

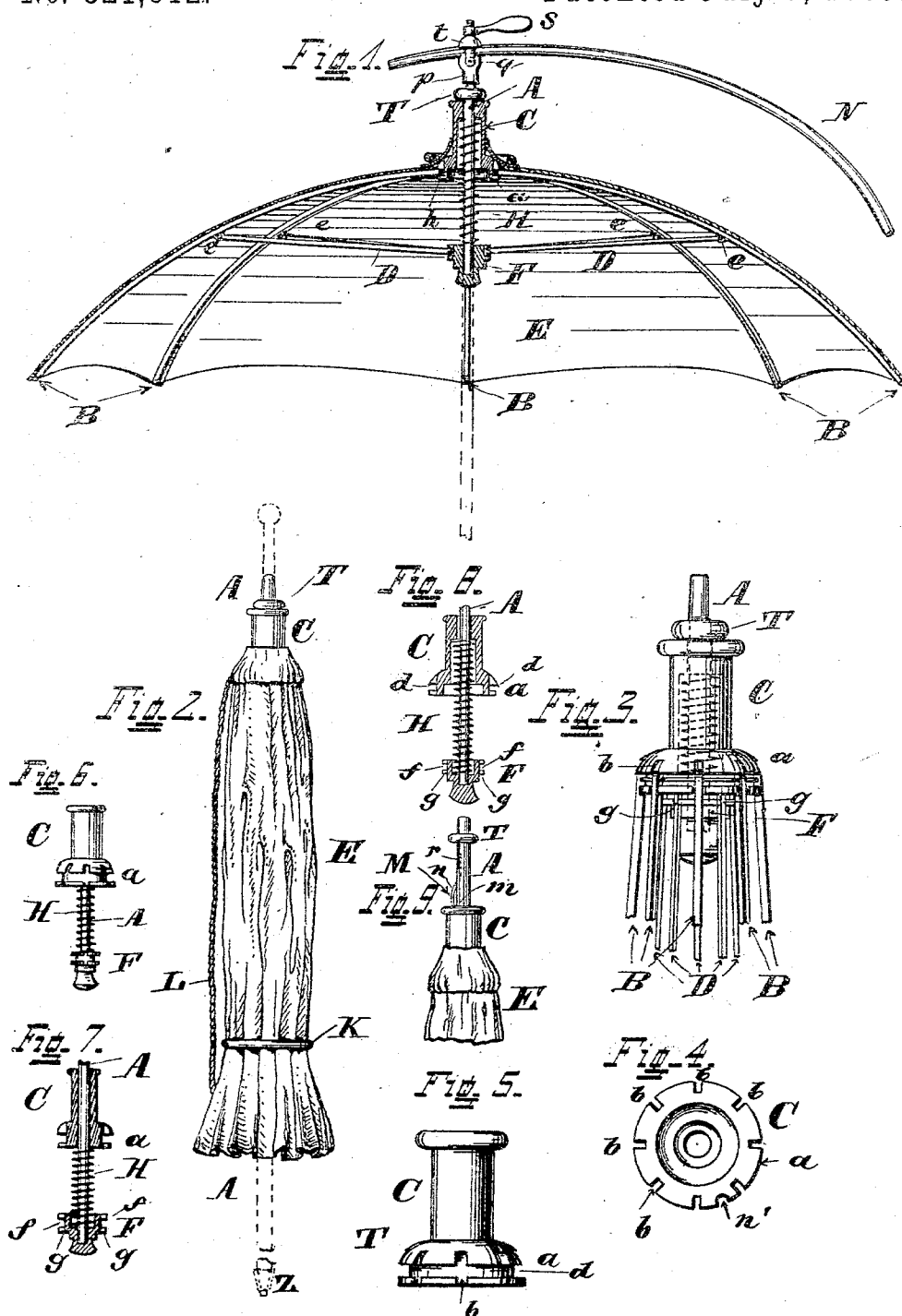
(No Model.)

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UMBRELLA AND PARASOL.

No. 321,612.

Patented July 7, 1885.



~~Attest~~
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UMBRELLA AND PARASOL.

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To all whom it may concern:

Be it known that I, EDWARD C. KUHN, a resident of the city of Cincinnati, in Hamilton county, and State of Ohio, have invented certain new and useful Improvements in Umbrellas, Parasols, and the like, of which the following is a specification.

The several features of my invention and the advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, Figure 1 represents a vertical central section of an umbrella, illustrating my invention. Fig. 2 represents in side elevation the umbrella closed. Fig. 3 represents, in a slightly enlarged view, the upper portion of the frame-work of the umbrella divested of its covering. Fig. 4 represents a view of the bottom of the preferred form of runner employed in aiding to effectuate my invention, the view being on the same scale as Fig. 3. Fig. 5 represents a side elevation of the said runner on the same scale as Fig. 3. Figs. 6, 7, and 8 represent modifications of certain features of my invention. Fig. 9 represents the upper portion of an umbrella on the same scale as Fig. 1, and showing a mode of retaining the umbrella in a closed position.

A indicates the main stick or shaft of the umbrella.

B indicates the bows. The upper inner ends of these bows are connected to runner C. The preferred mode of connecting them to the runner is as follows: The lower portion of the runner is provided with an enlargement or peripheral flange portion, *a*, and in this enlargement at proper intervals are vertical slits or slots *b*. Into each of these slots is fitted the inner end of a bow, B. The inner end of each bow is perforated, and through this perforation passes a wire, *h*. One wire serves to connect together all of the bows. This wire lies in a peripheral annular channel, *d*, in the flanged portion of the runner, and encircles the runner, the two ends of the wire being brought together and twisted, and the twisted ends, in order to put them out of the way, are then preferably bent into a vertical slit, *n'*, located in the periphery of the flanged portion of the runner. Thus the wire connects the bows to

the runner, and the inner ends of the bows are pivoted to the wire *h*, thus securing the bows to the runner by a pivotal connection, which is the desirable description of connection.

Stretchers D are present. To each bow is connected by a pivot-fastening, *e*, one end of one of the said stretchers D in any suitable manner. These stretchers D are of such a length and are connected to the bows at such a point as that when the runner is duly elevated these stretchers D shall operate to duly extend the bows and stretch the cover E. The other end of each stretcher D is connected to a sleeve or piece technically known as the "notch" F, in any suitable pivotal manner. The preferable mode of making such connection is as follows: The periphery of the notch F has an annular groove, *f*, and in this same periphery are vertical slits or notches *g*. In each vertical slit *g* is placed the inner end of the adjacent stretcher D. A wire is passed through the hole in the inner end of each stretcher, and lies in the groove *f*, and the ends of the wire are brought together and twisted or clinched. Thus the stretchers are securely fastened to the notch F, and are free to turn on their pivotal connection thereto. The notch F is rigidly attached to the main stick A of the umbrella, and where the handle of the umbrella extends down below the lower ends of the notch F, when folded, the latter will usually embrace the stick A.

It will be observed that in the arrangement and combination of the notch F and runner C, bows, and stretchers, according to my invention, the runner is above the notch, and connected to the inner ends of the bows, while the inner ends of the stretchers are connected to the notch, thereby differing from the ordinary mode.

As the umbrella is closed the runner will descend and approach the notch, and as it is opened the runner will rise and leave the notch. Umbrellas, parasols, and shades constructed according to this feature of my invention can be opened and closed at the outside, and without applying the hand to the stick below the bows or introducing the hand within the bows and cover. The operator is enabled to accomplish the operation of closing or opening the umbrella, or the like, by apply-

ing one hand to the runner above the bows and his other hand to the stick above the runner. Such capacity to be operated at the outside is, in many kinds of umbrellas, parasols, and shades, a great and important advantage. Without specifying the many instances in which such capacity becomes of advantage, it will be sufficient to mention one—viz., in shades for children's carriages, the shade is suspended over the head of the child occupying said carriage, and it is often desirable to open and close the shade, and it is desirable to do this without in anywise touching or by any means hurting the head or person of the child. This is practically the case when the child is asleep. By means of my aforesaid construction and arrangement of the parts of the shade the latter can be opened or closed by manipulation at the apex of the shade, thus avoiding all chance of touching or hurting or disturbing the child. In such event a suitable catch is provided, whereby, when the umbrella has been opened, it may be retained as long as desired in the open position.

I prefer to combine with the aforesaid feature of my invention another feature which shall render the umbrella capable of opening automatically, and the preferred means for rendering the umbrella capable of this last-named function are as follows: Between the notch F and the runner C, I so locate a spring or springs as that when the umbrella is closed the spring or springs shall be compressed between the runner and the notch. The preferred form of spring for this purpose is a spiral one, H, inclosing the stick A, and at its upper end bearing up against the runner, and at its lower end bearing down against the notch. This spring may bear against the bottom of the runner and the top of the notch F, as shown in Fig. 6, without entering a recess in either the runner or the notch. This spring may bear against the bottom of the runner without entering a recess therein, and may enter a recess in the notch, as shown in Fig. 7. The spring may bear against the top of the notch without entering a recess therein, and may enter a recess in the runner, as shown in Fig. 1. The spring may enter a recess in the runner and a recess in the notch, as shown in Fig. 8.

In all umbrellas and parasols, except those of the turret form, it is very desirable that the runner and notch should, when the umbrella is closed, approach very near to or in contact with each other, in order to allow the stretchers to be made sufficiently long to widely and properly expand the bows when the umbrella or parasol is opened. For this reason a recess in the runner or in the notch, or recess in the runner and a recess also in the notch, is desirable, as such recess or recesses allow the spring when the umbrella is closed to be entirely out of the way of the notch and runner as the latter approach each other—that is to say, such recess or recesses prevent the spring when closed from being a barrier between the

bottom of the runner and the top of the notch, as the said runner and notch approach together. Thus the runner and notch can come into close juxtaposition or into actual contact, if desired. The preferred construction is that shown in Fig. 1, where the lower end of the spring rests upon the top of notch F and does not enter any recess in said notch, and where the upper end of the spring enters a quite long recess in the runner C.

The mode in which my invention operates is as follows: Suppose the umbrella to be already opened. The stick A of the umbrella is grasped above or below with one hand and the other hand presses upon the upper portion of the bows in the neighborhood of the stick A, thereby bending down the bows and closing the umbrella. When the umbrella is closed, it may be kept closed by slipping a ring, K, down over the folded bows and cover, as shown in Fig. 2. This ring may, when desired, be prevented from being separated altogether from the umbrella by a cord, L, connected at one end to the umbrella and at the other end to the ring, or the cord L may pass over the ring and be connected at one end to the umbrella cover below the ring and at the other end to the upper end of the umbrella above the ring. This last-mentioned mode of fastening the cord to the umbrella in relation to the ring is illustrated in Fig. 2. When it is desired that the umbrella be opened, the ring K is removed from its place around the folded portion of the umbrella either by moving it down or up, preferably by moving it up, and when the cord is fastened, as in Fig. 2, then always by moving the ring up to the upper protruding portion of the runner or stick A. As soon as the bows are released from the embrace of the ring and are free to expand, the spring H compressed between the runner and the notch, being now permitted to act, operates to raise the runner on the stick, and thus, lifting the bows and the outer ends of the stretchers, expands the umbrella to its proper open condition.

Ordinarily it is desirable to prevent the spring from raising the runner too high, and for such purpose a suitable stop, T, is provided at any suitable point and in any proper manner. Preferably this stop is fixed to or formed with the stick at the proper distance above the runner, as shown in the drawings. The stop prevents further upward movement of the runner when the umbrella has been expanded. The spring now operates to keep the umbrella open until the latter is closed, as aforementioned.

Various means other than the ring K may be employed to retain the umbrella (when closed) in its closed condition. One only of these will be specified, viz: a spring-catch, as M, (see Fig. 9,) may be fastened lengthwise in the stick A above the point of the stick occupied by the runner when the umbrella is closed. This spring-catch has a square end or shoulder, m, and a beveled portion, n, and

beneath this shoulder *m* and portion *n* is a slot or recess in the stick *A*, which receives the said shoulder and portion *n* of the catch when the catch is pressed inward. When the umbrella is being closed, the catch is, by the runner, pressed down into the slot in stick *A* until the runner has passed over shoulder *m*; then the catch will spring out of the slot in the stick *A* and the shoulder or face *m* present a barrier to the runner rising. Consequently the umbrella will remain closed until, through human agency, the spring catch is depressed into the slot in the stick, out of the way of the runner *C*. The latter will then, through the agency of the spring, rise, and the umbrella will be opened.

Instead of a spring acting by compression and expansion to open the umbrella, a spring acting through extension and contraction may be employed. For illustration, a spring or springs might be suitably stretched between the runner and that part of the stick which is above the runner, and lie within or without, or both within and without, the stick.

My invention in each and all of its features aforesaid is equally applicable to umbrellas, parasols, and sunshades of various descriptions. It may be used with the stick *A* extended down any desired distance to form a handle, as shown by the dotted lines in the lower portion of Fig. 2. It may be used as a tourist's combined walking-cane and umbrella, and in such event the lower extended end will be provided with a handle portion for holding the umbrella when opened, and with a ferrule or metal cane-tip for resting the said lower end upon the ground while the umbrella is closed and is being used as a cane, and the upper end of the stick above the runner will be provided with a suitable handle (illustrated in said Fig. 2 by dotted lines) for holding the umbrella when closed and while being used as a staff or cane.

My invention is also applicable to a sunshade for road-vehicles, and is well adapted for children's carriages. When applied to vehicles, that lower portion of the stick *A* which is beneath the notch is preferably omitted and the upper end of the stick is secured to an arm or support, *N*, connected to the vehicle and arched over the seat or seats to be covered by the umbrella or shade.

Any suitable means of connecting the stick *A* to the arm *N* may be employed. Preferably means whereby the shade may be adjusted along the arm *N* and inclined at any desired angle thereto are to be used. One description of such means is shown in Fig. 1, and in general consists of a socket, *p*, into which the upper end of the stick *A* is secured. This socket *p* has a peripheral groove, into which the arm *N* fits. Yoke *q* receives between its ends the socket *p*, and the latter is pivotally connected thereto. On the upper end of the yoke *q* is secured a nut, *S*, and between this nut and the arm *N* is a washer, *t*, concave below, and into which concavity the arm *N* fits. The upper

end of the yoke passes through the washer. As the nut *S* is tightened the rod *N* is tightly clasped between the socket *p* and washer *t*.

The conformation of the parts allows of the umbrella, parasol, or shade being set at any desired angle. As the clamp *p q t S* is well known, a more particular description of the same and of its functions is omitted herefrom.

Throughout the specification the words "above," "below," "beneath," "upper," "lower," "top," "bottom," and the like are employed with reference to the position of the umbrella, parasol, or shade as shown in the figures of the accompanying drawings.

Among the prominent advantages resulting from my invention are the following, viz: Any one, even a child, can open the umbrella. All reaching in under the bows to reach a latch therein is avoided. Where a spring is present between the runner and the notch, the umbrella will unfold itself automatically when the ring *K* is removed or catch *m n* is depressed, and will retain itself in the expanded position without requiring to be latched.

While the several features of my invention are preferably employed together, one or more of said features may be employed without the remainder. In so far as applicable, one or more of said features may be used in connection with umbrellas, parasols, or shades of kinds other than those particularly hereinbefore specified.

In the following claims the word "umbrella" will be employed generally to represent all descriptions of umbrellas, parasols, shades, and the like to which my invention or any of its features is applicable.

What I claim as new and of my invention, and desire to secure by Letters Patent, is:—

1. In an umbrella, the bows pivotally connected to the runner, and the inner end of the stretchers pivotally connected to the notch, and a spring interposed between the notch and the runner, substantially as and for the purposes specified.

2. The combination of a runner located above the notch, the latter pivotally connected to the stretchers, and the runner pivotally connected to the bows, and a spring interposed between the notch and the runner, substantially as and for the purposes specified.

3. The combination of a runner located above the notch, the latter pivotally connected to the stretchers, and the runner pivotally connected to the bows, and a spring interposed between the notch and the runner, and device for retaining the umbrella when closed in that position, substantially as and for the purposes specified.

4. In an umbrella, the bows pivotally connected to the runner, and the stretchers pivoted to the notch, the runner and notch being provided with recesses, and a spring compressed between said runner and notch and entering said recesses, and stop, substantially as and for the purposes specified.

5. In an umbrella, the notch located below

the runner and carrying the stretchers pivoted thereto, the bows being pivoted to the runner, and the spring being located between the notch and the runner and entering a recess in the runner, and stop T, substantially as and for the purposes specified.

6. The combination of the runner with bows pivotally attached thereto and located above the notch, with stretchers pivotally attached thereto, and a spiral spring surrounding the stick A, between the notch and the runner, and stop on the stick A above the runner, substantially as and for the purposes specified.

7. The runner with bows pivotally attached thereto and provided with recess, and the notch pivoted to the inner ends of the stretchers and provided with a recess, the runner being located above the notch, and a spring compressed between the runner and the notch and fitting into said recesses in said notch and runner, substantially as and for the purposes specified.

8. The runner located above the notch and provided with a recess, the bows of the umbrella being at their inner ends pivotally attached thereto, and a notch to which the stretchers are pivotally attached, a spring being compressed between the notch and the runner and entering said recess in the latter, substantially as and for the purposes specified.

9. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, substantially as and for the purposes specified.

10. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the

stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and stop, as T, substantially as and for the purposes specified.

11. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and stop T, and ring K, substantially as and for the purposes specified.

12. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and device for retaining the umbrella when closed in that position, and the stop T, substantially as and for the purposes specified.

13. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and device for retaining the umbrella when closed in that position, and the stop T, formed in one piece with the stick and lying above the runner, substantially as and for the purposes specified.

ED. C. KUHN.

Witnesses:

JNO. M. VERDIN,
F. VERDIN.