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(71) Applicant: **Kurimoto, Masao**
978 Koizumi-chou
Yamatokouriyama Nara(JP)

(72) Inventor: **Kurimoto, Masao**
978 Koizumi-chou
Yamatokouriyama Nara(JP)

(74) Representative: **Smith, Philip Antony et al**
REDDIE & GROSE 16 Theobalds Road
London WC1X 8PL(GB)

(54) Sectional umbrella.

(57) Stem B consists of sections such as 14 and 19 which may be telescopic or screw together. Top piece A screws onto the top of the stem B before the umbrella is opened. Collar 3 is then lowered by sliding on the stem top-piece 1 so that support ribs 5, pivotally-attached to the collar 3, and main ribs 4, pivotally-attached to the flange 2 on the top-piece 1, swing outwards. Each main rib 4 is connected to a support rib 5 by a hinge 6, to which is also connected an extension rib 7. The extension ribs 7 are swung over to align with the main ribs 4 before the collar 3 is lowered to engage the latch on the stem B, causing the covering fabric 8 to be stretched and the main and extension ribs to adopt a bowed formation.

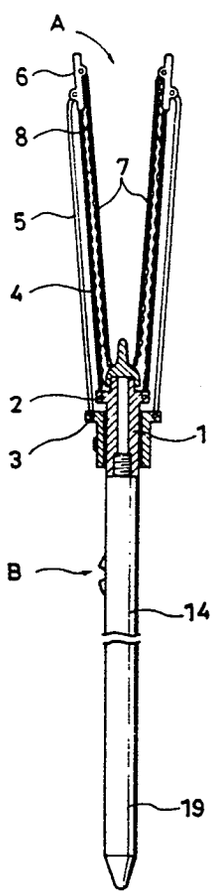

Fig. 3

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Sectional Umbrella

FIELD OF THE INVENTION

The present invention relates to a sectional umbrella which can be folded and disassembled to be convenient to carry or store.

BACKGROUND OF THE INVENTION

In Japanese Utility Model Laid Open No. 60-180522, there is proposed a sectional umbrella comprising a rib part, a stem and a cloth which can be disassembled so as to be easily carried or stored.

In addition, there are proposed various two-stage or three-stage telescopic umbrellas.

According to a conventional telescopic umbrella or sectional umbrella, since a length of a supporting rib is 1/3 - 1/4 of a radius of an umbrella cloth in a state where the umbrella is assembled and opened, it is rather short to bear strong wind pressure. In addition, its assembling operation is complicated.

SUMMARY OF THE INVENTION

The present invention was made to solve the above problem and it is an object of the present invention to provide a sectional umbrella with high practicability.

Other objects and advantages of the present invention will become apparent from the detailed description given hereinafter; it should be understood, however, that the detailed description and specific embodiment are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

A sectional umbrella in accordance with the present invention comprises an umbrella part (a) comprising a stem-top piece integrally formed at a lower part of an upper boss connected to bottoms of n main ribs, a lower boss connected to bottoms of n supporting ribs and slidably fitted in the stem-top piece, n vertical through trenches formed in the upper boss and the lower boss so as to substantially pivot the main ribs and the supporting ribs over an angle of 180°, n hinge members individually connecting tips of the main ribs to tips of the supporting ribs, n extension ribs having bottoms connected to the hinge members by pins on the side opposite to the side on which the supporting ribs are connected to the main ribs, an extension rib supporting part integrally formed thereon to prevent the extension ribs from pivoting lower than the extension direction of the main ribs, and an umbrella cloth provided on a surface formed by n main ribs and the n extension ribs; and a stem part (b) detachably mounted on a lower part of the stem-top piece, comprising a latch for preventing the lower boss from returning to the upper part and having a transverse sectional configuration at least between the latch and the upper end thereof such that the lower boss may be slidably fitted thereto and construction such that the stem is divided into a plurality numbers or it can be telescopic by a plurality of stages.

Since there are n vertical through trenches for substantially pivoting the main ribs and the supporting ribs over 180° formed in the upper boss and the lower boss, the umbrella part pivots upper than the stem-top piece in its folded state as shown in Fig. 1 or Fig. 3(a) as compared with a case where the umbrella part is positioned lower than the stem-top piece in its used state as shown in Fig. 4. In addition, n extension ribs are folded on the side opposite to the side on which it is bent in a used state. Furthermore, one stem can be disassembled into a plurality of numbers as shown in Fig. 1. As a result, the umbrella part and the plurality of stem constituents have the same length as the main rib and the supporting rib from the stem-top piece to the hinge member when they are folded and disassembled, which length is about 1/4 of a diameter of the opened umbrella cloth.

In addition, when it is opened, the supporting rib is provided over about 1/2 of the radius of the umbrella cloth, so that it is nearer to an outer periphery of the umbrella cloth as compared with 1/3 - 1/4 in the prior art, with the result that resistance to external force such as wind pressure can be increased.

Furthermore, it is very easy to handle because it can be prepared for use only by connecting the plurality of disassembled stem constituents to the stem-top piece of the umbrella part shown in Fig. 1 or expanding to form one stem and then drawing the lower boss downward until the lower boss is caught by the latch.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded view showing a disassembled and folded state of a sectional umbrella in accordance with an embodiment of the present invention;

Fig. 2 is an enlarged view showing 11 part in

Fig. 1;

Fig. 3 is a view showing a method for assembling the sectional umbrella; and

Fig. 4 is a view showing the sectional umbrella of the present invention when it is used.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Fig. 1 is an exploded view showing a sectional umbrella in accordance with an embodiment of the present invention.

An umbrella part A comprises a boss member in which an upper boss 2 is integrally formed on an upper part of a stem-top piece 1, a lower boss 3 slidably fitted in the stem-top piece 1, n main ribs 4 having their bottoms radially connected to the upper boss 2, n supporting ribs 5 having their bottoms radially connected to the lower boss 3, n hinge members 6 individually connecting tips of the main ribs 4 to tips of the supporting ribs 5, n extension ribs having bottoms connected to the hinge members by pins such that they can be freely folded, and an umbrella cloth 8 covering an upper surface formed by the n main ribs and the n extension ribs.

N vertical through trenches are formed in the upper boss 2 and the lower boss 3 to pivot the main ribs 4 and the supporting ribs 5 over an angle of 180° or slightly less than that. In addition, as shown in Fig. 2, the hinge member 6 has a pin 9 connecting the main rib 4 to the supporting rib 5 and a pin 10 connecting the extension rib 7 at its upper end and comprises an extension rib supporting part 11 integrally formed at its end, which prevents the extension rib from pivoting lower than the extension direction of the main rib when the umbrella is used.

A stem B comprises a first stem 14 having a male screw 12 connected to a female screw at a lower part of the stem-top piece 1 and a latch 13 preventing the lower boss from returning to an upper part, a second stem 15 connected to a lower end of the first stem 14 by a screw, a third stem 17 having a length adjuster 16 which fixes the second stem at any position and a fourth stem 19 connected to a lower end of the third stem 17 by a screw and having a shoe 18 at its lower end.

When a sectional umbrella in accordance with the above embodiment of the present invention is assembled, first, the lower part of the stem-top piece 1, the first, second, third and fourth stems 14, 15, 17 and 19 are connected as shown in Fig. 3 to be one stem while the umbrella part A is still folded. Then, the lower boss 3 is drawn downward and the extension rib 7 is opened. Then, the lower boss 3 is further drawn downward against tension of the umbrella cloth 8 until it is caught by the latch 13 and the main rib 4 and the extension rib 7 are roundly bent as shown in Fig. 4.

According to another embodiment of the present invention, a stem part B can be telescopic in which a second stem is housed in a first stem and its lower stem is housed in it and so forth. Although the shoe 18 is used in the above embodiment, a grip can be used instead of it.

According to the present invention, an umbrella can be easily assembled to be used only by connecting the stem-top piece of the umbrella part in a folded state to the stem part and drawing the lower boss until it is caught by a latch and it can be disassembled by a reversed order of that procedure, whereby assembling and disassembling operation can be easily performed. In addition, the number of constituents is reduced because a spring and the like can be dispensed with, with the result its constitution is simple and solid and its production costs can be reduced. Furthermore, since the main rib, the supporting rib and the extension rib have almost the same size, the hinge member is arranged at a middle position of a radius of the umbrella cloth or nearer to an outer periphery than that, so that resistance to external force such as wind pressure can be increased.

Although the present invention has been described and illustrated in detail, it is clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation, the spirit and scope of the present invention being limited only by the terms of the appended claims.

Claims

1. A sectional umbrella comprising:

an umbrella part (a|) comprising:

a stem-top piece integrally formed at a lower part of an upper boss connected to bottoms of n main ribs;

a lower boss connected to bottoms of n supportinbg ribs and slidably fitted in the stem-top piece,

n vertical through trenches formed in the upper boss and the lower boss so as to substantially pivot the main ribs and the supporting ribs over an angle of 180°;

n hinge members individually connecting tips of the main ribs to tips of the supporting ribs;

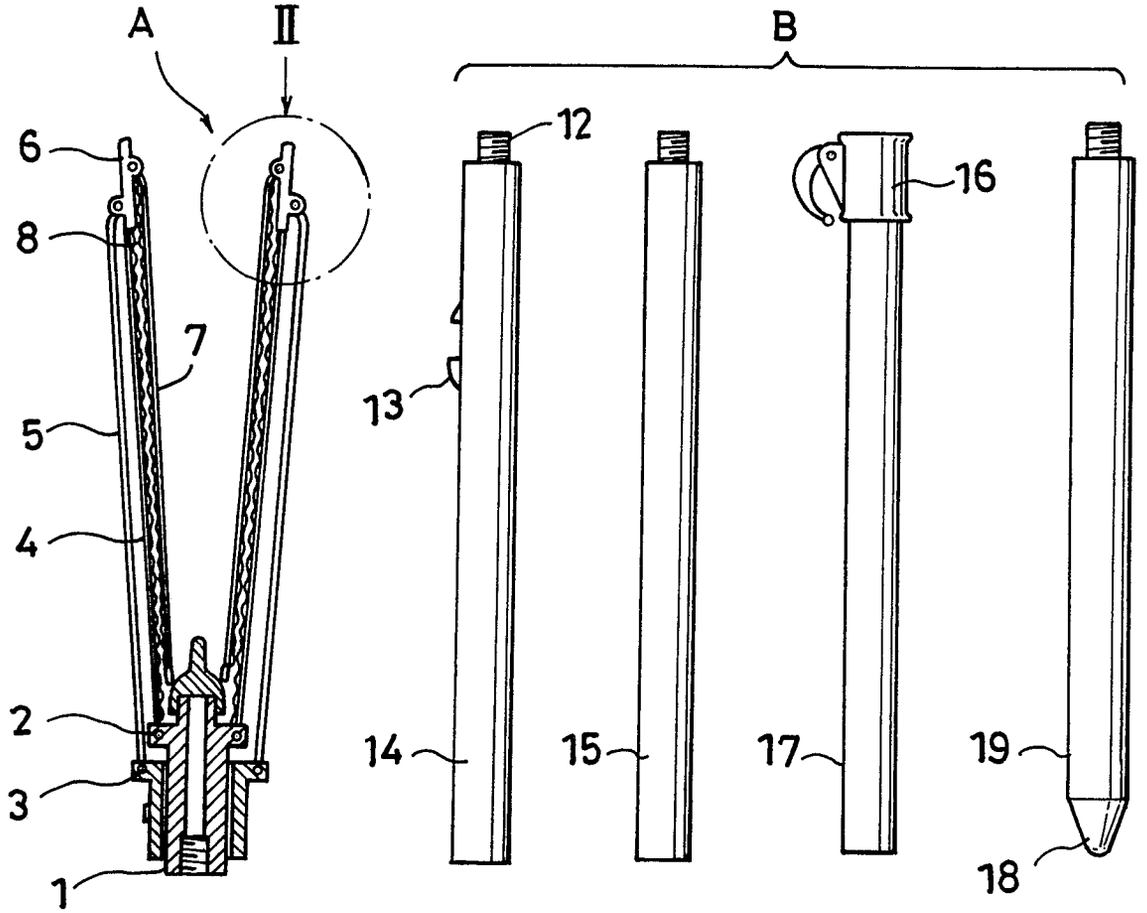
n extension ribs having bottoms connected to the hinge members by pins on the side opposite to the side on which the supporting ribs are connected to the main ribs;

an extension rib supporting part integrally formed thereon to prevent the extension ribs from pivoting lower than the extension direction of the main ribs; and

an umbrella cloth provided on a surface formed by n main ribs and the n extension ribs; and
a stem part (b) detachably mounted on a lower part of the stem-top piece comprising a latch for preventing the lower boss from returning to the upper part and having a transverse sectional configuration between the latch and the upper end thereof such that the lower boss may be slidably fitted thereto and construction such that the stem is divided into a plurality of numbers or it can be telescopic by a plurality of stages.

2. A sectional umbrella comprising an umbrella part and a separable stem part in which the umbrella part comprises a stem top-piece to which the inner ends of main ribs are pivotally attached, a collar slidable on the top-piece, support ribs pivotally attached to the collar and hinged to respective main ribs, and extension ribs coupled to the hinges connecting the main and support ribs, the arrangement being such that in the closed condition with the collar surrounding the top-piece the main ribs extend beyond to top of the top-piece with the support ribs lying close to them on the outside and the extension ribs folded over to lie close to the main ribs on the inside, and in which the stem part has a latch to hold the collar in a lowered position when the umbrella is open.

Fig. 1



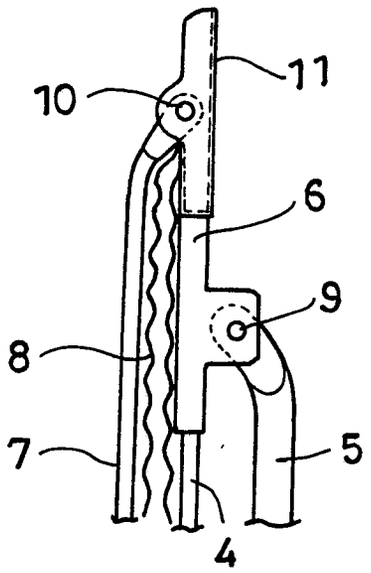


Fig. 2

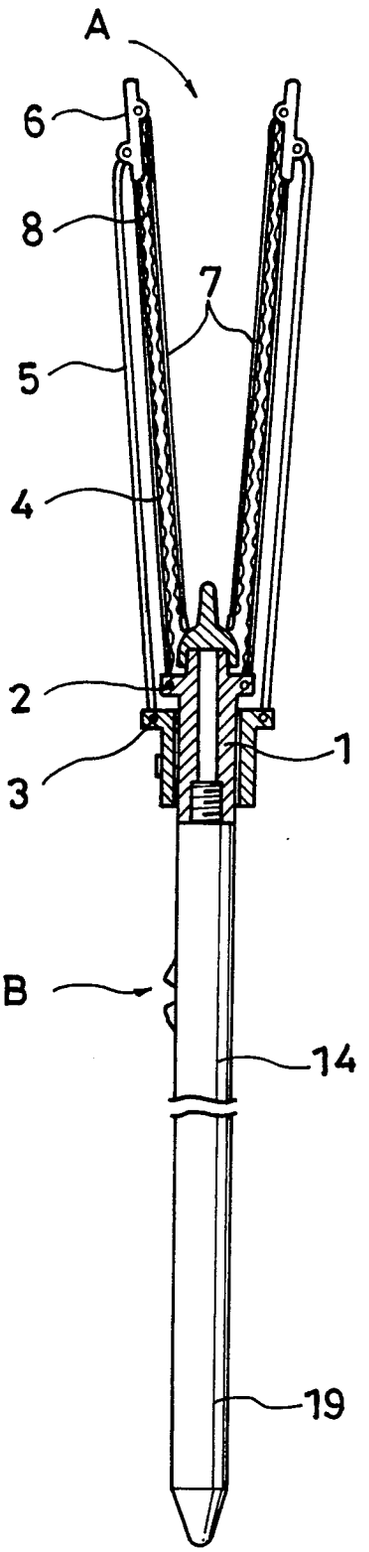


Fig. 3

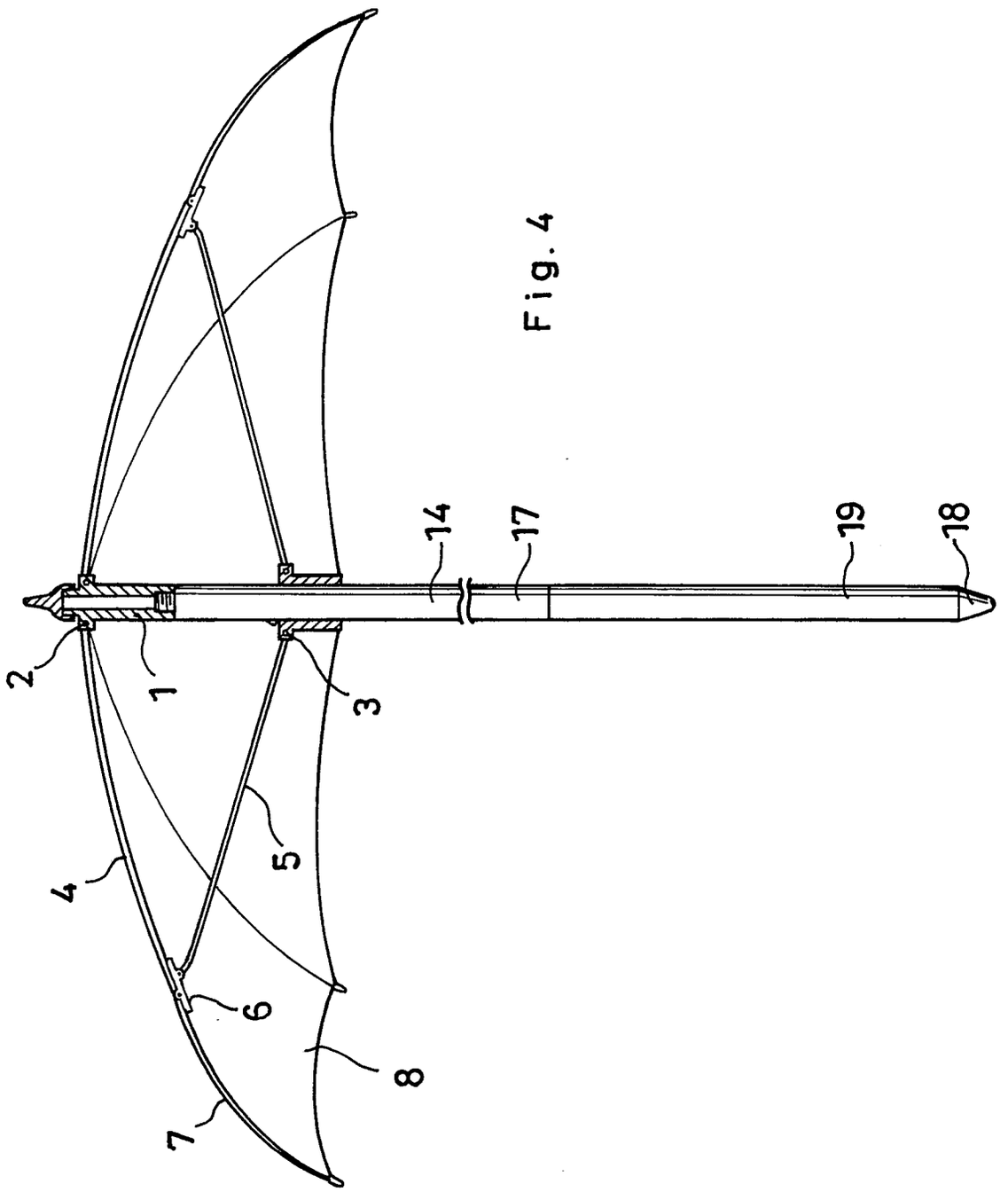


Fig. 4