

No. 646,725.

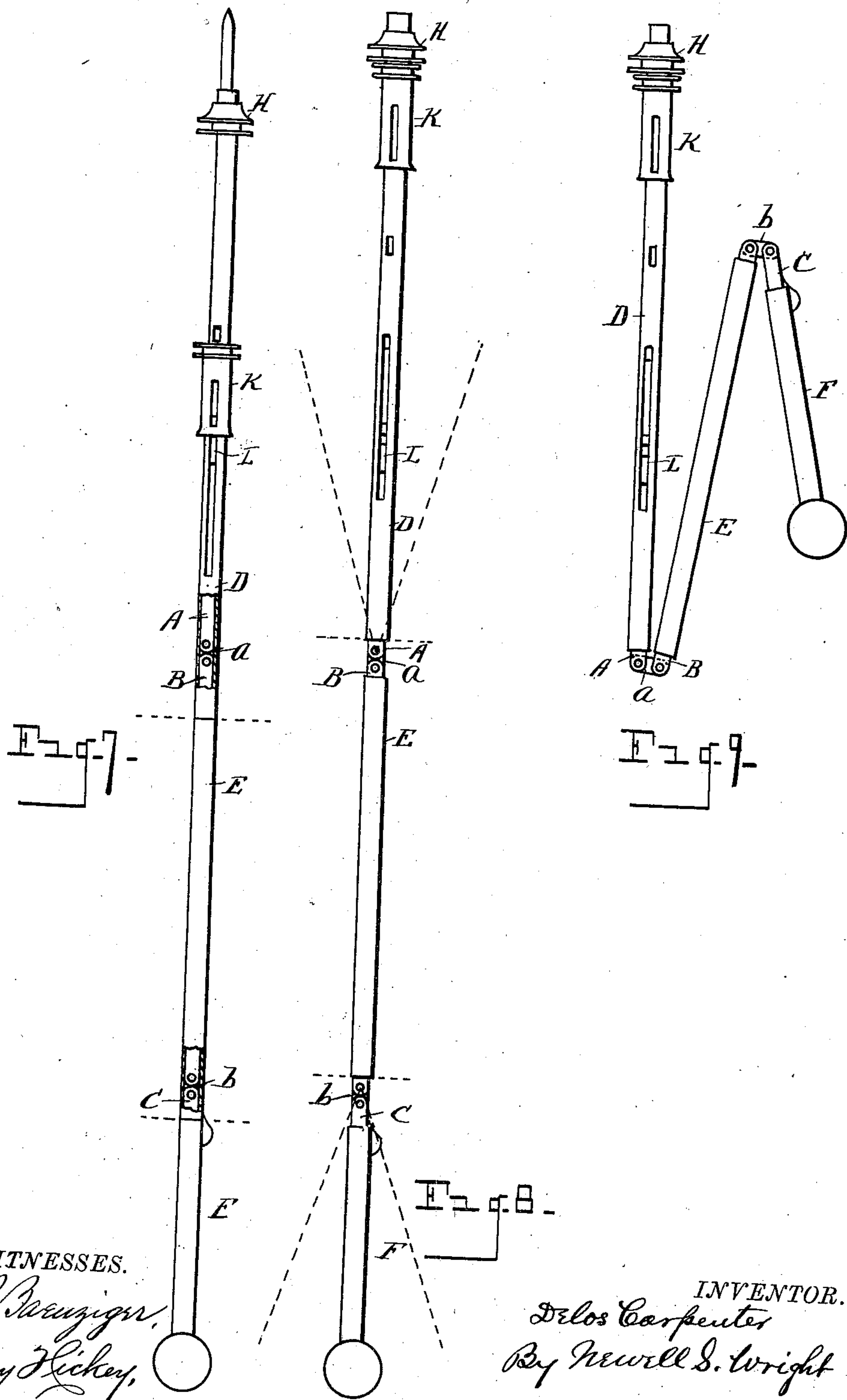
D. CARPENTER.
FOLDING UMBRELLA.

(Application filed Nov. 29, 1897.)

Patented Apr. 3, 1900.

(No Model.)

2 Sheets—Sheet 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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FOLDING UMBRELLA.

SPECIFICATION forming part of Letters Patent No. 646,725, dated April 3, 1900.

Application filed November 29, 1897. Serial No. 660,051. (No model.)

To all whom it may concern:

Be it known that I, DELOS CARPENTER, a citizen of the United States, residing at Orion, county of Oakland, State of Michigan, have
5 invented a certain new and useful Improvement in Folding Umbrellas; and I declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object certain new and useful improvements in umbrellas; and
15 it consists more particularly of a folding umbrella of novel construction and utility.

My invention consists of the construction, combination, and arrangement of devices hereinafter described and claimed, and illustrated in the accompanying drawings, in
20 which—

Figure 1 is a view of an umbrella-frame, showing parts in vertical section and parts in elevation. Fig. 2 is an enlarged view,
25 partly in section and partly in side elevation, of the notch and related parts. Fig. 3 is an enlarged detail view of portions of the umbrella-handle and ferrules with the notch attached, the same being that portion above the
30 horizontal dotted line 33 in Fig. 1. Fig. 4 is an enlarged view of portions of the ferrules D and E with the inner rods and their connections. Fig. 5 is a detail view showing a bayonet-joint of the upper umbrella-rod with
35 the adjacent ferrule. Fig. 6 is a side elevation of the features of the device illustrated in Fig. 2. Fig. 7 is a detail view of the handle or stick of the umbrella shown in elevation and partly in section, showing the ferrules in place to hold the handle in rigid position. Fig. 8 is a side elevation showing the
40 ferrules moved into position to permit the folding of the inner portions of the handle, and Fig. 9 shows the handle in partially-folded position.

The aim of my invention is to provide a folding umbrella which may readily be folded up into compact form and which may conveniently and quickly be folded and erected
50 in the form of the usual umbrella for use, the umbrella when in position for use being firm at every part and of tasty appearance.

The drawings show the umbrella-cover omitted.

I carry out my invention as follows:

A, B, and C represent three portions constituting my umbrella-handle proper, said parts A, B, and C made of customary tubing or otherwise and jointedly connected at their adjacent ends, as by links, (indicated at *a* and
60 *b*.) These links may be riveted or otherwise secured with the adjacent parts of the handle. By means of this construction the three rods of the handle may readily be folded when the joints are free to move. Upon the parts A
65 and B of the handle are sleeved long ferrules, (indicated at D and E.) Beneath the ferrule E is an additional ferrule F, stationary upon the lower end of the handle. The ferrules D and E are constructed and arranged to nor-
70 mally sleeve over the joints *a* and *b* in the handle-rods when the umbrella is in position for use, so as to hold said joints rigid. In this position the ferrules D and E are held in connected position in any suitable manner,
75 as, for example, by a suitable spring-latch, (indicated at *e*, Figs. 1 and 4,) one end of the latch being secured firmly within one of the ferrules, the opposite (as the upper) end of the latch catching or hooking into the adjacent
80 end of the corresponding ferrule, the corresponding ferrule being provided with any suitable notch or opening, as at *e'*, for that purpose. G denotes the ribs, which are formed of two parts G' and G². These ribs may be
85 jointedly connected at their adjacent ends in any suitable manner, as at *g*, as in the manner, for example, described and shown in a patent granted to me by the United States Patent Office for a folding umbrella, No. 577,234,
90 dated February 16, 1897, the joint being such that the lower portions G' may be folded upward and outward over and alongside the upper portions G², the upper ends of the portions G² being connected with a top notch H,
95 as hereinafter described. My present invention is not limited to any particular method of constructing the joint connecting the portions G' and G².

J denotes the brace-rods, united at their inner extremities to a runner K in a customary
100 manner and at their outer ends with the upper portions G² of the ribs, as at *j*, in any suitable manner. The runner K is sleeved

upon the ferrule D. A spring-catch L is provided in a customary manner to support the runner. The jointed connection of the brace-rods with the runner is indicated at *j*.

5 A very important feature of my present invention consists in the construction of the head or top notch H and the manner of its connection with other parts of the umbrella-frame, one of my chief objects being to provide a top notch which shall be of small dimensions, and thereby give a tasteful appearance to the umbrella, and yet to provide ample facility for the working of the parts in connection therewith. Instead of employing
10 a chambered top notch, as embodied in my patent above referred to, wherein the upper end of the runner may be received in the operation of the device to permit the braces being thrown sufficiently upward to permit the folding and unfolding of the ribs and to permit the braces J being folded upward and inward alongside the folded ribs, I now contemplate a top notch connected, in the instance shown in the accompanying drawings,
15 with the upper ferrule D at the upper end of said ferrule, the notch being secured over the upper end of the said ferrule in any suitable manner, as indicated at *h*. It will be obvious that in order to fold the ribs and braces upward the runner must be slipped upward upon the sleeve D past the center or past a horizontal line drawn through the two joints *j*, and in order to accomplish this end some expansion must be afforded to the ribs in their
30 connection with the top notch. In dotted lines in Fig. 1 I show the position assumed by the runner when slipped up against the upper notch into folded position. My present invention therefore contemplates an expansible top notch, the same being constructed, as shown, of a hollow or tubular body *H'*, secured upon the ferrule D, the notch being constructed with peripheral recesses, (indicated at *h'*), said recesses opening downward
45 and also opening outward to receive expansible intervening devices or links *H*², jointedly connected at their upper ends with said recesses, as indicated at *h*², forming a part of the notch and making the notch expansible, said links being jointedly connected at their
50 opposite ends, as indicated at *h*³, to the corresponding ribs G. When the runner K is forced upward in passing the center above mentioned, the links *H*² will open outward, thus permitting the runner to pass the center; but when the runner is forced up into contact with the notch H the links *H*² will fold inward and about the upper end of the runner, as indicated in dotted lines in Fig. 1.
60 To prevent an undue expansion of the head or of the connection of the ribs therewith, the top notch is preferably provided with a cap *H*³, projecting over the body *H'* of the notch and into proximity with the upper edges of said recesses to form a stop for the upward movement of said links *H*². The body *H'* of the notch and its cap *H*³ may be held in place

upon the ferrule D in any suitable manner; as by a nut *H*⁴. The notch thus constructed and embodying the links *H*², united therewith, forms an expansible notch and may be of small dimensions. The notch is preferably constructed with two links *H*² to engage each of the portions *G*² of the ribs.

The upper end of the portion A of the handle-rods, it will be perceived, passes through the notch and through the upper end of the ferrule D and projects thereabove when the umbrella is in expanded position. The lower end of the portion C of the handle-rod projects through the lower end of the ferrule E and is provided with a knob or other suitable hand grasp. To fold up the umbrella, the spring stop or latch at *e* is released from the upper ferrule D, and the handle is then pulled
75 downward, so as to bring the handle-joint *a* downward in juxtaposition to the joint of the two ferrules D and E, permitting the handle-rods to be folded at that point, as at the dotted line 3 3, Fig. 1. The handle is also moved
80 into position where the joint *b* is in juxtaposition with the joint of the ferrules E and F, as at the dotted line indicated at 4 4, Fig. 2, permitting the joint of the umbrella-rods to be flexed or bent. The manner of folding up the ribs and braces has already been described. The manner of unfolding and erecting the umbrella for use or of putting it into the condition of an ordinary umbrella will readily be understood. The runner is run
90 down upon the adjacent sleeve to the required position, the lower portions of the ribs are folded downward into place, and the jointed portions of the handle-rods are held in rigid position by suitable movements of the ferrules D and E. Should the spring-stop at *e* be not
95 sufficient to hold the adjacent parts rigid and firmly as against a shock or jar upon the upwardly-projecting end of the umbrella-handle, my invention contemplates constructing the ferrule D with a laterally-projecting orifice (indicated at *d*, Fig. 5) communicating with the vertical elongated slot *d'* in said ferrule, permitting the umbrella-handle to be
100 partially turned about to engage the upper end of the spring-stop in the laterally-projecting orifice. This bayonet-joint will firmly hold the parts under all circumstances. I do not limit myself, however, solely to this construction, as the handle may be held firmly in position for use in any suitable manner. The
105 employment of the long ferrules D and E with their spring-stop enables me to hold the handle and ferrule in rigid position when set for use.

I prefer that the links connecting the ribs with the body of the top notch should be of curved form, so as to close more compactly inward about the upper end of the runner.

While I have shown and described in connection with the accompanying drawings my improved expansible top notch connected with the upper end of a ferrule upon the handle-rods, I would have it definitely under-

stood that I do not limit the application of my expansible top notch to the ferrule alone, inasmuch as the top notch may be used equally well upon handles of other constructions, as upon handles, for example, like that embodied in my patent above referred to, or still other modifications in the constructions of umbrella-handles, and my invention is therefore designed for use upon any form or construction of umbrella-handles wherever it may be found applicable and wherever it is desired to have the top notch expand to receive a runner and to close down compactly when the umbrella is in position for use, so as to present a neat and tasty appearance, such an appearance requiring a small top notch. It will be perceived that the expansible notch contracts or closes inward at all times except when it is desired to expand the same in order to permit the runner to pass the center and allow the umbrella to fold neatly. I do not limit myself to any particular number of expansible portions connected to the body of the notch, nor to any particular shape or form of the same, nor to any specific manner of fastening it in place. The expansible top notch is applicable within the scope of my invention to any folding or telescoping umbrella. This head or top notch, with its cap, may be made in the form of a very neat small tapering device, thereby getting around the objectionable feature of a large head or notch heretofore common in various constructions of umbrellas. Moreover, I would have it definitely understood that I do not limit myself to the construction of my improved head or top notch with the cap as a part thereof, as the cap might be omitted without departing from the scope of my invention, inasmuch as when the cover is on tight or the parts are firmly connected and in place in the complete umbrella, the actions of the expansible features will govern themselves without requiring at all times the presence of the cap.

It will be perceived that the three portions

or handle-rods A B C of the handle are sleeved through the ferrules D and E, said ferrules simply being held in engagement with said rods by the spring-latch e, said ferrules thereby stiffening said handle-rods. By depressing the spring-latch e the handle-rods A B C may be entirely slipped out of said ferrules. In this way the handle-rods are separable and detachable entirely from the ferrules, while the lower handle-rod C also forms or is made a part of the knob or other similar device. This construction greatly facilitates the construction of the handle as a whole and simplifies and cheapens any repair of these parts of the umbrella.

What I claim as my invention is—

1. In a folding umbrella, the combination of the top notch, the ribs, the runner, and the braces connecting the runner with the ribs, said runner arranged to slip upward against the notch, and the notch provided with expansible devices connecting the ribs therewith to permit said movement of the runner, and the notch closing inward about the upper end of the runner when in a folded position, substantially as set forth.

2. In a folding umbrella, the ribs constructed of two jointedly-connected rigid sections permitting the lower sections to fold outward and upward, a top notch provided with expansible devices having a jointed connection with the upper ends of the upper sections of the ribs, permitting the upper sections to also fold upward, a runner, braces jointedly connecting the runner with the upper sections of the ribs, said runner arranged to slide upward past the center to permit the upward folding of the upper sections of the ribs, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

DELOS CARPENTER.

Witnesses:

N. S. WRIGHT,
MARY HICKEY.