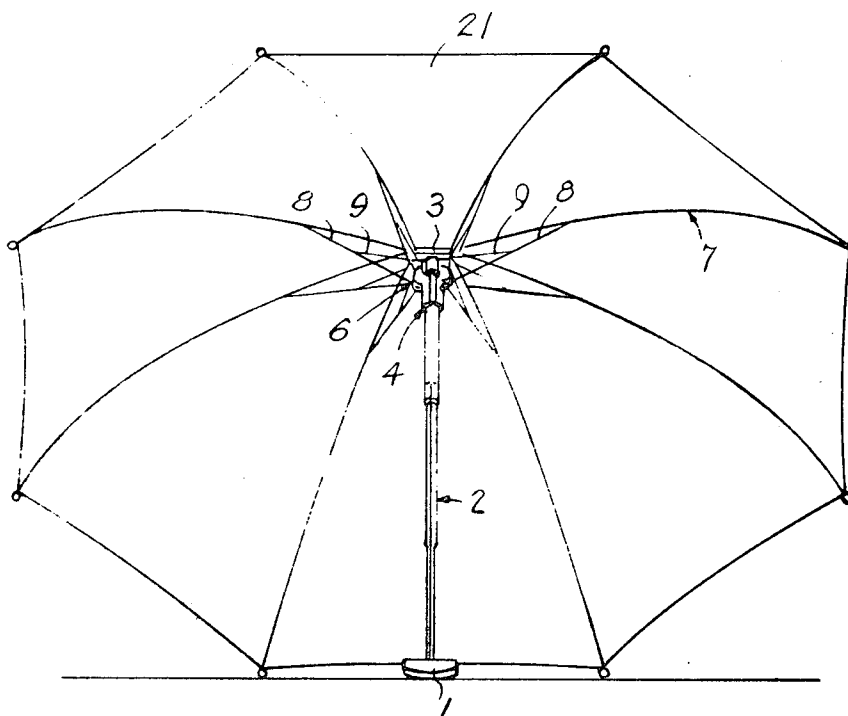


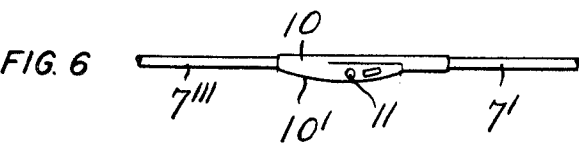
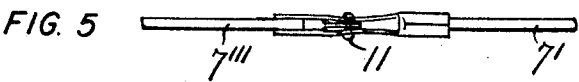
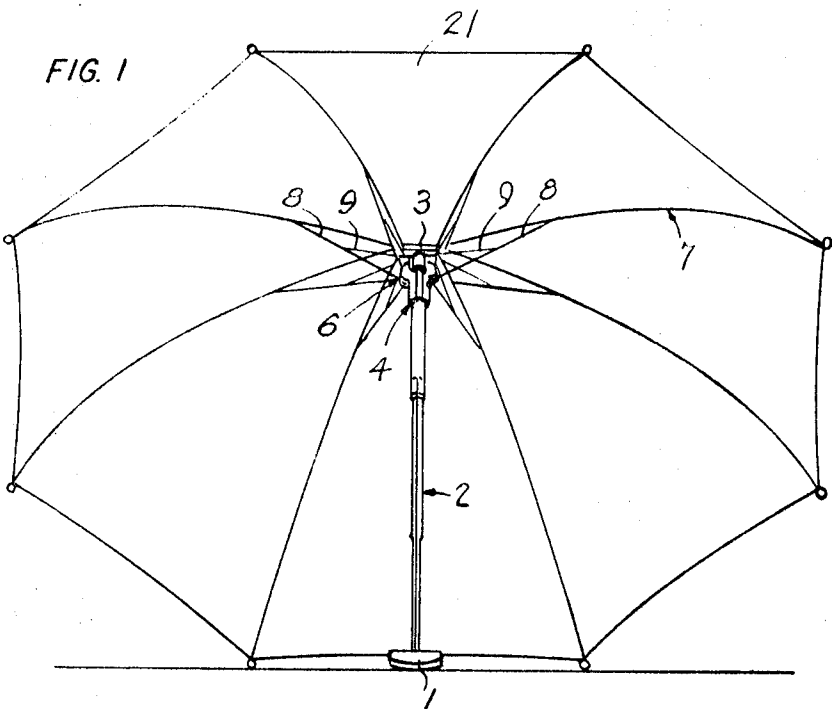
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 [21] Appl. No. **875,159**
 [22] Filed **Nov. 10, 1969**
 [45] Patented **June 22, 1971**
 [73] Assignee **Telesco Brophey Limited**
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 [32] Priority **Nov. 9, 1968**
 [33] **Germany**
 [31] **P 18 08 002.9**

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Primary Examiner—Kenneth Downey
Attorney—Alan Swabey

[54] **LONGITUDINALLY SHORTENABLE UMBRELLA**
3 Claims, 11 Drawing Figs.
 [52] U.S. Cl. **135/25 R**
 [51] Int. Cl. **A45b 19/08**
 [50] Field of Search **135/25, 26**

ABSTRACT: A trip lever associated with the auxiliary runner of the umbrella and adapted to engage an opening in the umbrella stick momentarily retarding the advance of the auxiliary runner as the main runner is being pressed forward when opening the umbrella.





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FIG. 2

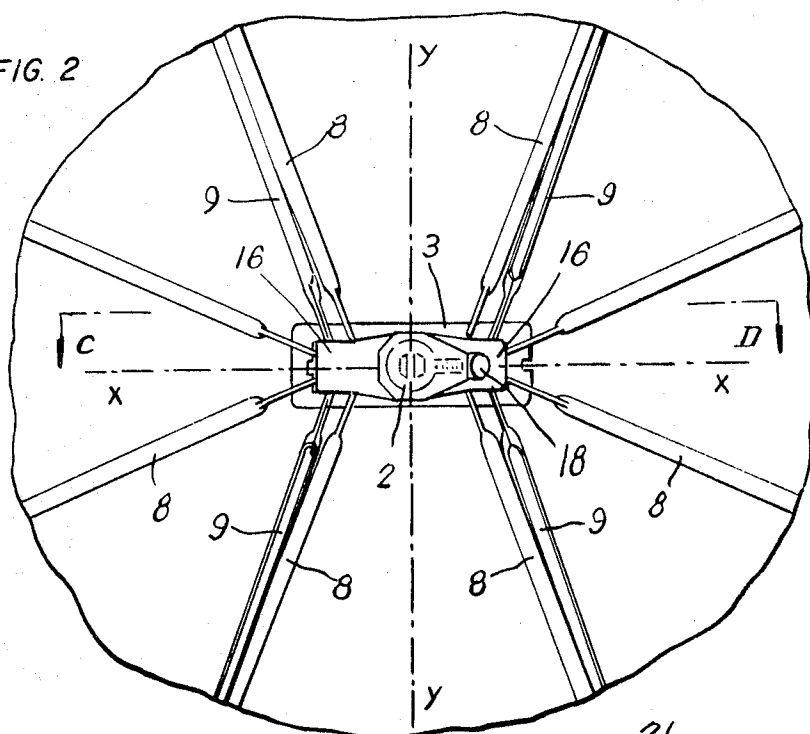


FIG. 3

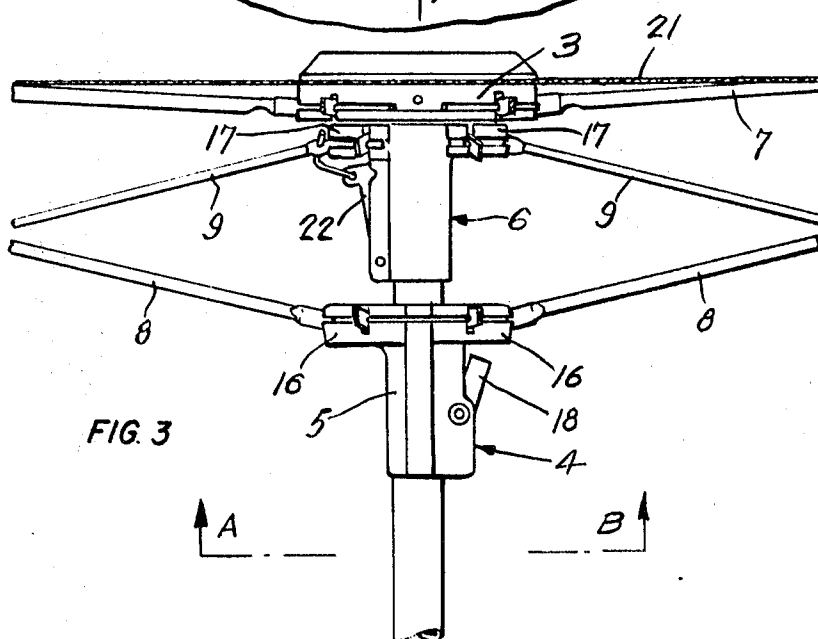
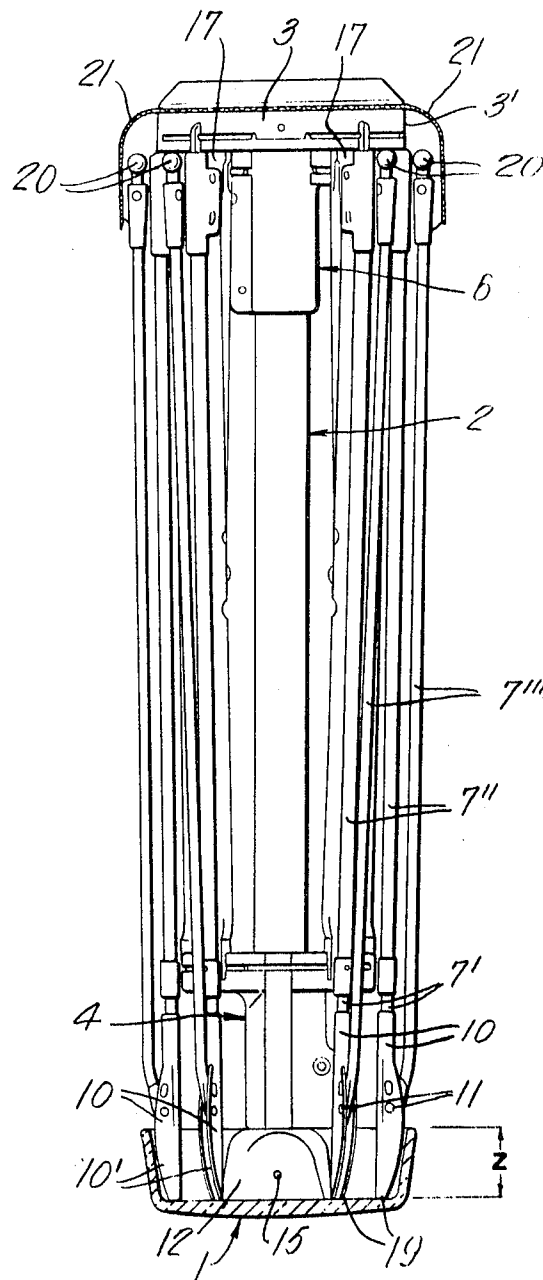


FIG. 4



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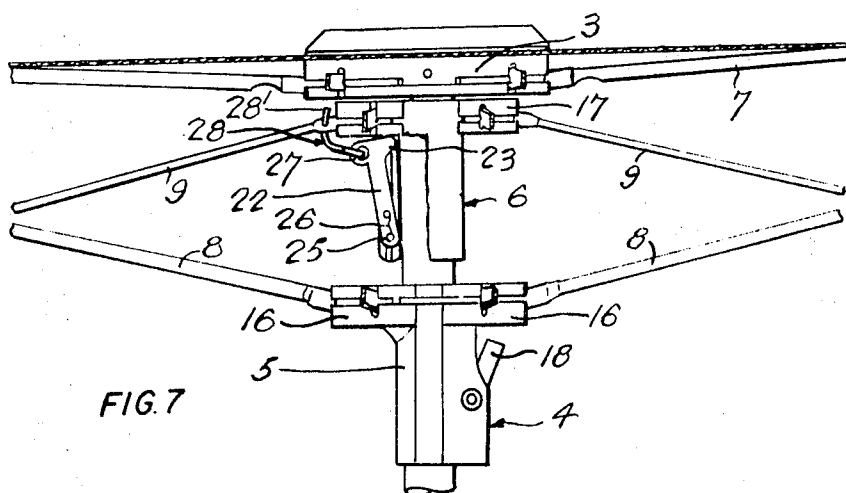


FIG. 7

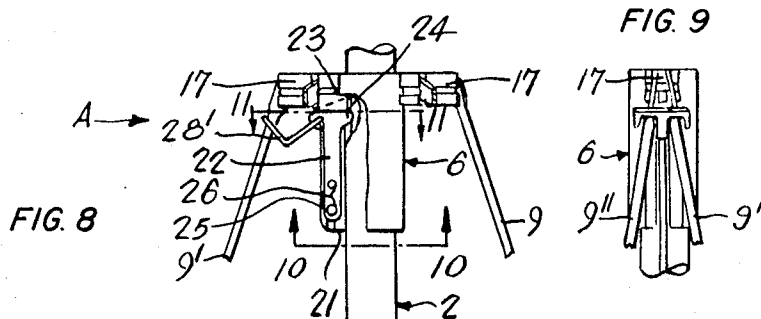


FIG. 8

FIG. 9

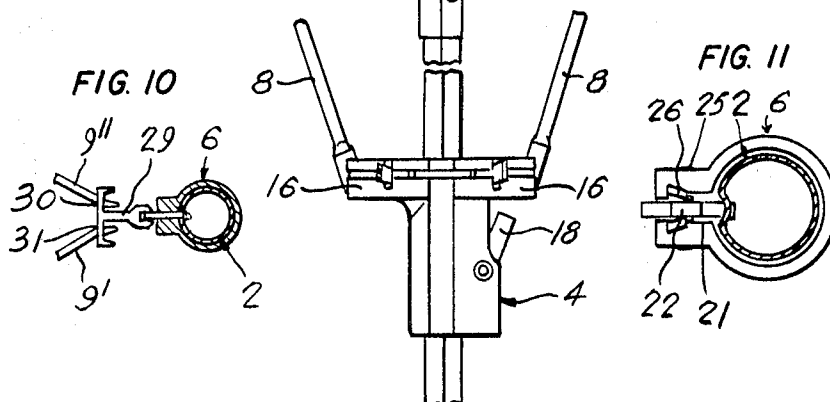


FIG. 10

FIG. 11

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LONGITUDINALLY SHORTENABLE UMBRELLA

BACKGROUND OF INVENTION

1. Field of Invention

The present invention relates to umbrellas, and particularly to an umbrella which can be shortened longitudinally and which is generally referred to as a telescopic umbrella.

2. Description of Prior Art

In the above-type of umbrella, particularly the telescopic umbrella, it often occurs in opening the umbrella that when pushing the main runner forward to open the umbrella, the dome ribs fail to pivot towards their almost horizontal position since they merely telescope on themselves in their parallel position in view of the axial pressure applied. In the past, some devices have been developed to enable the dome ribs to pivot outwardly as the main runner is being pressed forward, but all of these have met with problems either being too complicated and therefore costly, or too simple and not effective.

It is an aim of the present invention to provide a device for assisting the spreading of the dome ribs as the telescopic umbrella is being opened.

SUMMARY OF INVENTION

A construction in accordance with the invention includes an umbrella comprising a telescopic stick, a crown at one end and a handle at the other end of the stick, dome ribs pivotally mounted to the crown, a first runner slidably mounted on the stick, with the second runner slidably mounted on the stick between the first runner and the crown. Stretcher members are pivotally connected to the first runner and the dome ribs, while strut members are pivotally connected to the median portion of the stretcher members and to the second runner. Means associated with the auxiliary runner and the stick momentarily retard the advance of the auxiliary runner relative to the advance of the first runner as the umbrella is being opened.

In a more specific embodiment of the invention, the means provided with the auxiliary runner include a lever pivotally mounted to the auxiliary runner, having a spring urging it towards the stick. An opening is strategically located on the stick, coinciding with the position at which it is preferable to pivot the dome ribs; trip means are included on the lever to trip in the opening as the runner is being advanced, whereby it is caught in the opening so as to retard the advance of the auxiliary runner and release means are provided for releasing the auxiliary runner to advance forward towards a position adjacent the crown as the dome ribs are being spread open.

BRIEF DESCRIPTION OF THE DRAWINGS

Having thus generally defined the nature of the invention, particular reference will be made to the accompanying drawings, showing by way of illustration, a preferred embodiment thereof, and in which:

FIG. 1 is a perspective view looking from underneath an open umbrella;

FIG. 2 is a fragmentary enlarged view taken in a horizontal cross section across the stick and looking upwardly at the crown and the dome ribs;

FIG. 3 is an enlarged elevational view of a detail of the umbrella shown in an open position;

FIG. 4 is an elevational view of the umbrella shown in a completely shortened and collapsed situation;

FIG. 5 is a plan view of a detail of the structure of the umbrella;

FIG. 6 is a side elevation of the detail shown in FIG. 5;

FIG. 7 is an elevational view similar to FIG. 3 shown partly in cross section;

FIG. 8 is a fragmentary view showing the elements in FIG. 7 in a different position;

FIG. 9 is a side elevation in the direction of arrow A of FIG. 8;

FIG. 10 is a horizontal cross section taken along line 10-10 in FIG. 8; and

FIG. 11 is a horizontal cross section taken along line 11-11 of FIG. 8.

DESCRIPTION OF PREFERRED EMBODIMENT

The umbrella shown is of the type having a flat cross section and comprises a handle 1, telescoping umbrella stick 2, crown 3, main runner 4 with a sleeve 5, auxiliary runner 6, dome ribs 7, stretcher members 8 and auxiliary struts 9.

Dome ribs 7 in the illustrated embodiment are in three sections. The two sections 7' and 7'' are telescopic in relation to each other, while section 7''' folds in relation to parts 7' and 7''.

Dome-rib section 7' has a geats 10 at its end, the said geats being of U-shaped cross section at least at its free end. Hinge pin 11 extends between the legs of the U. Dome-rib end section 7''' is pivotally connected to hinge pin 11.

Crown 3 is of rectangular cross section, one rectangular edge being longer than the other. The main and auxiliary runners each have laterally directed projections 16 and 17 to which stretchers 8 and auxiliary struts 9 are hinged respectively. The hinging is such that no strut or dome rib lies in the direction of major longitudinal axis x-x nor in the direction of minor axis y-y.

Lever 18 is pivotally mounted in sleeve 5 in main runner 4 below a lateral projection 16.

Ends 20 of dome-rib end sections 7''' terminate below crown 3, preferably in the region of the plane in which auxiliary runner 6 is located when the umbrella is in the folded condition. These ends 20 may then be spaced satisfactorily. In a similar manner, covering material 21 may be folded in the most satisfactory manner. In this connection, the cross-sectional dimensions of crown 3 are, with advantage, greater than those of lateral projections 16 and 17 of main slide 4 and auxiliary slide 6, so that ends 20 assume a satisfactory and even protected position for insertion into the case, behind projecting peripheral edge 3' of crown 3.

A pair of parallel projecting walls define a channel 21 on the auxiliary runner 6 below a lateral projection 17. A pivoting lever 22 is mounted on a pin 25 in the channel 21. The lever 22 has a cam projection 23.

A torsional spring 26 mounted on the said pin 25 urges the cam projection 23 of lever 22 towards umbrella stick 2.

When the umbrella is being opened, the cam projection 23 is forced by means of spring 26, to trip into an opening 24 in the wall of umbrella stick 2, thereby retarding momentarily the advance of auxiliary runner 6 in order to facilitate the opening of the dome ribs of the umbrella.

At the same end of the lever 22, but opposite cam projection 23, there is defined an aperture 27, to which is hinged a trailing member 28. Trailing member 28 defines a right angle with one leg thereof being T-shaped. Web 29 of the T, as seen in FIG. 10, passes through the space between two adjacent auxiliary struts 9' and 9'' which lie relatively close together by reason of the usual difference in the angular distribution of the auxiliary struts in a flat-type umbrella. Connected to web 29 of the trailing member 28 are the laterally directed arms 30 and 31 of the T. These arms 30 and 31 are in the form of hooks and engage the two adjacent auxiliary struts 9' and 9'' loosely.

As a result of this loose engagement, trailing member 28 causes the lever 22 and the cam projection 23 to be released from the opening 24 in the stick 2 thereby allowing the auxiliary runner 6 to proceed towards a position adjacent the crown 3 as shown in FIG. 7. As can be seen from the drawings, that is, FIGS. 7 and 8, the retardation of the runner 6, while pressing the runner 4 forward, will cause the auxiliary struts 9 and stretcher members 8 to spread outwardly as if the quadrilateral figure defined by opposite struts 9 and stretcher members 8 was being collapsed vertically. Once the struts have reached a certain angle, they drag the trailing member 28 so as to release the cam projection 23 from opening 24.

I claim:

1. An umbrella comprising a telescopic stick, a crown at one end and a handle at the other end of the stick, dome ribs pivotally mounted to the crown, a first runner slidably mounted on the stick, a second runner slidably mounted on the stick between the first runner and said crown, stretcher members pivotally connected to said first runner and said dome ribs, strut members pivotally connected to said second runner and said stretcher members, means associated with said second runner and said stick to momentarily retard the advance of said second runner relative to the advance of said first runner as the umbrella is being opened, the means for retarding the advance of the second runner including a lateral opening intermediate of the umbrella stick, a spring-loaded trip lever pivotally mounted at its lower end in the second runner and having an upper lateral cam projection engageable in the opening as the second runner is pushed over the intermediate portion of the stick so that the second runner will be momentarily delayed in its movement traversing the stick, release means operatively connected between at least one of said strut members and said spring-loaded trip lever for disen-

gaging the spring-loaded trip lever from said opening in the stick, said spring-loaded trip lever including spring means normally urging said upper cam projection towards said stick and opening, the release means including an angular link member pivotally connected at one end to a portion of said trip lever above its pivot on said second runner and in spaced relation from said cam projection, said link member being connected at another end to at least one strut member for pivoting the trip lever from the lateral opening as the strut pivots beyond a predetermined angle with respect to said second member.

2. The structure as claimed in claim 1 wherein said angular link member is T-shaped in plan and includes a web portion pivotally connected to said trip lever and a pair of lateral arms respectively engaging different angularly related strut members pivotally connected to said second runner.

3. The structure as claimed in claim 2 in which a torsion spring is mounted on said spring-loaded trip lever adjacent its pivotal connection to said second runner.

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