

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) IMPROVEMENTS IN OR RELATING TO UMBRELLAS

(71) We, BREMSHEY & Co., a German Kommanditgesellschaft, of 5—7 Ahrstrasse, Solingen-Ohligs, Germany, respectively, all of German nationality, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to a frame for a shortenable umbrella of the so called "flat" type having a substantially rectangular cross-sectional shape transverse to the stick axis when closed.

15 According to the present invention, such a frame comprises a telescopic stick having at its lower end a handle of elongate cross section transverse to the stick axis with two wide side walls and two narrow side walls around a socket which receives a main slider in the shortened state, the main slider having a pair of wings diametrically opposed across the stick axis and carrying rib-supporting struts, the wide side walls of the handle projecting upwards from a handle base beyond the upper edges of the narrow side walls and tapering in the upward direction so as to be generally trapezoidal in shape, whereby, in the shortened state the main slider wings lie between the projecting parts of the wide side walls of the handle.

30 Preferably, the wide side walls completely conceal the main slider wings in the collapsed state as seen in a direction substantially perpendicular to the wide side walls.

35 The edges of the wide side walls extending generally in the direction of the stick axis, may be continuously curved. Also, the inner surfaces of the projecting parts of the wide side walls advantageously curve upwardly away from the handle base and outwards away from one another.

40 These features provide an umbrella which is extremely advantageous for handling. The wide side walls of the handle form the guide surfaces for an ordering of the rib ends. The

main slider is secured against rotation in its position in the handle by the wide side walls extending as far as the position which the main slider top assumes when the umbrella is closed and shortened, the wide side walls overlapping the wings of the slider. The tapering course followed by the edges of the wide side walls encourages the introduction of the umbrella into a case formed with an end-face insertion opening. The entry of the main slider into the handle is facilitated by the chamfering or arching of the inner surfaces of the wide side walls, more particularly in the zone of the free end faces thereof. Similarly, the wide side walls may engage gently over an umbrella covering wrapped around the bundle of ribs. By a suitably resilient construction of these wide side walls, the handle can also act as a clamp for retaining a covering folded around the umbrella frame. A chamfering of the narrow side walls guides the rib ends to force them into the position they occupy when the umbrella is shortened. Despite the flat shape which must be achieved in umbrellas of the above type, the construction of the wide side walls produces a handy, large handle. The walls defining the socket for the main slider, which can be produced during injection moulding thereof, reinforces the handle.

Some examples of umbrellas incorporating frames in accordance with the invention are illustrated on the accompanying drawings, in which:—

Figure 1 is a partial perspective view of an umbrella in a case;

Figure 2 is an elevation of the handle of the umbrella of Figure 1;

Figure 3 is a longitudinal section of the handle of the umbrella of Figure 1;

Figure 4 is a section taken on the line IV—IV in Figure 3, showing only the handle and stick;

Figure 5 is a section taken on the line V—V in Figure 3, showing only the handle and stick;

Figure 6 is a section taken on the line VI—VI in Figure 3;

Figure 7 is a section, corresponding to Figure 5, through the handle of a second umbrella;

5 Figure 8 is a section, corresponding to Figure 5, through the handle of a further umbrella;

Figure 9 is a section, corresponding to Figure 5, through the handle of yet a further umbrella; and,

10 Figure 10 is a perspective view of a raised umbrella.

The umbrella shown in Figures 1 to 6 and 10 comprises a stick 1 formed of circular telescopic tubes 2, 3, 4 which can be secured when extended by catches 5. The tube 4 bears a handle 6 at its lower end.

15 Running on the stick 1 is a main slider 7 having diametrically opposed wings 8, 9 to which supporting struts 10 are articulated in accordance with our copending application No. 54305/69 (Serial No. 1,199,834). The supporting struts 10 are connected via links 11 to telescopic umbrella ribs 12, articulated to a crown at the upper end of the stick. Also running on the stick 1 is an auxiliary slider 13 which bears auxiliary struts 16 articulated to diametrically opposed wings 14, 15.

20 Due partly to the articulation of the umbrella ribs, supporting struts and auxiliary struts to diametrically opposed wings, but primarily due to articulation of the ribs to diametrically opposed wings of the crown, the collapsible umbrella has a rectangular cross-sectional shape when collapsed and folded together. The handle 6 also has a section corresponding substantially to this cross-sectional shape. Opposed wide side walls 17, 18 of the handle 6 extend upwards beyond edges 19 of opposed narrow side walls 22, 23, outwardly limiting receiving compartments 20, 21 for the rib ends 12¹ (See Figure 3). The inner boundary is formed by end faces 8¹, 9¹ of the slider wings 8, 9. Since the wide side walls 17, 18 extend beyond the edges 19 of the narrow side walls 22, 23, the ribs 12 can be pregrouped.

25 When the umbrella is closed and shortened the wide lateral walls 17, 18 extend as far as the position of the top of the slider 7 which is thus secured against rotation. The wide side walls 17, 18 of the handle 6 overlap the wings 8, 9 of the slider 7.

30 As can be seen in Figures 2 and 3, edges 24 of the wide side walls 17, 18 and also a portion of the outer surface of the narrow lateral walls 22, 23, follow a tapering arcuate course away from the handle bottom, enabling the handle to be introduced easily into a case 26 formed with an end face insertion opening 25, in accordance with our copending application No. 9843/69 (Serial No. 1,219,377).

35 Figures 4 and 5 particularly clearly show how the inner surface of the wide side walls 17, 18 of the handle are chamfered, starting from the free, arcuately extending end face 27. Ad-

joining the outer chamfered portion *a* is a chamfered portion *b* extending at a more acute angle to the stick axis than the portion *a*. These chamfered portions form funnel-like guide surface to order the umbrella ribs 12.

70 The modification shown in Figure 7 has only chamfered portions *a*, but these are of larger area. The wide side walls 18¹, 17¹ extend parallel with one another.

75 In the modification shown in Figure 8, the wide side walls 17¹¹, 18¹¹ converge in the direction of the handle bottom end and in this case again a chamfered portion *b* adjoins a chamfered portion *a*.

80 In the handle shown in Figure 9, the wide side walls 17¹¹¹, 18¹¹¹ extend parallel with one another and their end face portions 28, 29 having an unchanging wall thickness, are bent outwards to form arcuate surfaces *a*¹. The inside of the end face edge 19 of the narrow side surfaces is also chamfered to facilitate the introduction of the rib ends 12¹; these chamfered portions having the reference *c*.

85 The handle 6 can be formed between the rib-receiving compartments 20, 21 with a socket 30, into which a guide bush 7¹ of the slider 7 enters. The guide bush 7¹ bears a release catch 31 in the longitudinal channel. A moulded-on pin 33 extends from the bottom 32 of the handle within the socket 30; the end tube 4 of the stick 1 is slipped over the pin 33 and secured by suitable means.

90 The umbrella is collapsed from the Figure 10 configuration in the usual way, that is by releasing the main slider catch 31 and drawing the main slider 7 along the stick towards the handle. As a result the ribs 12 and struts 10 and 16 fold down parallel to the stick 1. The umbrella is then shortened by pressing the handle 6 and rib tips 12¹ towards the crown whereupon the stick 1 and ribs 12 shorten telescopically. The covering is wrapped around the ribs and stick and the umbrella is ready for insertion into its case 26.

95 WHAT WE CLAIM IS:—

1. A frame for a shortenable flat umbrella having a substantially rectangular cross sectional shape transverse to the stick axis when closed, the frame comprising a telescopic stick having at its lower end a handle of elongate cross section transverse to the stick axis with two wide side walls and two narrow side walls around a socket which receives a main slider in the shortened state, the main slider having a pair of wings diametrically opposed across the stick axis and carrying rib-supporting struts, the wide side walls of the handle projecting upwards from a handle base beyond the upper edges of the narrow side walls and tapering in the upward direction so as to be generally trapezoidal in shape, whereby, in the shortened state the main slider wings lie between the projecting parts of the wide side walls of the handle.

2. A frame according to Claim 1, in which

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Figure 7 is a section, corresponding to Figure 5, through the handle of a second umbrella;

5 Figure 8 is a section, corresponding to Figure 5, through the handle of a further umbrella;

Figure 9 is a section, corresponding to Figure 5, through the handle of yet a further umbrella; and,

10 Figure 10 is a perspective view of a raised umbrella.

The umbrella shown in Figures 1 to 6 and 10 comprises a stick 1 formed of circular telescopic tubes 2, 3, 4 which can be secured when extended by catches 5. The tube 4 bears a handle 6 at its lower end.

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2. A frame according to Claim 1, in which

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the wide side walls completely conceal the main slider wings in the shortented state as seen in a direction substantially perpendicular to the wide side walls.

5 3. A frame according to Claim 11 or Claim 2, in which the edges of the wide side walls, extending generally in the direction of the stick axis, are continuously curved.

10 4. A frame according to any one of the preceding claims, in which the inner surfaces of the projecting parts of the wide side walls curve upwardly away from the handle base and outwards away from one another.

5. A frame according to Claim 1, substantially as described with reference to any one of the modifications illustrated in the accompanying drawings. 15

6. A flat umbrella incorporating a frame in accordance with any one of the preceding claims. 20

For the Applicants:
GILL, JENNINGS & EVERY.
Chartered Patent Agents.
51/52 Chancery Lane,
London, WC2A 1HN.

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