN,

EUGENE J. O'NEILL.