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(54) IMPROVEMENTS IN OR RELATING TO UMBRELLA HANDLES

(71) We, BREMSHEY & Co., a German Commanditgesellschaft of 5—7 Ahrstrasse Solingen-Ohligs, Germany, 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:—

This invention relates to a handle for a shortenable umbrella, of the so called "flat" type having a substantially rectangular cross-sectional shape transverse to the stick axis when closed, the handle having a corresponding substantially rectangular cross-section transverse to the stick axis with two opposed pockets which receive the end parts of the umbrella ribs when the umbrella is closed.

In previous handles of this kind the umbrella stick has usually to be telescoped axialy whenever the umbrella is closed to fix the ribs, and care must be taken that all the ribs are disposed inside the pockets. This requires careful handling of the umbrella, and in a busy street this cannot always be done. If such handles have rib receiving pockets with openings in the side or end walls of the pockets, it is true that the umbrella stick need not be telescoped or extended to locate or release the ribs, but after the closure of the umbrella the ribs have to be retained in the pockets by tightly bunching them around the stick by a device, for instance a rubber band. This is a disadvantage, since the manipulation of the rubber band or other device necessitates an extra manual operation when the umbrella is opened or closed.

According to the present invention, a handle for a flat shortenable umbrella having a substatially rectangular cross-section transverse to the stick axis when closed comprises a body portion for fixing to the lower end of an umbrella stick and two wings project laterally in opposite directions and give the handle a substantially rectangular cross-section plane transverse to the axis of the stick to which the handle is to be fixed, each wing having a bottom wall, two opposed side walls, and an end wall defining with the body portion an upwardly open pocket, and at least the end walls being displaceable against spring action downwards relative to the body portion of the handle so that, when the handle forms part of an umbrella frame, rib and parts of the frame, when the frame is closed, can be swung over the end walls into or out of the pockets. (The terms "upwards" and "downwards" as used herein refer to the orientation of the handle when forming part of an open upright umbrella).

The invention also includes a flat umbrella and a flat umbrella frame having a stick and a handle as described, the body portion of the handle being fixed to the lower end of the stick.

In one example, the end wall of each wing is pivoted along a lower edge to the bottom wall and can be swung downwards against the spring action. The pivot hinge spring action may be provided by a resilient film hinge integrally connecting the end and bottom wall of each wing.

In another example, the side, end and bottom walls of each pocket are rigid with one another and are pivoted along an inner edge of the bottom wall to the body portion so that these walls can swing downwards against the spring action.

Alternatively, the end wall of each wing may comprise a springy strip which is mounted on the bottom wall of that wing and is flexible against its own resilience downwards relatively to the bottom wall.

In each case, the umbrella ribs disposed in the pockets when the umbrella is closed and shortened are located there without the need for any surrounding rubber band. When the umbrella is opened, the force by which the ribs are pulled outwards may be directed against any overcome the spring action acting on the end walls so that the end walls are de-

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flected into a position in which the ribs can leave the pockets.

When the umbrella is closed and shortened, the spring action maintains the end walls in a position in which all the rib end parts can be held inside the pockets.

Preferably, the end wall is arranged to be displayed downwards by direct engagement with the rib end parts of an umbrella frame both as the ribs are swung into or out of the pockets.

Some examples of flat umbrellas incorporating handles constructed in accordance with the invention are illustrated in the accompanying drawings, in which:—

Figure 1 is an axial section through the handle and part of the stick of one umbrella;

Figure 2 is a perspective view, partly in section, of a hinged wall of the handle of the Figure 1 umbrella, to an enlarged scale;

Figure 3 is an axial section through a pocket of another handle;

Figure 4 is a view similar to that of Figure 1 but showing another handle; and

Figure 5 is a perspective view, partly in section, of part of another handle.

A single reference numeral is used to indicate similar parts throughout the drawings.

A handle 8, shown in Figures 1 and 4, has a body rigidly connected to a lower end of an umbrella stick 2, and has two pockets 1 which are disposed diametrically opposite to one another across the stick axis. The pockets 1 receive ends 3 of inner rib parts 9 when the umbrella, of which the handle 8 forms a part, is closed, the stick shortened and the ribs are shortened, in this case by folding. The bottom of the handle and the bottom of the pockets are formed by a flange 7, while the pockets are bounded at their sides by walls 11. The handle has a central bush 4 which receives a part of a slider bush 5, formed with a wings 6, when the umbrella is shortened.

In the Figure 1 example, the end walls of the pockets 1 take the form of hinged flanges 13 which, when deflected from the full line position of Figure 1, are loaded by spring 12, as shown in detail in Figure 2, and which can swing about pivots 14. The springs 12 are so disposed on the pivots 14 that, when the springs are unstressed, the hinged flanges 13 are substantially perpendicular to the bottom flange 7. In this position, the hinged flanges locate the inner rib part ends in the chambers 1. When the umbrella is opened, the ribs are subjected, by the ringing over of outer rib members 10 in the direction away from the top of the umbrella, to a force directed substantially perpendicular to the axis of the stick 2 and press against the hinged flanges 13, so that the latter are pivoted downwards and outwards around the pivots 14 and the springs 12 are stressed. When the umbrella has been opened and all the ribs have been removed from the pockets 1, the force of the springs 12 return the hinged flanges 13 to their erect position. When the umbrella is closed, a force operative in the opposite direction is exerted on the hinged flanges 13, so that the latter rotate in the opposite direction towards the stick 2 around the pivots 14, and remain deflected, until the ribs are accommodated in the pockets and the resulting counter-pressure against the spring has creased. The spring 12 then return the hinged flanges 13 to their original undeflected positions.

The Figure 3 example utilises a bent metal strip 15 which has an upstanding part forming a resilient end wall for the pocket 1 and a retaining member for the rib ends therein. When the umbrella is opened, the upstanding part of the strip 15 is depressed against its own resilient force upon movement of the ribs away, from the stick 2, and correspondingly in the direction of the stick 2 when the umbrella is closed. When the counter-pressure ceases, the strip 15 automatically springs back into the retaining position. No etxending or retracting movement of the stick 2 is therefore required either when the ribs are introduced into the pockets or when they are pivoted out of the pockets.

The retaining means 16 shown in Figure 4 differs from the retaining means illustrated in Figures 1 and 3 by the feature that it is spring-loaded in only one direction and yields under the pressure of the ribs, pivoting outwards laterally and downwards only when the umbrella is opened, so that the ribs are released from the pockets 1. Each of the two retaining devices 16 is an angular hinged flange which is formed as the bottom wall 7 and end wall of the corresponding pocket 1 and has a spring-pivot construction similar to that used for the end wall in Figure 2. When, after the umbrella has been opened, the two retaining means 16 have sprung back into their normal position, they must be forced down by hand when the umbrella is closed, so that the ribs can be introduced into the pockets 1. Thereafter, the two retaining means 16 automatically return into the locking position.

The example shown in Figure 5 is a simplified variant of that shown in Figure 2. The spring-pivot construction is replaced by a resilient film hinge 17 consisting of a narrow connecting web between the pocket bottom wall 7 and an end wall flap 13. To this end, the members 7, 13 and 17 are produced in one piece from a suitable plastics material by injection moulding.

In addition to the simplification of the introduction of the ribs into the pockets and the pivoting of the ribs out of the pockets, there is no further necessity of retaining the ribs together in a bunch by means of a rubber

band after the umbrella has reached the closure position.

WHAT WE CLAIM IS:—

1. A handle for a flat shortenable umbrella having a substantially rectangular cross-section transverse to the stick axis when closed, the handle comprising a body portion for fixing to the lower end of an umbrella stick and two wings which project laterally in opposite directions and give the handle a substantially rectangular cross-section in a plane transverse to the axis of the stick to which the handle is to be fixed, each wing having a bottom wall, two opposed side walls, and an end wall defining with the body portion an upwardly open pocket, and at least the end walls being displaceable against spring action downwards relative to the body portion of the handle so that, when the handle forms part of an umbrella frame, rib end pants of the frame, when the frame is closed, can be swung over the end walls into or out of the pockets.

2. A handle according to Claim 1, in which the end wall of each wing is pivoted along a lower edge to the bottom wall and can be swung downwards against the spring action.

3. A handle according to Claim 2, in which the pivot hinge and the spring action are provided by a resilient film hinge integrally connecting the end and bottom wall of each wing.

4. A handle according to Claim 1, in which the side, end and bottom walls of each pocket are rigid with one another and are pivoted along an inner edge of the bottom wall to the body portion so that these walls can swing downwards against the spring action.

5. A handle according to Claim 1, in which the end wall of each wing comprises a springy strip which is mounted on the bottom wall of that wing and is flexible against its own resilience downwards relative to the bottom wall.

6. A handle according to any one of claims 1, 2, 3, or 5, in which each end wall may be displaced downwards by direct engagement with the rib end parts of an umbrella frame both as the rib parts are swung into or out of the pockets when the handle forms part of that umbrella frame.

7. A handle according to Claim 1, substantially as described with reference to Figures 1 and 2, or to any one of Figures 3 to 5, of the accompanying drawings.

8. A frame for a flat umbrella, the frame having a stick and a handle in accordance with any one of the preceding claims, the body portion of the handle being fixed to the lower end of the stick.

9. An umbrella incorporating a frame according to Claim 8.

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

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