

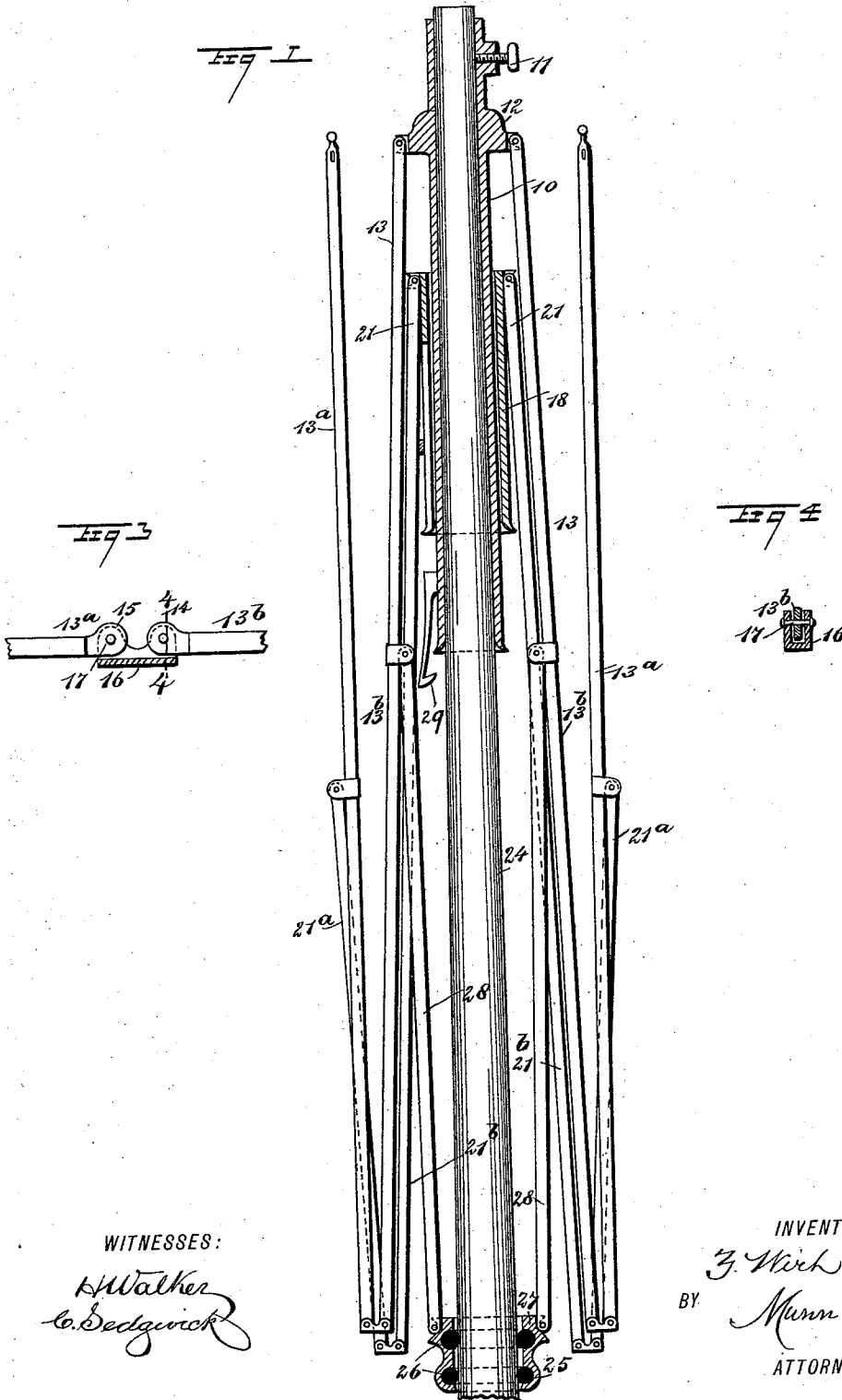
(Model.)

2 Sheets—Sheet 1.

Z. WIRT.
UMBRELLA.

No. 527,823.

Patented Oct. 23, 1894.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR

Z. Wirt
BY *Munn & Co*
ATTORNEYS.

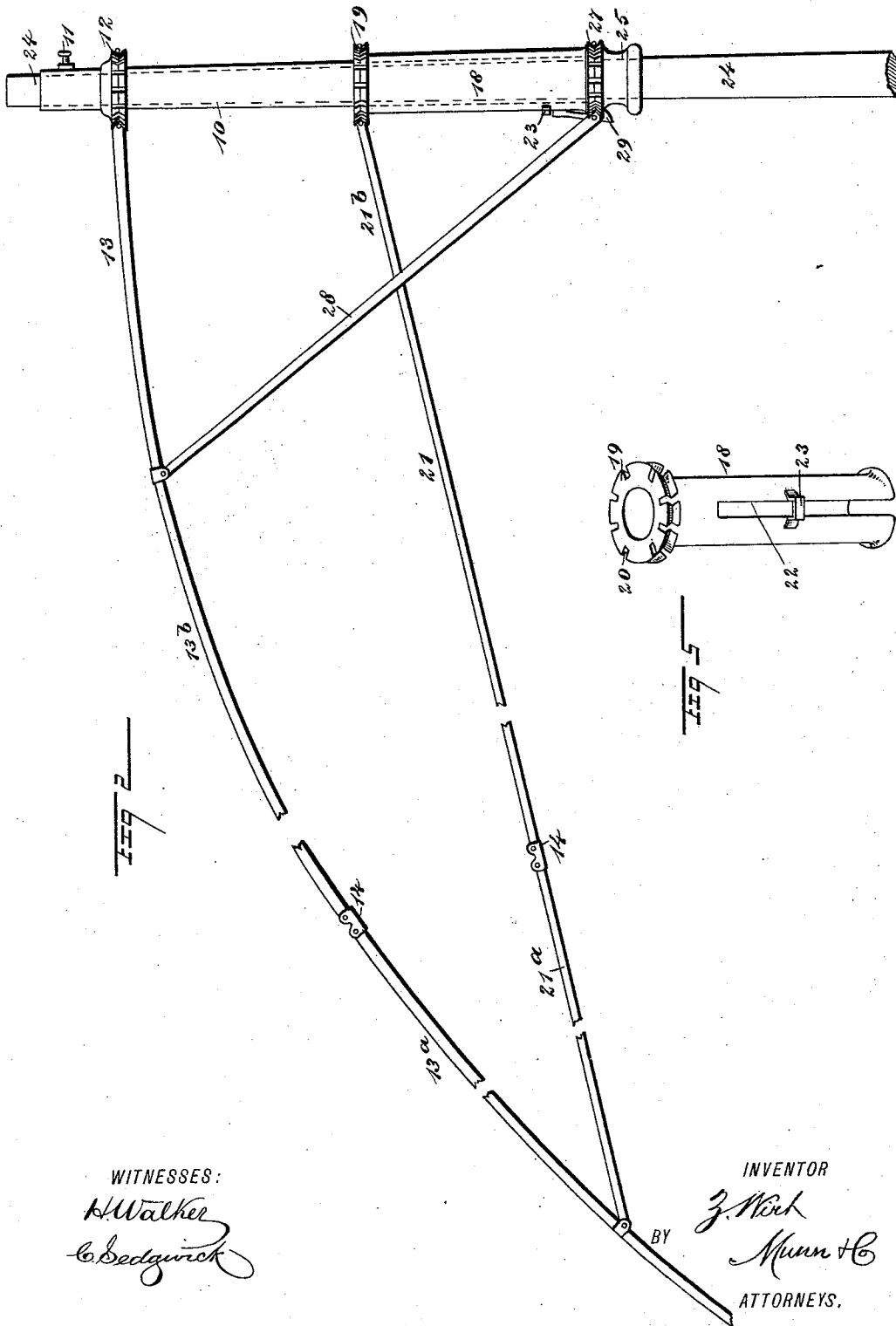
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UNITED STATES PATENT OFFICE.

ZEBULON WIRT, OF MONTICELLO, INDIANA.

UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 527,823, dated October 23, 1894.

Application filed December 17, 1891. Serial No. 415,399. (Model.)

To all whom it may concern:

Be it known that I, ZEBULON WIRT, of Monticello, in the county of White and State of Indiana, have invented a new and useful Improvement in Umbrellas, of which the following is a full, clear, and exact description.

My invention relates to an improvement in umbrellas, and has for its object to construct an umbrella frame capable of being conveniently and expeditiously applied to a walking stick, or a stick of other character, and as readily and conveniently removed therefrom.

Another object of the invention is to provide an umbrella frame capable of folding upon itself so as to reduce it to a minimum of length when not in use, and enabling a person to carry the frame, when removed from the stick, in the pocket, or in a small parcel in the hand, or to readily pack the frame in a valise or other receptacle.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the frame of the umbrella, the stick being shown partially in side elevation. Fig. 2 is a side elevation of a portion of the stick, the runners and the sleeve or shell of the frame, and likewise a side elevation of one of the ribs and its braces, the said ribs and braces being in their unfolded and operative positions. Fig. 3 is a detail view representing a section of one of the ribs and a means for uniting a section of the ribs. Fig. 4 is a vertical section taken practically on the line 4-4 of Fig. 3; and Fig. 5 is a detail perspective view of the upper runner.

The frame of the umbrella consists of the tube or shell 10, circular in cross section, which shell is of some length and is provided near its outer end with one or more set screws 11. Between its outer end and the center, the shell or tube 10 has formed upon its outer face a collar 12, which collar is provided with a series of slots whereby it corresponds essentially to the top of an umbrella, as the

ribs 13, are pivoted at their inner ends in the recesses of the collar.

The ribs of the umbrella are preferably made of a thin material, and a material that is quite flexible, and in cross section the ribs are also made preferably U-shaped. Each rib is divided into sections, preferably two, designated in the drawings as 13^a and 13^b. The two sections are connected by a hinge joint 14, shown in detail in Fig. 3; and as illustrated in Figs. 3 and 4, the approaching end of each rib section is made circular, or practically so, as illustrated at 15 in Fig. 3, and a strap 16, somewhat U-shaped in cross section, receives the circular extremities of a rib, and these extremities are pivotally connected to the strap by passing through them and also through the strap pins 17.

A runner 18, is held to slide upon the shell or tube 10 below its cap-collar 12. This runner is provided with the usual upper flange or rib 19 containing a number of vertical recesses 20, in which recesses the inner ends of braces 21, are pivoted, which braces are preferably made in two sections 21^a and 21^b, the sections being connected in like manner to the sections of the ribs. The outer ends of the braces 21, are pivotally connected with the outer sections 13^a of the ribs preferably near the center of said sections, as illustrated in Figs. 1 and 2. These braces 21 somewhat approximate the ordinary braces of an umbrella frame used in connection with the ribs, but are intended mainly to bow the ribs when the umbrella frame is opened out.

The runner 18 is provided in one or in both sides with a longitudinal slot 22, extending from a point near its upper end through the lower edge, as is best shown in Fig. 5; and usually the slots 22 are crossed by a strap 23.

The stick 24 upon which the frame is to be applied is made tapering, and said stick may consist of an ordinary walking cane having practically a smooth outer face; or a stick constructed of removable sections; and in the application of the frame to the stick, the shell or tube 10, which is provided with a tapering inner surface, is forced downward over the end of the stick and secured thereto through the medium of the set screws 11.

A second runner 25, employed for operat-

ing the umbrella frame, is held to slide upon the stick below the shell or tube 10. This second or lower runner 25, is provided with an interior rubber packing 26, consisting preferably of one or more rings held in suitable channels, and the packing is introduced in the runner in order that it will engage firmly with the stick whether traveling along the thicker or the thinner portions thereof, and also prevents the surface of the stick being marred. This second or lower runner is provided at its upper end with a rib 27, in which rib the lower ends of a series of short braces 28 are pivoted, the upper ends of said braces crossing the longer and sectional braces 21 and having their upper ends pivoted to the inner sections 13^b of the ribs at or near the center of the latter, as is also best shown in Figs. 1 and 2. These short braces 28, serve to stiffen the umbrella frame and render it exceedingly strong and durable.

At or near the lower end of the shell or tube 10 one or more spring latches 29 are rigidly secured. These spring latches extend downward below the lower end of the tube or shell, as best shown in Fig. 1, and their heads incline inward in direction of the stick. The latches are so located that when the upper runner 18 is carried downward they enter the slots 22 of the runner.

In the operation of the umbrella, when it has been attached to the stick and it is desired to open the frame, the lower runner 25 is pushed upward, which forces out the ribs 13, and in so doing the main braces 21 are straightened and the ribs thereby bowed, and the upper runner 18, is carried downward upon the sleeve or shell 10 in a manner to engage with the lower runner when said runner is brought in engagement with the lower portion of the shell, as shown in Fig. 2. When the lower runner is in this position the frame is fully open, the runner being maintained in its upper position as long as may be found desirable by the latches 29, which automatically engage with its rib 27. The straps 23 upon the upper runner may serve to limit its downward movement, in which event they engage with the upper ends of the latches, but the main office of the straps is to strengthen the runners.

When the umbrella is not needed, the latches are disengaged from the lower runner, and it is drawn downward upon the stick thus drawing the ribs and braces with it and carrying the upper runner outward a slight distance. After the ribs and braces have been folded down essentially parallel with the stick, the main braces 21 and the ribs 13 are then bent upon themselves at the hinge connection of their sections, and the outer sections are carried upward upon the inner sections, as shown in Fig. 1, thus reducing the length of the umbrella frame about one-half. This having been accomplished the set screws 11 are loosened, and the frame is removed

from the stick and may be placed in the pocket or in quite a small valise or bag.

The cover of the umbrella may be attached to the frame in any manner known to the trade. In this connection the upper curved portion of the collar 12 may be made separate from that portion in which the bows are pivoted, and one section screwed upon the other to clamp the cover between them.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An umbrella frame comprising a tube or shell having a cap flange and latches secured thereto, a runner held to slide upon the shell, ribs made in sections hinged to the cap of the shell, braces made in sections pivoted to the runner and to the ribs, a second runner adapted for engagement with the latches of the shell, and braces connecting this second runner and the ribs, as and for the purpose specified.

2. An umbrella frame adapted for attachment to or removal from a cane or like stick, comprising a tube or shell having a cap flange, fastening devices and latches connected therewith, ribs made in hinged sections pivoted to the cap-flange of the shell, a runner held to slide upon the shell, braces made in hinged sections pivoted to the runner and to the ribs, a second runner independent of the first and beneath it, having braces pivoted thereto and to the ribs between the cap joint of the shell and the pivotal connection of the sectional braces, substantially as shown and described.

3. In an umbrella, the combination, with a stick, a tube or shell fitted to the stick, and fastening devices removably securing the shell to the stick, the said shell being provided with a cap flange near one end and latches near the opposite end, and a runner capable of sliding movement upon the shell beneath its cap flange, of ribs constructed in hinged sections pivoted at their inner ends to the cap-flange of the shell, braces constructed in hinged sections pivoted at their inner ends to the runner and at their outer ends to the outer sections of the ribs, a second runner independent of the first and adapted to travel upon the stick below the shell, the said runner having a flange for engagement with the latches, and braces pivotally connected to the second or lower runner and to the inner sections of the ribs, as and for the purpose specified.

4. In an umbrella, the combination, with a stick, a tube or shell fitted to the stick, and fastening devices removably securing the shell to the stick, the said shell being provided with a cap-flange near one end and latches near the opposite end, and a runner capable of sliding movement upon the shell beneath its cap flange, of ribs constructed in hinged sections pivoted at their inner ends to the cap-flange of the shell, braces constructed

in hinged sections pivoted at their inner ends to the runner and at their outer ends to the outer sections of the ribs, a second runner independent of the first and adapted to travel upon the stick below the shell, the said runner being provided with a rib at its upper end and an interior flexible packing, and braces each in one piece pivotally connected with the upper portion of the lower runner and the inner sections of the ribs, substantially for the purpose specified.

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